

FCC CERTIFICATION RADIO MEASUREMENT TECHNICAL AND INDUSTRY CANADA RSS-210 REPORT

On Model Name : WE-01

Model Numbers : WE-01

Trademark : 

FCC ID : UE6WE1BCD

IC Number : 6617A-WE1BCD

Prepared for

According to FCC PART 15 (2005), Subpart C

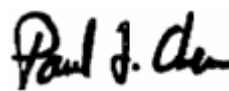
According to RSS 210 Issue 6:2005 Annex 1

Test Report #: PSZ06060719FCCID

Prepared by: Ivan Wen

QC Manager: Paul Chen

Test Report Released by:



Paul Chen

2007 , Feb 2th

Date

Test Location

Tests performed at Shenzhen Electronic Product Quality Testing center (China) in a Certified ANSI Semi-Anechoic Chamber and Shielded Room performed testing.

*Test Site Location: Electronic Testing Building
Shahe Road, Xili, Nanshan
District Shenzhen 518055, P.R.
China.*

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Industry Canada Registration Number : 5915

Accreditation Bodies

EMC Compliance Management Group is a fully accredited Test Laboratory for ITE, ISM and Telecommunications Products.



In compliance with the site registration requirements of Section 2.948 of the FCC Rules to perform EMI measurements for the general public.



Accredited by the National Voluntary Laboratory Accreditation Program for the specific scope of accreditation under Lab Code # 200068-0.

List of Attached Files

Exhibit Type	File Description	File Name
<i>Test Report</i>	<i>Test Report</i>	<i>UE6WE1BCD_ Test report.pdf</i>
<i>Operational Description</i>	<i>Technical Description</i>	<i>UE6WE1BCD_operation description.pdf</i>
<i>External Photos</i>	<i>External Photos</i>	<i>UE6WE1BCD_External Photos</i>
<i>Internal Photos</i>	<i>Internal Photos</i>	<i>UE6WE1BCD_Internal Photos</i>
<i>Block Diagram</i>	<i>Block Diagram</i>	<i>UE6WE1BCD_Block Diagram.pdf</i>
<i>Schematics</i>	<i>Circuit Diagram for receiver</i>	<i>UE6WE1BCD_Schematics_console.pdf</i>
<i>Schematics</i>	<i>Circuit Diagram for transmitter</i>	<i>UE6WE1BCD_Shematics_sensor.pdf</i>
<i>ID Label&Location</i>	<i>Label Artwork and Location</i>	<i>UE6WE1BCD_Label & Location.pdf</i>
<i>User Manual</i>	<i>User Manual</i>	<i>UE6WE1BCD_User Manual.pdf</i>
<i>Test setup photos</i>	<i>Test setup photos</i>	<i>UE6WE1BCD_Test Setup Photos.pdf</i>

Table of Contents

<i>DISCLAIMER NOTICE</i>	<i>1</i>
<i>REPRODUCTION CLAUSE</i>	<i>1</i>
<i>OPINIONS AND INTERPRETATIONS</i>	<i>1</i>
<i>STATEMENT OF MEASUREMENT UNCERTAINTY</i>	<i>1</i>
<i>ADMINISTRATIVE DATA</i>	<i>2</i>
<i>EUT DESCRIPTION</i>	<i>2</i>
<i>TEST SUMMARY</i>	<i>4</i>
<i>TEST MODE JUSTIFICATION</i>	<i>5</i>
<i>EUT EXERCISE SOFTWARE</i>	<i>5</i>
<i>EQUIPMENT MODIFICATION</i>	<i>5</i>
<i>TEST SYSTEM DETAILS</i>	<i>6</i>
<i>CONFIGURATION OF TESTED SYSTEM</i>	<i>7</i>
<i>ATTACHMENT 1 - ANTENNA REQUIREMENT</i>	<i>8</i>
<i>ATTACHMENT 2 - RADIATED EMISSION MEASUREMENT</i>	<i>11</i>
<i>ATTACHMENT 3 - BANDWIDTH MEASUREMENT</i>	<i>18</i>

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Opinions and Interpretations

This test report relates to the abovementioned equipment under test (EUT). Without the permission of EMC Compliance Management Group Test Lab this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark on this or similar products. The manufacturer has sole responsibility of continued compliance of the device.

