FCC PART 15 SUBPART C
TEST REPORT

for

RADIO POPPER P1 TRANSMITTER

Model: P1

Prepared for

LEAP DEVICES, LLC.
20987 N. JOHN WAYNE PARKWAY, SUITE B-104-207
MARICOPA, ARIZONA, 85239

Prepared by: _____

BRANDON TAYLOR

Approved by: _____

MICHAEL CHRISTENSEN

COMPATIBLE ELECTRONICS INC.
114 OLINDA DRIVE
BREA, CALIFORNIA 92823
(714) 579-0500

DATE: MARCH 12, 2008

	REPORT BODY	APPENDICES					TOTAL
		A	***B***	***C***	***D***	***E***	
PAGES	15	2	2	2	11	4	**36**

TABLE OF CONTENTS

LIST OF APPENDICES

APPENDIX	TITLE
A	Laboratory Recognitions
B	Modifications to the EUT
C	Additional Models Covered Under This Report
D	Diagram, Charts, and Photos • Test Setup Diagram • Antenna and Amplifier Factors • Radiated Emission Photos
E	Data Sheets

LIST OF FIGURES

FIGURE	TITLE
1	Plot Map And Layout of the Radiated Test Site

GENERAL REPORT SUMMARY

Compatible Electronics Inc. generates this electromagnetic emission test report, 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, NIST or any other agency of the U.S. Government.

Device Tested:	Radio Popper P1 Transmitter Model: P1 S/N: N/A
Product Description:	The EUT is a transmitter.
Modifications:	The EUT was not modified during testing.
Manufacturer:	Leap Devices, LLC 20987 N. John Wayne Pkwy, Suite B-104-207 Maricopa, Arizona, 85239
Test Date:	February 26, 2008
Test Specifications:	EMI requirements CFR Title 47, Part 15, Subpart B, and Subpart C, Section 15.205, 15.209 and 15.249
Test Procedure:	ANSI C63.4
Test Deviations:	The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Radiated RF Emissions, 10 KHz – 9300 MHz	Complies with the **Class B** limits of **CFR** Title 47, Part 15, Subpart B and Subpart C, sections 15.205, 15.209, and 15.249 Highest Reading in Relation to Spec Limit: 48.91 dBµV @ 1833.00 MHz (*U_c = 2.39 dB)

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the Radio Popper P1 Transmitter, Model: P1. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4. 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 specification limits defined by CFR Title 47, Part 15, Subpart C, sections 15.205, 15.209, and 15.249.

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.

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

Compatible Electronics Inc.

Brandon Taylor	Test Technician
Kyle Fujimoto	Test Engineer
Michael Christensen	Lab Manager

2.4 Date Test Sample was Received

The test sample was received prior to the initial test date of February 26, 2008.

2.5 Disposition of the Test Sample

The test sample has been returned to Leap Devices, LLC as of the date of this report.

2.6 Abbreviations and Acronyms

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

FCC	Federal Communications Commission
RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
S/N	Serial Number
ITE	Information Technology Equipment
CML	Corrected Meter Limit
LISN	Line Impedance Stabilization Network
NVLAP	National Voluntary Laboratory Accreditation Program
CFR	Code of Federal Regulations
N/A	Not Applicable
PC	Personal Computer
Co.	Company
LTD	Limited
HD	High Density
DoC	Declaration of Conformity
HP	Hewlett Packard
USB	Universal Serial Bus
DIN	Deutsches Institut für Normung e.V.

3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
CFR Title 47, Part 15	FCC Rules – Radio frequency devices (including digital devices)
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

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration – EMI

The Radio Popper P1 Transmitter, Model: P1 (EUT) was continuously transmitting data.

It was determined that the emissions were at their highest level when the EUT was operating in the above configuration. The final radiated data was taken in this mode of operation. All initial investigations were performed with the spectrum analyzer 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

There were no cables on this device

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
RADIO POPPER P1 TRANSMITTER (EUT)	LEAP DEVICES, LLC	P1	N/A	VT4RPP1TX 770US

5.2 EMI Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CAL. CYCLE
EMI Receiver	Rohde & Schwarz	ESIB40	100149	November 27, 2006	2 Year
RF RADIATED EMISSIONS TEST EQUIPMENT					
Preamplifier	Com Power	PA-102	1017	January 11, 2008	1 Year
Microwave Preamplifier	Com Power	PA-122	181921	February 27, 2007	1 Year
Biconical Antenna	Com Power	AB-900	15227	March 8, 2007	1 Year
Log Periodic Antenna	Com Power	AL-100	16060	July 9, 2007	1 Year
Horn Antenna	Com-Power	AH-118	10085	March 6, 2006	2 Year
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A
Turntable	Com Power	TT-100	N/A	N/A	N/A

6. TEST SITE DESCRIPTION

6.1 Test Facility Description

Please refer to section 2.1 and 7.1.2 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.

