Advanced Compliance Laboratory

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ELECTROMAGNETIC EMISSION COMPLIANCE REPORT

of

TEMPERATURE TAG

MODEL: IT-733P/IT-735P/IT-736P
FCC ID: ST2-2X73Y

February 09, 2011

This report concerns (check one): Original grant __x__ Class II change _____
Equipment type: Low Power Intentional Radiator

Deferred grant requested per 47 CF 0.457(d)(1)(ii)? yes _____ no __x__
If yes, defer until: _____ (date)
Company agrees to notify the Commission by _____ (date)
of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37? yes _____ no __x__
If no, assumed Part 15, Subpart B for unintentional radiators - the new 47 CFR [10-1-90 Edition] provision.

Report prepared for:	REMOTE PLAY, INC.
Report prepared by:	Advanced Compliance Lab
Report number:	0048-110202-01-FCC

NVLAP®

Lab Code: 200101 **The test result in this report IS supported and covered by the NVLAP accreditation**

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1. GENERAL INFORMATION

1.1 Verification of Compliance

EUT:	TEMPERATURE TAG
Model:	IT-733P/IT-735P/IT-736P
Applicant:	REMOTE PLAY, INC.
Test Type:	FCC Part 15C Sec. 15.249 CERTIFICATION
Result:	PASS
Tested by:	ADVANCED COMPLIANCE LABORATORY
Test Date:	February 02 - February 09, 2011
Report Number:	0048-110202-01-FCC

The above equipment was tested by Compliance Laboratory, Advanced Technologies, Inc. for compliance with the requirement set forth in the FCC rules and regulations Part 15 subpart C. This said equipment in the configuration described in the report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

The estimated uncertainty of the test result is given as following. The method of uncertainty calculation is provided in Advanced Compliance Lab. Doc. No. 0048-01-01.

	Prob. Dist.	Uncertainty(dB)	Uncertainty(dB)	Uncertainty(dB)
		30-1000MHz	1-6.5GHz	Conducted
Combined Std. Uncertainty u_c	norm.	±2.36	±2.99	±1.83

Wei Li
Lab Manager
Advanced Compliance Lab

Date February 09, 2011

1.2 Equipment Modifications

N/A

1.3 Product Information

System Configuration

ITEM	DESCRIPTION	FCC ID	CABLE
Product	TEMPERATURE TAG (1)	ST2-2X73Y	
Housing	PLASTICS		
Power Supply	3V DC Battery		
Operation Freq.	904MHz ~ 926MHz		
Receiver	2X73Y(RX)	Verification	

(1) EUT submitted for grant.

1.4 Test Methodology

Radiated tests were performed according to the procedures in ANSI C63.4-2003 at an antenna to EUT distance of 3 meters.

1.5 Test Facility

The open area test site and conducted measurement facility used to collect the radiated and conducted data are located at Hillsborough, New Jersey. This site has been accepted by FCC to perform measurements under Part 15 or 18 in a letter dated May 19, 1997 (Refer to: 31040/PRV 1300F2). The NVLAP Lab code for accreditation of FCC EMC Test Method is: 200101-0.

1.6 Test Equipment

Manufacture	Model	Serial No.	Description	Cal Due dd/mm/yy
Hewlett-Packard	HP8546A	3448A00290	EMI Receiver	25/09/11
EMCO	3104C	9307-4396	20-300MHz Biconical Antenna	19/10/11
EMCO	3146	9008-2860	200-1000MHz Log-Periodic Antenna	19/10/11
Fischer Custom	LISN-2	900-4-0008	Line Impedance Stabilization Networks	05/10/11
Fischer Custom	LISN-2	900-4-0009	Line Impedance Stabilization Networks	18/10/11
EMCO	3115	4945	Double Ridge Guide Horn Antenna	17/10/11

All Test Equipment Used are Calibrated Traceable to NIST Standards.

1.7 Statement for the Document Use

This report shall not be reproduced except in full, without the written approval of the laboratory. And this report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

2. PRODUCT LABELING

FCC ID: ST2-2X73Y

Figure 2.1 FCC ID Label

Figure 2.2 FCC Label Location (back of EUT)

3. SYSTEM TEST CONFIGURATION

3.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it). And its antenna was permanently attached to the EUT with max length, 3".

Testing was performed as EUT was continuously operated at the following frequency channels:

Low=904MHz, Middle= 914MHz, High=926MHz.

