

6 Randolph Way Hillsborough, NJ 08844 Tel: (908) 927 9288 Fax: (908) 927 0728

ELECTROMAGNETIC EMISSION COMPLIANCE REPORT

of

HYGIENE MONITOR

MODEL: IT370, IT-373, IT-374, IT-375 FCC ID: ST2-2X37Y

September 10, 2010

This report concerns (check one): O Equipment type: Low Power Intention	original grant <u>x</u> Class II change nal Radiator
Company agrees to notify the Comm	res, defer until:(date)
Transition Rules Request per 15.37? If no, assumed Part 15, Subpart B for [10-1-90 Edition] provision.	yes nox nox unintentional radiators - the new 47 CFR
Report prepared for: Report prepared by: Report number:	REMOTE PLAY, INC. Advanced Compliance Lab 0048-100812-01-FCC



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

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FCC ID: ST2-2X37Y

1. GENERAL INFORMATION

1.1 Verification of Compliance

EUT: HYGIENE MONITOR

Model: IT370, IT-373, IT-374, IT-375

Applicant: REMOTE PLAY, INC.

Test Type: FCC Part 15C CERTIFICATION

Result: PASS

Tested by: ADVANCED COMPLIANCE LABORATORY

Test Date: August 12-September 10, 2010

Report Number: 0048-100812-01-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 September 10, 2010, 2010

1.2 Equipment Modifications

N/A

1.3 Product Information

System Configuration

ITEM	DESCRIPTION	FCC ID	CABLE
Product	HYGIENE MONITOR	ST2-2X37Y	
	2X37Y ⁽¹⁾		
Housing	PLASTICS		
Power Supply	3V DC Battery		
Operation Freq.	904MHz ~ 926MHz		
Receiver	2X37Y(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-	HP8546A	3448A0029	EMI Receiver	25/09/10
Packard		0		
EMCO	3104C	9307-4396	20-300MHz Biconical Antenna	19/10/10
EMCO	3146	9008-2860	200-1000MHz Log-Periodic Antenna	19/10/10
Fischer Custom	LISN-2	900-4-0008	Line Impedance Stabilization	05/10/11
			Networks	
Fischer Custom	LISN-2	900-4-0009	Line Impedance Stabilization	18/10/11
			Networks	
EMCO	3115	4945	Double Ridge Guide Horn Antenna	17/10/10

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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: ST2-2X37Y

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)