Statement of Measurement Uncertainty

The data and results referenced in the document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities that can account for a nominal measurement error. Furthermore, component and process variability of devices similar to that tested may result in additional deviation.

Administrative Data

Test Sample : *Strollometer*

Model Number : *WE-01*

Model Tested : *WE-01-*

Trade Mark : 

Date Tested : *2007, Feb 01th*

Applicant : *9 Months Up, 9 Months Down, LLC*
Great Neck, NY 11021

Telephone : *001-516 6849804*

Fax : *001-516 6849807*

Manufacturer : *9 Months Up, 9 Months Down, LLC*
Great Neck, NY 11021

EUT Description

9 Months Up, 9 Months Down, LLC . Model number WE-01 is for new mother to get back into shape , it measures stroller speed ,distance ,etc.

The Strollometer has two main parts:

Console: Contains the strollometer screen to display speed,distance,time etc. strapped onto the stroller handlebar.

Sensor: Strapped onto the rear stroller leg. As user strolls ,the sensor measures the stroller wheel rotations and sends information wirelessly to the console.

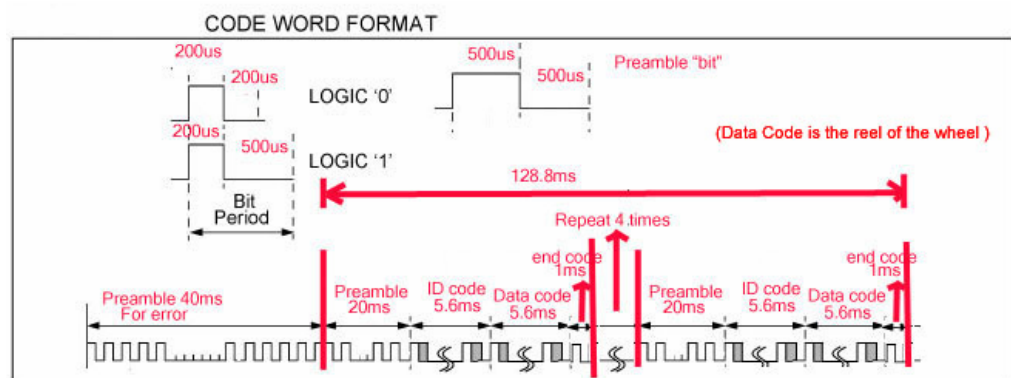
Parameter:

Frequency Range : 433.92±0.2MHz

Type of Modulation : AM modulation

Power supply : 2.2-3 V DC(CR2302 battery)

data diagram:



Test Summary

The Electromagnetic Compatibility requirements on EUT for this test are stated below. All results listed in this report relate exclusively to this above-mentioned model as the Equipment Under Test. This report confers no approval or endorsement upon any other component, host or subsystem used in the test set-up.

EMC Test Items			
<i>Reference FCC Part 15 (2005), Subpart C</i>			
Specification	Description	Test Results	Remark
FCC Part 15.203 RSS-GEN § 7.14	Antenna Requirement	Compliance	Attachment 1
FCC Part 15.205 RSS-210 issue6 § 2.7	Restricted Band of Operation	Compliance	Attachment 2
FCC Part 15.207 RSS-GEN § 7.22	Conducted Limits	Test is not applicable, because EUT only employ battery power for operation.	
FCC Part 15.209 RSS-210 issue6 § A1.12	Radiated Emission Limits	Compliance	Attachment 2
FCC Part 15.231 (a)	Operation Mode	Test Is not applicable, because the fundamental & spurious compliance with the general limits specified in Section 15.209(a)	
FCC Part 15.231 (e) RSS-210 issue6 § A1.12	Field Strength of Fundamental and Spurious Emissions		
FCC Part 15.231 (c) RSS-210 issue6 § A1.13	Bandwidth	Compliance	Attachment 3

Test Mode Justification

This device complies with Part 15 of the FCC rules. Operation 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.