Fresh external battery was used for extended operating time.

3.2 Special Accessories

N/A

3.3 Configuration of Tested System

Figure 3.1 to Figure 3.3 illustrate this system, which is tested standing along.

Figure 3.1 Radiated Test Setup, position 1

Figure 3.2 Radiated Test Setup, position 2

Figure 3.3 Radiated Test Setup, position 3

4. SYSTEM SCHEMATICS

See Attachment.

Figure 4.1 System Schematics

5. RADIATED EMISSION DATA

5.1 Field Strength Calculation

The corrected field strength is automatically calculated by EMI Receiver using following:

$$FS = RA + AF + CF + AG$$

where FS: Corrected Field Strength in dBμV/m
RA: Amplitude of EMI Receiver before correction in dBμV
AF: Antenna Factor in dB/m
CF: Cable Attenuation Factor in dB
AG: Built-in Preamplifier Gain in dB (Stored in receiver as part of the calibration data)

*THE "DUTY CYCLE CORRECTION FACTOR" FOR SPURIOUS RADIATED EMISSIONS IS; 20 log * (4 ms / 100 ms) = -28 dB, WHICH WAS USED TO CORRECT THE AVERAGE RADIATED EMISSION READINGS.*

5.2 Test Methods and Conditions

The initial step in collecting radiated data is a EMI Receiver scan of the measurement range below 30MHz using peak detector and 9KHz IF bandwidth / 30KHz video bandwidth. For the range 30MHz - 1GHz, 100KHz IF bandwidth / 100KHz video bandwidth are used. Both bandwidths are 1MHz for above 1GHz measurement. Up to 10th harmonics were investigated.

5.3 Test Data

The following data lists the significant emission frequencies, polarity and position, peak reading of the EMI Receiver, the FCC limit, and the difference between the peak reading and the limit. Explanation of the correction and calculation are given in section 5.1.

Test Personnel: 

Typed/Printed Name: Edward Lee Date: February 09, 2011

Radiated Test Data (CH-904MHz/914MHz/926MHz & Harmonics)

Frequency (MHz)	Polarity (V,H) Position (X,Y,Z)	Antenna Height (m)	Azimuth (Degree)	Peak Reading at 3m (2) (dBuV/m)	Peak Reading After Correction (dBuV/m)	FCC 3m Limit (1) (dBuV/m)	Difference (dBuV/m)
904	V/X	1.2	000	94.6	66.6	94	-27.4
1808	V/X	1.1	180	47.7	19.7	54	-34.3
2712	V/X	1.0	250	44.7	16.7	54	-37.3
904	H/X	1.2	180	95.2	67.2	94	-26.8
1808	H/X	1.1	270	49.3	21.3	54	-32.7
2712	H/X	1.1	300	49.2	21.2	54	-32.8
914	V/X	1.2	300	91.6	63.6	94	-30.4
1828	V/X	1.1	180	50.4	22.4	54	-31.6
2712	V/X	1.0	170	60.1	32.1	54	-21.9
914	H/X	1.2	270	90.9	62.9	94	-31.1
1828	H/X	1.1	180	47.5	19.5	54	-34.5
2742	H/X	1.1	180	68.2	40.2	54	-13.8
926	V/X	1.2	270	94.2	66.2	94	-27.8
1852	V/X	1.0	180	52.3	24.3	54	-29.7
2778	V/X	1.0	135	60.4	32.4	54	-21.6
926	H/X	1.2	135	94.8	66.8	94	-27.2
1852	H/X	1.0	080	51.9	23.9	54	-30.1
2778	H/X	1.1	270	64.5	36.5	54	-17.5
904	V/Y	1.2	270	95.0	67	94	-27
1808	V/Y	1.1	180	54.2	26.2	54	-27.8
2712	V/Y	1.0	135	47.7	19.7	54	-34.3
904	H/Y	1.1	180	98.3	70.3	94	-23.7
1808	H/Y	1.1	180	48.2	20.2	54	-33.8
2712	H/Y	1.0	180	47.5	19.5	54	-34.5
914	V/Y	1.2	270	95.0	67	94	-27
1828	V/Y	1.1	180	51.5	23.5	54	-30.5
2712	V/Y	1.0	180	65.3	37.3	54	-16.7
914	H/Y	1.2	180	95.5	67.5	94	-26.5
1828	H/Y	1.0	225	47.2	19.2	54	-34.8
2742	H/Y	1.0	225	66.9	38.9	54	-15.1
926	V/Y	1.2	180	95.8	67.8	94	-26.2