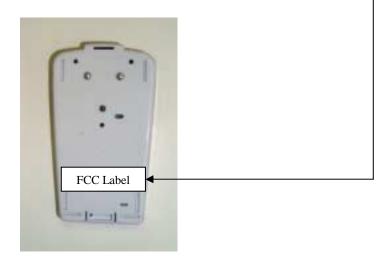


Figure 2.2 FCC Label Location

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

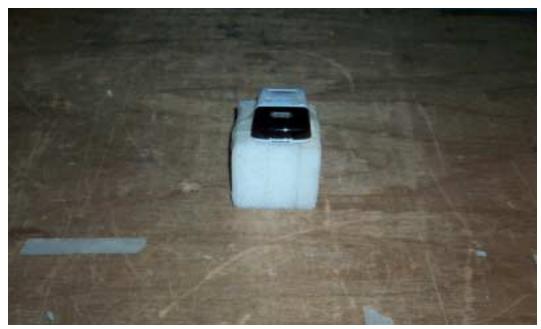


Figure 3.1 Radiated Test Setup, position 1



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

FCC ID: ST2-2X37Y

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

L. Sum

Date: September 10, 2010

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

Frequency			,	Peak	Peak	FCC 3m	Difference
i requestey			,	Reading	Reading		
	(V,H)	Height		at 3m	After	Limit	
	Position			(2)	Correction	` '	
(MHz)	(X,Y,Z)	(m)	<u> </u>	(dBuV/m)	(dBuV/m)	, ,	(dBuV/m)
904	V/X	1.2	270	81.2	53.2	94	-40.8
1808	V/X	1.1	180	46.8	18.8	54	-35.2
2712	V/X	1.1	180	60.5	32.5	54	-21.5
904	H/X	1.2	135	87.4	59.4	94	-34.6
1808	H/X	1.1	180	53.2	25.2	54	-28.8
2712	H/X	1.1	180	62.0	34	54	-20
914	V/X	1.2	180	79.9	51.9	94	-42.1
1828	V/X	1.1	180	51.9	23.9	54	-30.1
2712	V/X	1.0	180	62.8	34.8	54	-19.2
914	H/X	1.2	270	88.6	60.6	94	-33.4
1828	H/X	1.1	180	58.6	30.6	54	-23.4
2742	H/X	1.1	180	68.6	40.6	54	-13.4
926	V/X	1.2	180	82.2	54.2	94	-39.8
1852	V/X	1.0	180	48.5	20.5	54	-33.5
2778	V/X	1.0	180	57.6	29.6	54	-24.4
926	H/X	12.0	180	89.2	61.2	94	-32.8
1852	H/X	1.0	090	52.8	24.8	54	-29.2
2778	H/X	1.0	180	59.2	31.2	54	-22.8
904	V/Y	1.2	225	87.4	59.4	94	-34.6
1808	V/Y	1.1	180	50.9	22.9	54	-31.1
2712	V/Y	1.0	180	64.1	36.1	54	-17.9
904	H/Y	1.1	135	84.3	56.3	94	-37.7
1808	H/Y	1.1	090	46.8	18.8	54	-35.2
2712	H/Y	1.0	180	61.8	33.8	54	-20.2
	l.						
914	V/Y	1.2	135	89.3	61.3	94	-32.7
1828	V/Y	1.1	135	60.9	32.9	54	-21.1
2712	V/Y	1.0	180	67.5	39.5	54	-14.5
914	H/Y	1.2	090	88.4	60.4	94	-33.6
1828	H/Y	1.0	180	57.1	29.1	54	-24.9
2742	H/Y	1.0	180	61.7	33.7	54	-20.3
	·				·		
926	V/Y	1.2	270	88.4	60.4	94	-33.6