6.3 Facility Environmental Characteristics

When applicable refer to the data sheets in Appendix E for the relative humidity, air temperature, and barometric pressure.

7. TEST PROCEDURES

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

7.1 RF Emissions

7.1.1 Radiated Emissions (Spurious and Harmonics) Test

The EMI Receiver was 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 from 1 GHz to 9.3 GHz. The EMI Receiver was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the EMI Receiver records the highest measured reading over all the sweeps.

The frequencies above 1 GHz were averaged manually by narrowing the video filter down to 10 Hz and putting the sweep time on AUTO on the EMI Receiver to keep the amplitude reading calibrated.

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. 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. 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. The loop antenna was also rotated in the horizontal and vertical axis in order to ensure accurate results.

7.2 Radiated Emissions (Spurious and Harmonics) Test (continued)

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 3 meter test distance to obtain final test data. The final qualification data sheets are located in Appendix E.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and CFR Title 47, Part 15, Subpart C, sections 15.205, 15.209, and 15.249.

8. CONCLUSIONS

The Radio Popper P1 Transmitter, Model: P1 (EUT) meets the **Class B** specification limits defined in CFR Title 47, Part 15, Subpart B, and Subpart C, sections 15.205, 15.209, and 15.249.

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

Radio-Frequency Technologies (Competent Body)

APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC 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.

No modifications were made.

APPENDIX C

ADDITIONAL MODELS COVERED UNDER THIS REPORT

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

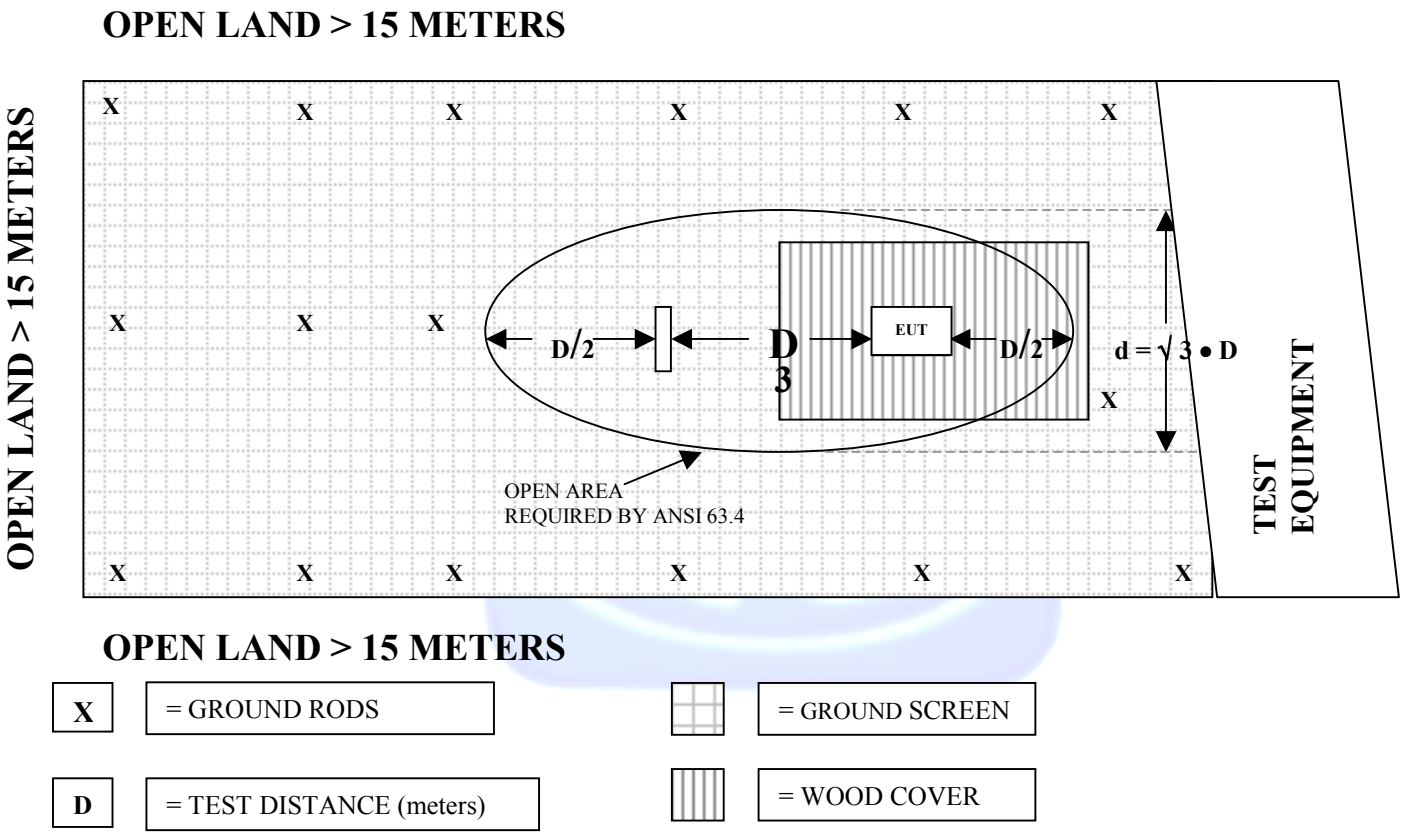
Radio Popper P1 Transmitter
Model: P1
S/N: N/A