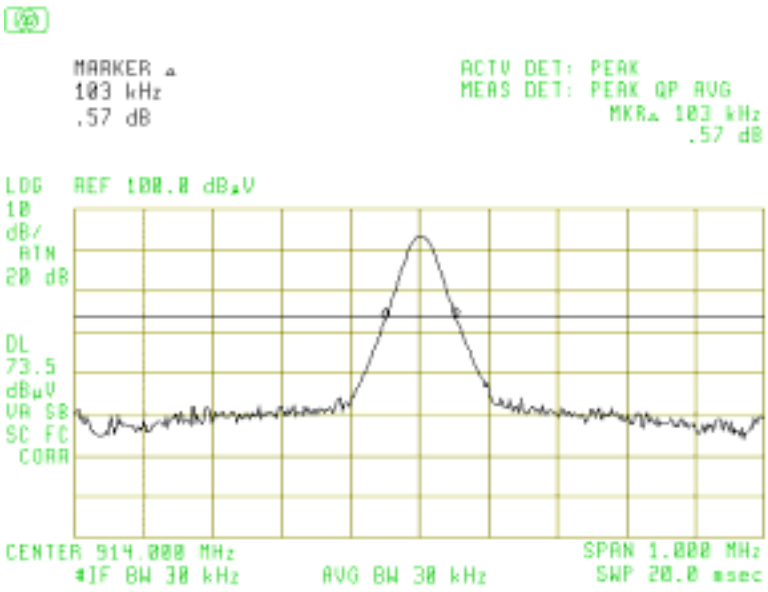
1852	V/Y	1.0	180	52.1	24.1	54	-29.9
2778	V/Y	1.0	180	60.9	32.9	54	-21.1
926	H/Y	1.2	270	97.8	69.8	94	-24.2
1852	H/Y	1.0	180	49.6	21.6	54	-32.4
2778	H/Y	1.0	180	60.7	32.7	54	-21.3
904	V/Z	1.2	000	95.7	67.7	94	-26.3
1808	V/Z	1.1	180	51.4	23.4	54	-30.6
2712	V/Z	1.1	180	46.3	18.3	54	-35.7
904	H/Z	1.2	180	95.4	67.4	94	-26.6
1808	H/Z	1.0	180	49.9	21.9	54	-32.1
2712	H/Z	1.0	180	48.2	20.2	54	-33.8
914	V/Z	1.2	180	93.7	65.7	94	-28.3
1828	V/Z	1.1	000	49.7	21.7	54	-32.3
2712	V/Z	1.1	000	61.2	33.2	54	-20.8
914	H/Z	1.2	270	92.9	64.9	94	-29.1
1828	H/Z	1.1	180	47.5	19.5	54	-34.5
2742	H/Z	1.0	180	67.5	39.5	54	-14.5
926	V/Z	1.2	180	94.6	66.6	94	-27.4
1852	V/Z	1.0	235	49.1	21.1	54	-32.9
2778	V/Z	1.0	235	57.5	29.5	54	-24.5
926	H/Z	1.2	270	93.8	65.8	94	-28.2
1852	H/Z	1.0	180	50.0	22	54	-32
2778	H/Z	1.0	180	63.6	35.6	54	-18.4

(1) The limit for emissions within the 902-928MHz band is 50mV(94dB) per Sec. 15.249. The limit for its harmonics is 500uV (54dB). Other spurious emissions shall be lower than either its fundamental by 50dB or the limit defined in Sec. 15.209, whichever is higher.
(2) If each peak reading is less than the FCC average limit, it'll be not necessary to show the measured/ calculated average reading.