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		1	ı	1		1
V/Y	1.0	180	56.6	28.6	54	-25.4
V/Y	1.0	180	63.5	35.5	54	-18.5
H/Y	1.2	270	84.7	56.7	94	-37.3
H/Y	1.0	180	51.8	23.8	54	-30.2
H/Y	1.0	180	58.7	30.7	54	-23.3
V/Z	1.2	180	88.1	60.1	94	-33.9
V/Z	1.1	180	64.4	36.4	54	-17.6
V/Z	1.1	135	54.8	26.8	54	-27.2
H/Z	1.2	180	85.9	57.9	94	-36.1
H/Z	1.0	170	51.3	23.3	54	-30.7
H/Z	1.0	170	64.4	36.4	54	-17.6
V/Z	1.2	135	90.8	62.8	94	-31.2
V/Z	1.1	135	67.3	39.3	54	-14.7
V/Z	1.1	180	66.6	38.6	54	-15.4
H/Z	1.2	180	85.3	57.3	94	-36.7
H/Z	1.1	160	57.0	29	54	-25
H/Z	1.0	180	63.6	35.6	54	-18.4
V/Z	1.2	135	89.6	61.6	94	-32.4
V/Z	1.0	090	60.6	32.6	54	-21.4
V/Z	1.0	180	60.1	32.1	54	-21.9
H/Z	1.2	180	87.1	59.1	94	-34.9
H/Z	1.0	180	51.0	23	54	-31
H/Z	1.0	180	57.3	29.3	54	-24.7
	H/Y H/Y H/Y V/Z V/Z V/Z H/Z H/Z H/Z V/Z V/Z	V/Y 1.0 H/Y 1.2 H/Y 1.0 H/Y 1.0 V/Z 1.1 V/Z 1.1 H/Z 1.2 H/Z 1.0 H/Z 1.0 V/Z 1.1 V/Z 1.1 H/Z 1.2 H/Z 1.1 H/Z 1.0 V/Z 1.0 H/Z 1.0 H/Z 1.0	V/Y 1.0 180 H/Y 1.2 270 H/Y 1.0 180 H/Y 1.0 180 V/Z 1.2 180 V/Z 1.1 180 V/Z 1.1 135 H/Z 1.0 170 H/Z 1.0 170 V/Z 1.1 135 V/Z 1.1 180 H/Z 1.2 180 H/Z 1.1 160 H/Z 1.0 180 V/Z 1.0 180 H/Z 1.0 180 H/Z 1.0 180 H/Z 1.0 180	V/Y 1.0 180 63.5 H/Y 1.2 270 84.7 H/Y 1.0 180 51.8 H/Y 1.0 180 58.7 V/Z 1.2 180 88.1 V/Z 1.1 180 64.4 V/Z 1.1 135 54.8 H/Z 1.2 180 85.9 H/Z 1.0 170 51.3 H/Z 1.0 170 64.4 V/Z 1.1 135 90.8 V/Z 1.1 135 67.3 V/Z 1.1 180 66.6 H/Z 1.2 180 85.3 H/Z 1.1 160 57.0 H/Z 1.0 180 63.6 V/Z 1.2 135 89.6 V/Z 1.0 180 60.1 H/Z 1.0 180 60.1 H/Z 1.0 180 </td <td>V/Y 1.0 180 63.5 35.5 H/Y 1.2 270 84.7 56.7 H/Y 1.0 180 51.8 23.8 H/Y 1.0 180 58.7 30.7 V/Z 1.2 180 88.1 60.1 V/Z 1.1 180 64.4 36.4 V/Z 1.1 135 54.8 26.8 H/Z 1.2 180 85.9 57.9 H/Z 1.0 170 51.3 23.3 H/Z 1.0 170 64.4 36.4 V/Z 1.1 135 67.3 39.3 V/Z 1.1 135 67.3 39.3 V/Z 1.1 180 66.6 38.6 H/Z 1.1 160 57.0 29 H/Z 1.0 180 63.6 35.6 V/Z 1.0 180 60.1 32.1 H/Z</td> <td>V/Y 1.0 180 63.5 35.5 54 H/Y 1.2 270 84.7 56.7 94 H/Y 1.0 180 51.8 23.8 54 H/Y 1.0 180 58.7 30.7 54 V/Z 1.1 180 68.1 60.1 94 V/Z 1.1 180 64.4 36.4 54 V/Z 1.1 135 54.8 26.8 54 H/Z 1.2 180 85.9 57.9 94 H/Z 1.0 170 51.3 23.3 54 H/Z 1.0 170 64.4 36.4 54 V/Z 1.1 135 67.3 39.3 54 V/Z 1.1 180 66.6 38.6 54 H/Z 1.1 180 66.6 38.6 54 H/Z 1.1 160 57.0 29 54</td>	V/Y 1.0 180 63.5 35.5 H/Y 1.2 270 84.7 56.7 H/Y 1.0 180 51.8 23.8 H/Y 1.0 180 58.7 30.7 V/Z 1.2 180 88.1 60.1 V/Z 1.1 180 64.4 36.4 V/Z 1.1 135 54.8 26.8 H/Z 1.2 180 85.9 57.9 H/Z 1.0 170 51.3 23.3 H/Z 1.0 170 64.4 36.4 V/Z 1.1 135 67.3 39.3 V/Z 1.1 135 67.3 39.3 V/Z 1.1 180 66.6 38.6 H/Z 1.1 160 57.0 29 H/Z 1.0 180 63.6 35.6 V/Z 1.0 180 60.1 32.1 H/Z	V/Y 1.0 180 63.5 35.5 54 H/Y 1.2 270 84.7 56.7 94 H/Y 1.0 180 51.8 23.8 54 H/Y 1.0 180 58.7 30.7 54 V/Z 1.1 180 68.1 60.1 94 V/Z 1.1 180 64.4 36.4 54 V/Z 1.1 135 54.8 26.8 54 H/Z 1.2 180 85.9 57.9 94 H/Z 1.0 170 51.3 23.3 54 H/Z 1.0 170 64.4 36.4 54 V/Z 1.1 135 67.3 39.3 54 V/Z 1.1 180 66.6 38.6 54 H/Z 1.1 180 66.6 38.6 54 H/Z 1.1 160 57.0 29 54