There were no additional models approved under this report.

APPENDIX D

DIAGRAM, CHARTS, AND PHOTOS

FIGURE 1: PLOT MAP AND LAYOUT OF RADIATED TEST SITE



COM-POWER AB-900

BICONICAL ANTENNA

S/N: 15227

CALIBRATION DATE: MARCH 8, 2007

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	12.6	100	12.3
35	10.0	120	14.7
40	9.5	140	13.0
45	9.2	160	13.7
50	9.4	180	16.4
60	7.4	200	17.2
70	6.5	250	14.6
80	7.0	275	19.0
90	8.0	300	22.3

COM-POWER AL-100

LOG PERIODIC ANTENNA

S/N: 16060

CALIBRATION DATE: JULY 9, 2007

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
300	13.5	700	20.5
400	15.8	800	21.6
500	17.0	900	21.3
600	19.2	1000	22.2

COM POWER AH-118

HORN ANTENNA

S/N: 10085

CALIBRATION DATE: MARCH 6, 2006

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	25.30	10.0	39.05
1.5	27.00	10.5	39.52
2.0	30.09	11.0	39.16
2.5	30.25	11.5	41.71
3.0	31.29	12.0	41.92
3.5	33.07	12.5	41.67
4.0	31.72	13.0	41.37
4.5	33.10	13.5	42.34
5.0	33.90	14.0	43.58
5.5	34.57	14.5	45.80
6.0	34. 86	15.0	49.03
6.5	40.61	15.5	42.25
7.0	38.18	16.0	41.80
7.5	38.43	16.5	41.58
8.0	38.88	17.0	44.78
8.5	39.66	17.5	49.79
9.0	40.27	18.0	56.11
9.5	40.23		

COM-POWER PA-102

PREAMPLIFIER

S/N: 1017

CALIBRATION DATE: JANUARY 11, 2008

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	38.2	300	38.3
40	38.0	350	38.0
50	38.3	400	38.1
60	38.6	450	37.5
70	38.4	500	37.9
80	38.4	550	37.9
90	38.3	600	37.8
100	38.1	650	37.5
125	38.5	700	38.0
150	38.2	750	37.7
175	38.1	800	37.1
200	38.4	850	37.1
225	38.2	900	37.1
250	38.2	950	37.0
275	38.0	1000	36.5

COM-POWER PA-122

PREAMPLIFIER

S/N: 181921

CALIBRATION DATE: FEBRUARY 27, 2007

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	36.2	12.0	34.0
1.5	35.4	12.5	34.4
2.0	34.7	13.0	34.4
2.5	34.8	13.5	34.7
3.0	34.8	14.0	36.0
3.5	34.6	14.5	35.7
4.0	34.2	15.0	36.1
4.5	34.1	15.5	35.6
5.0	34.1	16.0	35.4
5.5	34.7	16.5	35.3
6.0	35.6	17.0	34.9
6.5	36.8	17.5	33.7
7.0	36.7	18.0	33.3
7.5	34.9	18.5	32.3
8.0	33.3	19.0	31.8
8.5	33.6	19.5	32.9
9.0	34.6	20.0	33.8
9.5	35.9	20.5	34.9
10.0	35.1	21.0	34.9
10.5	34.8	21.6	34.3
11.0	33.5	22.0	32.3
11.5	33.9		