This device complies with Industry Canada RSS-210 issue 6: 2005 Annex 1.

EUT Exercise Software

The device is not programmable and does not use software.

Equipment Modification

Any modifications installed previous to testing by 9 Months Up, 9 Months Down, LLC . will be incorporated in each production model sold or leased in United States.

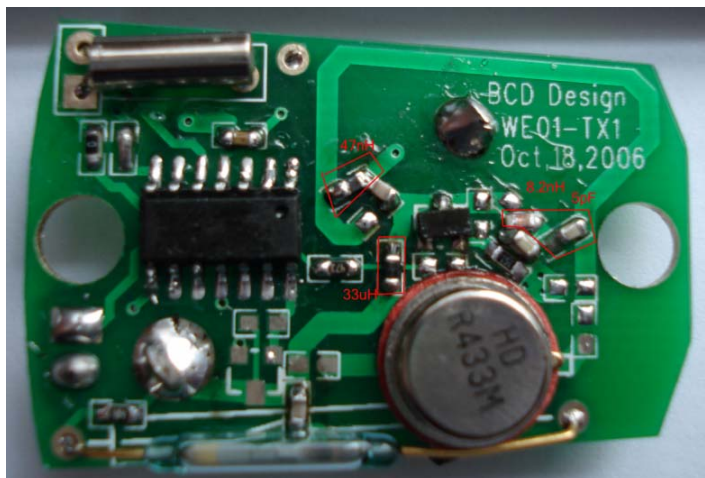
There were some modifications installed at transmitter by Manufacturer, details as follow:

Add a 5pf capacitor and 8nH inductor between the collector and emitter of Q202


Add a 47nH inductor between the collector(Q202) and C217

Add a 33uH inductor between C219 and C211

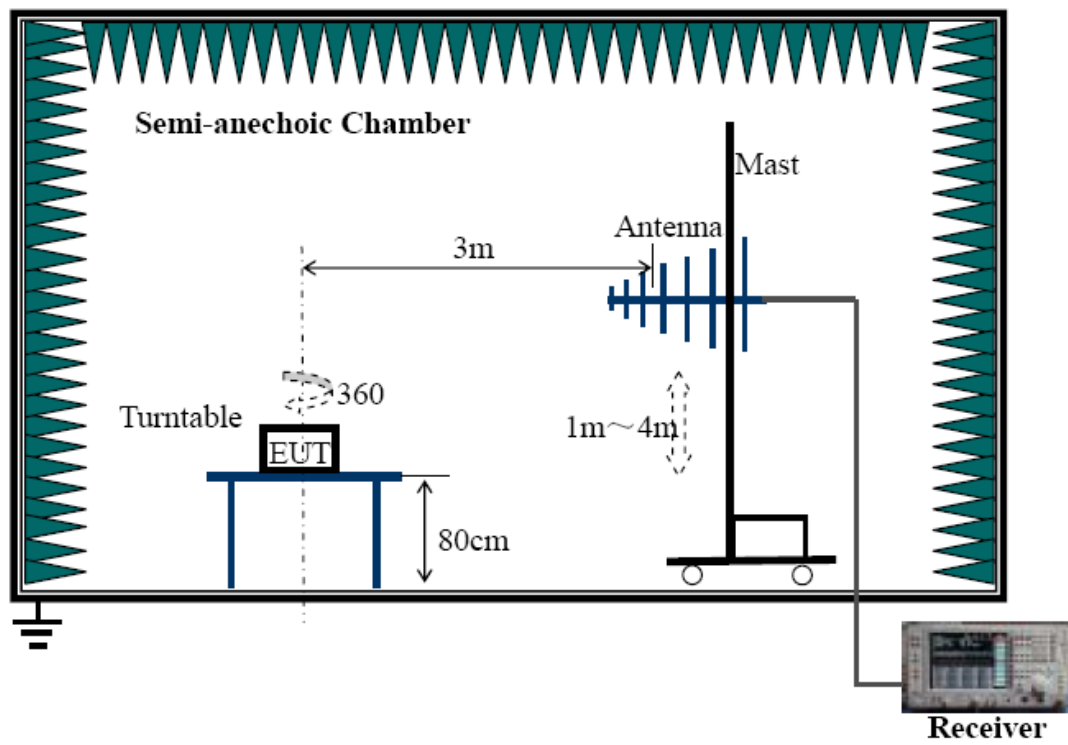
Change the R215 from 47K0603 to 100K0603