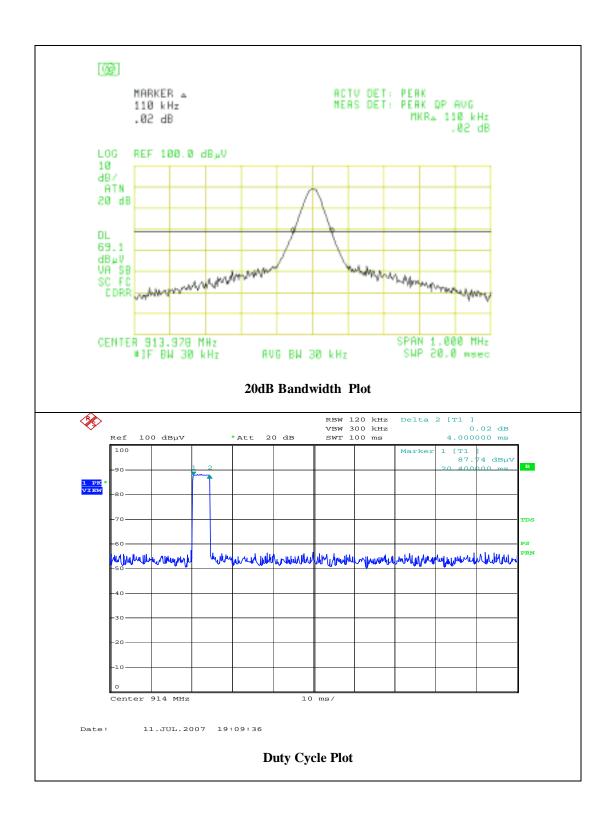
⁽¹⁾ The limit for emissions within the 902-928MHz band is 50mV(94dB) per Sec. 15.249. The limit for its harmonics is 500uV (54dB). Other spurious emissions shall be lower than either its fundamental by 50dB or the limit defined in Sec. 15.209, whichever is higher.

⁽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	Polarity	Antenna	Azimuth	Peak Reading	Peak Reading	FCC 3m	Difference
	(V,H)	Height		at 3m	After	Limit	
	Position			(2)	Correction	(1)	
(MHz)	(X,Y,Z)	(m)	(Degree)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)
758	V/Y	1.1	180	31.2		46.5	-15.3
810	V/Y	1.1	180	31.4		46.5	-15.1
862	V/Y	1.1	180	34.9		46.5	-11.6
966	V/Y	1.1	180	40.0		46.5	-6.5
810	H/Y	1.0	090	40.0		46.5	-6.5
758	H/X	1.0	090	39.5		46.5	-7.0
862	H/Y	1.0	325	36.5		46.5	-10.0
966	H/Y	1.0	325	41.2		46.5	-5.3

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



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6. EUT RECEIVING MODE VERIFICATION

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

Frequency	Polarity	Antenna	Azimuth	Peak Reading	FCC 3m	Difference
		Height		at 3m(2)	Limit(1)	
(MHz)	(H or V)	(m)	(Degree)	(dBuV/m)	(dBuV/m)	(dBuV/m)
44.5	Η	1.4	180	26.2	40.0	-13.8
162.6	Η	1.4	170	30.3	43.5	-13.2
616	Η	1.1	170	30.8	46.5	-15.7
650	Η	1.1	090	28.9	46.5	-17.6
678	Η	1.0	090	29.5	46.5	-17.0
688	Ι	1.0	135	30.1	46.5	-16.4
52.5	V	1.4	180	25.7	40.0	-14.3
130.7	V	1.3	180	32.5	43.5	-11.0
506	V	1.1	225	26.2	46.5	-20.3
530	V	1.1	225	25.8	46.5	-20.7

⁽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.