FRONT VIEW

(30 MHz to 1000 MHz)

LEAP DEVICES, LLC.
RADIO POPPER P1 TRANSMITTER
MODEL: P1
FCC 15.249 – RADIATED EMISSIONS – 02-26-08

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

(30 MHz to 1000 MHz)

LEAP DEVICES, LLC.
RADIO POPPER P1 TRANSMITTER
MODEL: P1
FCC 15.249 – RADIATED EMISSIONS – 02-26-08

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

FRONT VIEW

(1000 MHz to 2000 MHz)

LEAP DEVICES, LLC.
RADIO POPPER P1 TRANSMITTER
MODEL: P1
FCC 15.249 – RADIATED EMISSIONS – 02-26-08

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

(1000 MHz to 2000 MHz)

LEAP DEVICES, LLC.
RADIO POPPER P1 TRANSMITTER
MODEL: P1
FCC 15.249 – RADIATED EMISSIONS – 02-26-08

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

APPENDIX E

DATA SHEETS

FCC 15.249
Leap Devices, LLC
RadioPopper P1 Transmitter
Model: P1

Date: 02/26/08
Labs: B and D
Tested By: Kyle Fujimoto

X-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
916.5	93.92	V	94	-0.08	Peak	1	90	
916.5	93.84	V	94	-0.16	QP	1	90	
1833	49.96	V	74	-4.04	Peak	1.21	45	
1833	45.89	V	54	-8.11	Avg	1.21	45	
2749.5	40.89	V	74	-33.11	Peak	1.35	180	
2749.5	29.75	V	54	-24.25	Avg	1.35	180	
3666	49.39	V	74	-24.61	Peak	1.27	90	
3666	40.88	V	54	-13.12	Avg	1.27	90	
4582.5	48.14	V	74	-25.86	Peak	1.21	150	
4582.5	38.59	V	54	-15.41	Avg	1.21	150	
5499	42.59	V	74	-31.41	Peak	1.05	150	
5499	29.51	V	54	-24.49	Avg	1.05	150	
6415.5		V	74		Peak			
6415.5		V	54		Avg			no emission found
7332		V	74		Peak			
7332		V	54		Avg			no emission found
8248.5		V	74		Peak			
8248.5		V	54		Avg			no emission found
9165.2		V	54		Peak			
9165.2		V	54		Avg			

FCC 15.249
Leap Devices, LLC
RadioPopper P1 Transmitter
Model: P1

Date: 02/26/08
Labs: B and D
Tested By: Kyle Fujimoto

X-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
916.5	85.58	H	94	-8.42	Peak	1.25	180	
916.5	85.48	H	94	-8.52	QP	1.25	180	
1833	50.61	H	74	-23.39	Peak	1.25	150	
1833	48.91	H	54	-5.09	Avg	1.25	150	
2749.5	38.14	H	74	-35.86	Peak	1.12	150	
2749.5	25.11	H	54	-28.89	Avg	1.12	150	
3666	44.78	H	74	-29.22	Peak	1.39	150	
3666	35.59	H	54	-18.41	Avg	1.39	150	
4582.5	43.01	H	74	-30.99	Peak	1	135	
4582.5	27.94	H	54	-26.06	Avg	1	135	
5499	42.89	H	74	-31.11	Peak	1.25	150	
5499	29.64	H	54	-24.36	Avg	1.25	150	
6415.5		H	74		Peak			
6415.5		H	54		Avg			no emissions found
7332		H	74		Peak			
7332		H	54		Avg			no emissions found
8248.5		H	74		Peak			
8248.5		H	54		Avg			no emissions found
9165.2		H	74		Peak			
9165.2		H	54		Avg			no emissions found

FCC 15.249 and FCC Class B
Leap Devices, LLC
RadioPopper P1 Transmitter
Model: P1

Date: 02/26/08
Labs: B and D
Tested By: Kyle Fujimoto

X-Axis
Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
								No Emissions Detected
								from the EUT
								for the Digital Portion,
								non-harmonic emissions,
								and at 902 and 928 MHz
								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.