Test System Details

EUT				
Model Number:	WE-01			
Model Tested:	WE-01			
Trademark::				
Serial Number:	Engineering Sample			
Input Voltage:	3V DC (CR2302 Batteries)			
Description:	Strollometer			
Manufacturer:	9 Months Up, 9 Months Down, LLC .			
Support Equipment				
Description	Model Number	Serial Number	Manufacturer	Power Cable Description (Meters)
None				
Cable Description				
None				

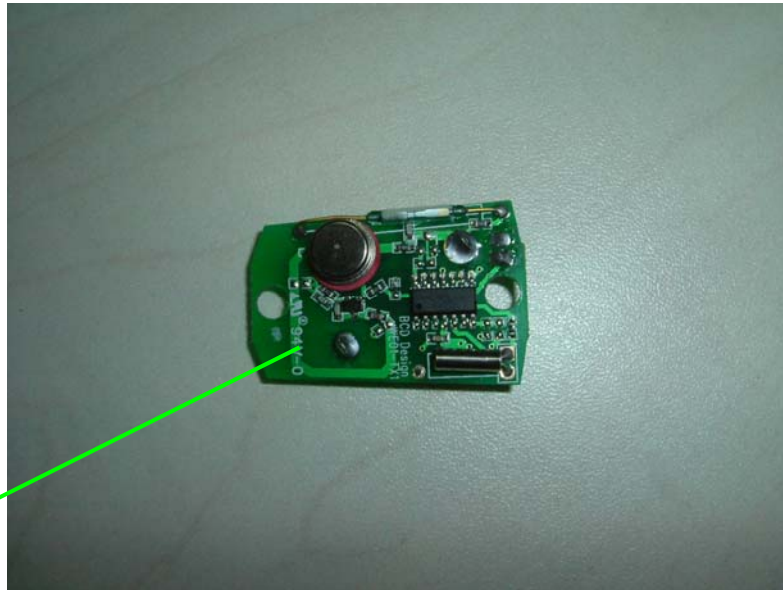
Configuration of Tested System



Attachment 1 – Antenna Requirement

CLIENT:	9 Months Up, 9 Months Down, LLC .	TEST STANDARD:	FCC Part 15.203 RSS-GEN § 7.14
MODEL TESTED:	WE-01	PRODUCT:	Strollometer
SERIAL NO.:	Engineering Sample	EUT DESIGNATION:	RF Equipment
TEMPERATURE:	21°C	HUMIDITY:	55%RH
ATM PRESSURE:	101.8 kPa	GROUNDING:	No Grounding
TESTED BY:	Shi Xiting	DATE OF TEST:	2007, Feb, 01
SETUP METHOD:	N/A		
ANTENNA REQUIREMENT:	An intentional radiator shall be designed to ensure that no antenna other than furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.		
TEST VOLTAGE:	DC 3V(CR2302 Batteries)		
TEST STATUS:	Normal Operation As Usual		
RESULTS:	The EUT meets the Antenna requirement. The test results relate only to the equipment under test provided by client.		
CHANGES OR MODIFICATIONS:	There were some modifications installed by EMC Compliance Management Group (China) test personnel. Please refer to the equipment modification of page 5.		
M. UNCERTAINTY:	N/A		