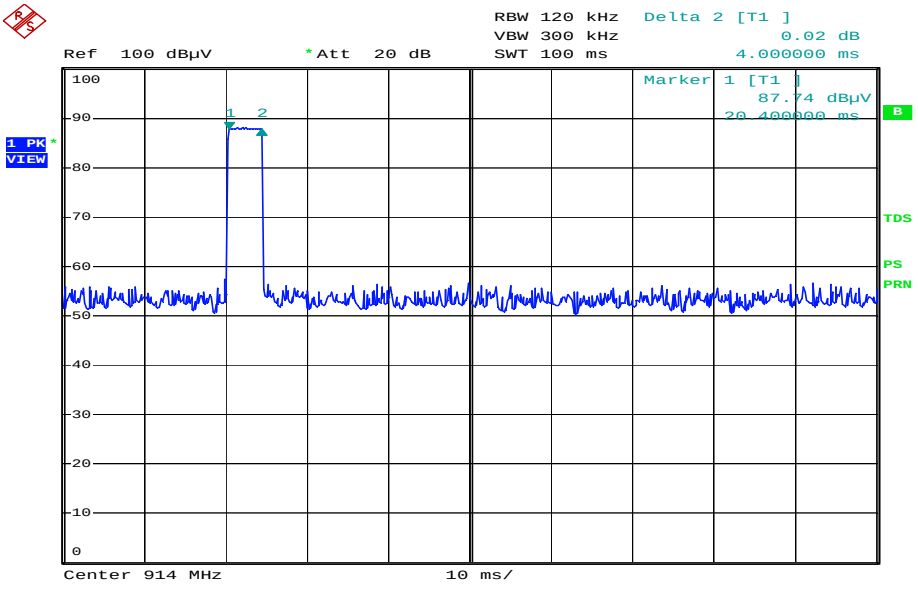
Other Spurious outside of the band 902-928MHz

Frequency (MHz)	Polarity (V,H) Position (X,Y,Z)	Antenna Height (m)	Azimuth (Degree)	Peak Reading at 3m (2) (dBuV/m)	FCC 3m Limit (1) (dBuV/m)	Difference (dBuV/m)
420	V/X	1.1	180	39.7	46.5	-6.8
472	V/X	1.1	225	40.8	46.5	-5.7
578	V/X	1.1	225	39.8	46.5	-6.7
368	H/X	1.0	090	36.5	46.5	-10.0
420	H/X	1.0	090	41.8	46.5	-4.7
472	H/X	1.0	000	41.3	46.5	-5.2
420	V/Y	1.1	270	38.7	46.5	-7.8
472	V/Y	1.1	270	41.7	46.5	-4.8
578	V/Y	1.1	180	39.7	46.5	-6.8
420	H/Y	1.O	090	40.6	46.5	-5.9
472	H/Y	1.0	090	39.8	46.5	-6.7
420	V/Z	1.1	235	38.0	46.5	-8.5
472	V/Z	1.1	235	39.5	46.5	-7.0
578	V/Z	1.1	270	39.7	46.5	-6.8
368	H/Z	1.0	090	36.2	46.5	-10.3
420	H/Z	1.0	135	41.0	46.5	-5.5
472	H/Z	1.0	135	38.6	46.5	-7.9

Comparing to the limit defined in Sec. 15.209, emissions below the limit by 20dB were not recorded.



20dB Bandwidth Plot



Duty Cycle Plot

6. EUT RECEIVING MODE VERIFICATION

Radiated Test Data for Receiving Mode (worst case: Y-position)

Frequency (MHz)	Polarity (H or V)	Antenna Height (m)	Azimuth (Degree)	Peak Reading at 3m(2) (dBuV/m)	FCC 3m Limit(1) (dBuV/m)	Difference (dBuV/m)
191.9	H	1.4	180	25.2	43.5	-18.3
195.8	H	1.4	180	26.9	43.5	-16.6
200	H	1.4	000	29.4	43.5	-14.1
204	H	1.1	090	31.9	43.5	-11.6
364	H	1.1	180	29.5	46.5	-17.0
416	H	1.0	135	36.1	46.5	-10.4
572	H	1.0	270	33.1	43.5	-10.4
624	H	1.0	335	31.7	46.5	-14.8
191.9	V	1.1	235	27.5	43.5	-16.0
195.8	V	1.1	235	27.9	43.5	-15.6
200	V	1.1	235	31.0	43.5	-12.5
204	V	1.1	090	33.1	43.5	-10.4
368	V	1.1	000	32.7	46.5	-13.8
418	V	1.1	270	36.7	46.5	-9.8
576	V	1.1	000	33.3	46.5	-13.2
624	V	1.0	090	32.1	46.5	-14.4

(1) Receiving mode spurious emissions shall be lower than the limit defined in Sec. 15.209.
(2) If each peak reading is less than the FCC average limit, it'll be not necessary to show the measured/ calculated average reading.