Advanced
Compliance Laboratory

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ELECTROMAGNETIC EMISSION COMPLIANCE REPORT

of

VIRTUAL WALL

MODEL: IT-323 & IT-321
FCC ID: ST2-2X32Y

November 03, 2010

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:	0048-101019-02-FCC

NVLAP®

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

Table of Contents

Figures

1. GENERAL INFORMATION

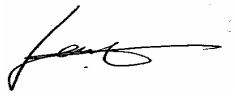
1.1 Verification of Compliance

EUT:	VIRTUAL WALL
Model:	IT-323 & IT-321
Applicant:	REMOTE PLAY, INC.
Test Type:	FCC Part 15C CERTIFICATION
Result:	PASS
Tested by:	ADVANCED COMPLIANCE LABORATORY
Test Date:	October 19 - November 03, 2010
Report Number:	0048-101019-02-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 November 03, 2010

1.2 Equipment Modifications

N/A

1.3 Product Information

System Configuration

ITEM	DESCRIPTION	FCC ID	CABLE
Product	VIRTUAL WALL (1)	ST2-2X32Y	
Housing	PLASTICS		
Power Supply	3V DC Battery		
Operation Freq.	904MHz ~ 926MHz		
Receiver	2X32Y(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: ST2-2X32Y

This device complies with part 15 of the FCC Rules. Operating is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Figure 2.1 FCC ID Label
(Only FCC ID shown on EUT)

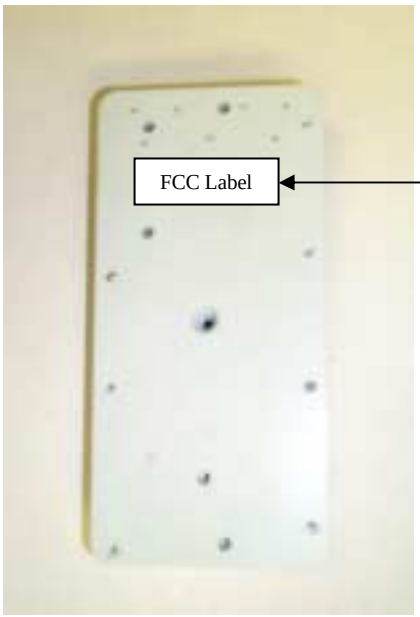


Figure 2.2 FCC Label Location

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 illustrate this system, which is tested standing along.

Figure 3.1 Radiated Test Setup

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 10^{th} 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: November 03, 2010

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	1.2	180	88.3	60.3	94	-33.7
1808	V	1.1	180	64.6	36.6	54	-17.4
2712	V	1.1	180	62.8	34.8	54	-19.2
904	H	1.2	225	89.9	61.9	94	-32.1
1808	H	1.1	180	57.7	29.7	54	-24.3
2712	H	1.1	180	54.2	26.2	54	-27.8
914	V	1.2	270	97.2	69.2	94	-24.8
1828	V	1.1	180	63.7	35.7	54	-18.3
2712	V	1.0	180	56.8	28.8	54	-25.2
914	H	1.2	135	93.9	65.9	94	-28.1
1828	H	1.1	180	59.1	31.1	54	-22.9
2742	H	1.1	180	47.2	19.2	54	-34.8
926	V	1.2	180	89.8	61.8	94	-32.2
1852	V	1.0	180	62.5	34.5	54	-19.5
2778	V	1.0	135	53.4	25.4	54	-28.6
926	H	12.0	135	87.9	59.9	94	-34.1
1852	H	1.0	180	57.3	29.3	54	-24.7
2778	H	1.0	180	41.8	13.8	54	-40.2

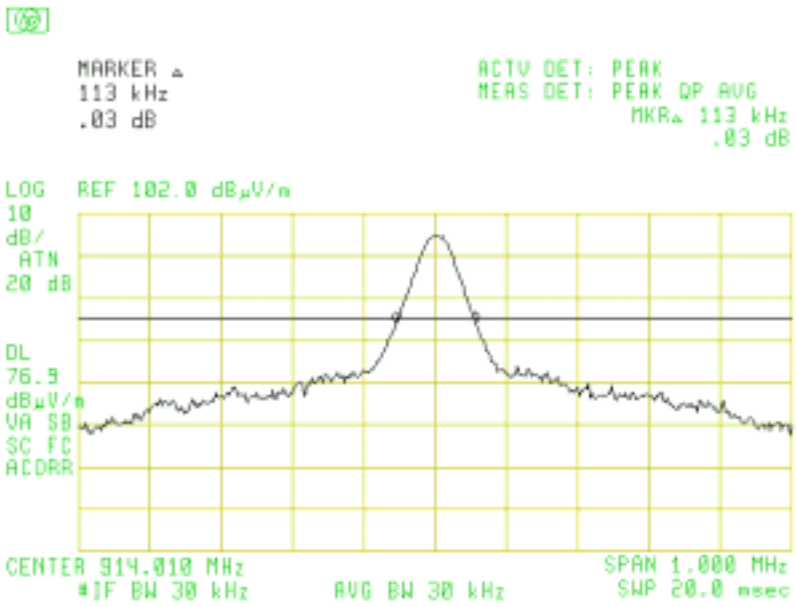
(1) The limit for emissions within the 902-928MHz band is 50mV(94dB) per Sec. 15.249. The limit for its harmonics is 500uV (54dB). Other spurious emissions shall be lower than either its fundamental by 50dB or the limit defined in Sec. 15.209, whichever is higher.
(2) If each peak reading is less than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

Other Spurious outside of the band 902-928MHz

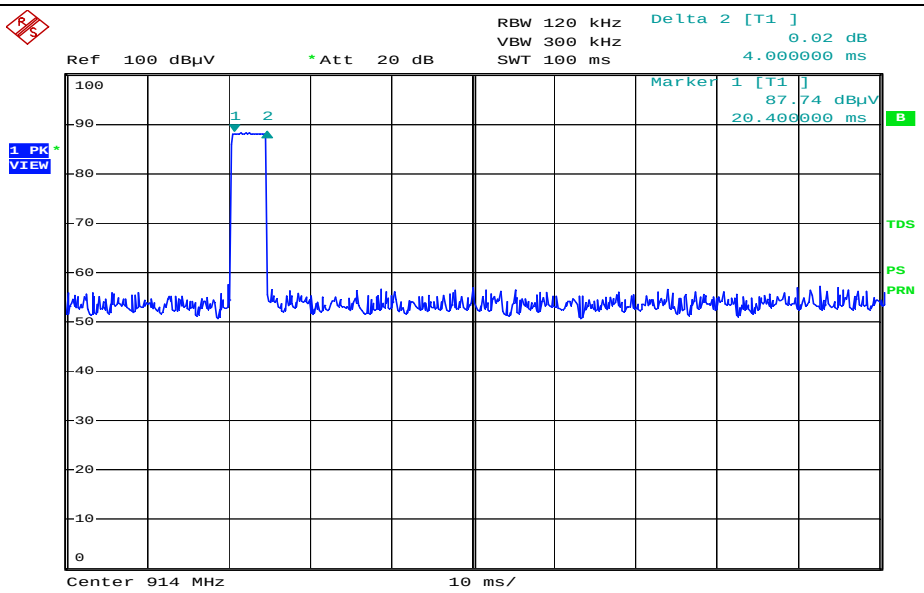
Frequency (MHz)	Polarity (V,H) Position X	Antenna Height (m)	Azimuth (Degree)	Peak Reading at 3m (2) (dBuV/m)	Peak Reading After Correction (dBuV/m)	FCC 3m Limit (1) (dBuV/m)	Difference (dBuV/m)
688	V	1.1	200	41.9		46.5	-4.6
748	V	1.1	000	40.9		46.5	-5.6
800	V	1.1	200	40.5		46.5	-6.0
854	V	1.1	045	41.5		46.5	-5.0
688	H	1.0	000	42.6		46.5	-3.9
748	H	1.0	000	43.3		46.5	-3.2
800	H	1.0	000	40.9		46.5	-5.6
810	V	1.1	090	43.7		46.5	-2.8
862	V	1.1	090	43.8		46.5	-2.7
966	V	1.1	045	48.1		54.0	-5.9
992	V	1.1	180	45.7		54.0	-8.3
810	H	1.0	182	39.4		46.5	-7.1
838	H	1.0	180	35.8		46.5	-10.7
860	H	1.0	180	40.3		46.5	-6.2
966	H	1.0	180	42.7		54.0	-11.3
770	V	1.1	045	40.8		46.5	-5.7
822	V	1.1	045	43.1		46.5	-3.4
870	V	1.1	045	43.0		46.5	-3.5
718	H	1.0	180	41.6		46.5	-4.9
770	H	1.0	180	45.0		46.5	-1.5
822	H	1.0	180	42.9		46.5	-3.6
848	H	1.0	180	42.7		46.5	-3.8
1060.8	V	1.2	180	36.3		54.0	-17.7
1018.0	V	1.0	000	46.8		54.0	-7.2
1070.0	V	1.0	000	47.2		54.0	-6.8
1123.0	V	1.0	000	43.4		54.0	-10.6
1175.0	V	1.0	090	43.3		54.0	-10.7
1227.0	V	1.0	000	41.7		54.0	-12.3
1279.0	V	1.0	090	42.7		54.0	-11.3
1331.0	V	1.0	090	43.8		54.0	-10.2
1018.0	H	1.0	135	43.9		54.0	-10.1
1070.0	H	1.0	135	39.7		54.0	-14.3
1175.0	H	1.0	135	39.6		54.0	-14.4

1033.0	V	1.1	000	49.2		54.0	-4.8
1086.0	V	1.1	000	48.4		54.0	-5.6
1138.0	V	1.1	090	46.6		54.0	-7.4
1242.0	V	1.1	045	48.9		54.0	-5.1
1295.0	V	1.1	045	46.1		54.0	-7.9
1347.0	V	1.1	045	46.4		54.0	-7.6
1399.0	V	1.1	090	46.9		54.0	-7.1
1033.0	H	1.0	000	42.8		54.0	-11.2
1086.0	H	1.0	000	43.2		54.0	-10.8
1138.0	H	1.0	000	41.4		54.0	-12.6
1190.0	H	1.0	000	41.3		54.0	-12.7
1242.0	H	1.0	000	41.1		54.0	-12.9

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: X-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)
316	V	1.1	180	23.2	46.5	-23.3
406	V	1.1	180	24.7	46.5	-21.8
446	V	1.1	315	25.5	46.5	-21.0
472	V	1.1	315	27.1	46.5	-19.4
288	H	1.0	090	26.2	46.5	-20.3
314	H	1.0	180	25.8	46.5	-20.7
350	H	1.0	180	28.0	46.5	-18.5
392	H	1.0	000	27.3	46.5	-19.2
446	H	1.0	000	26.8	46.5	-19.7
472	H	1.0	000	28.0	46.5	-18.5

(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.

7. PHOTOS OF TESTED EUT

The following photos show the inside details of the EUT.