FCC Section	FCC Rules	Conclusion
15.203	<p>Described how the EUT complies with the requirement that either its antenna is permanently attached, or that it employs a unique antenna connector, for every antenna proposed for use with the EUT.</p> <p>The exception is in those cases where EUT must be professionally installed. In order to demonstrate that professional installation is required, the following 3 points must be addressed:</p> <ul style="list-style-type: none"> ● The application (or intended use) of the EUT ● The installation requirements of the EUT ● The method by which the EUT will be marketed 	<p>The RF Device uses an integrate antenna without connector ,please refer to the follow plots .</p>



Integrate
Antenna

Integrate Antenna without Connector View

Attachment 2 – Radiated Emission Measurement

CLIENT:	9 Months Up, 9 Months Down, LLC .	TEST STANDARD:	FCC Part 15.205 RSS-210issue6 §2.7
MODEL TESTED:	WE-01	PRODUCT:	Strollometer
SERIAL NO.:	Engineering Sample	EUT DESIGNATION:	RF Equipment
TEMPERATURE:	21°C	HUMIDITY:	55%RH
ATM PRESSURE:	101.8 kPa	GROUNDING:	No Grounding
TESTED BY:	Shi Xiting	DATE OF TEST:	2007, Feb, 01
TEST REFERENCE:	ANSI C63.4: 2003, CISPR 16-1: 2002		
TEST PROCEDURE:	<p>a. The EUT was placed on a rotatable table with 0.8 meters above ground.</p> <p>b. The EUT was set 3 meters from the interference-receiving antenna, which was mounted on the top of a variable height antenna tower.</p> <p>c. The antenna was varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna were set to make measurement.</p> <p>d. For each suspected emission the EUT was arranged to its worst case and then change the antenna tower height (from 1m to 4m) and turn table (from 0 degree to 360 degree) to find the maximum reading.</p> <p>e. If the emission level of the EUT in peak mode was 20 dB lower than the specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be tested using the quasi-peak method in about six maximal points and the results will be reported.</p> <p>f. Broadband antenna (Calibrated antenna) was used as receiving antenna below 1000MHz. Horn antenna were used as receiving antenna above 1000MHz.</p> <p>g. The bandwidth is 120 kHz below 1000 MHz, and 1 MHz above 1000 MHz</p> <p>Explanation of the Correction Factor are given as follows:</p> <p>FS= RA + AF + CF - AG Where: FS = Field Strength</p> <p>RA = Receiver Amplitude AF = Antenna Factor</p> <p>CF = Cable Attenuation Factor AG = Amplifier Gain</p>		
TESTED RANGE:	30MHz to 5000MHz		
TEST VOLTAGE:	DC 3V(CR2302 Batteries)		
RESULTS:	<p>The EUT meets the requirements of test reference for Radiated Emissions on Horizontal polarization by 11.1 dB at 496.94MHz. Vertical polarization by 14.4 dB at 644.42MHz.</p> <p>The test results relate only to the equipment under test provided by client.</p>		
CHANGES OR MODIFICATIONS:	There were some modifications installed by EMC Compliance Management Group (China) test personnel. Please refer to the equipment modification of page 5.		
M. UNCERTAINTY:	Freq. $\pm 2 \times 10^{-7}$ x Center Freq., Amp ± 2.6 dB		

Restricted bands of operation:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41			

¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

² Above 38.6

The fundamental is not in a restricted band, and the fundamental & spurious emission in the restricted bands comply with the general emission limits of 15.209.

Field strength limits of 15.209:

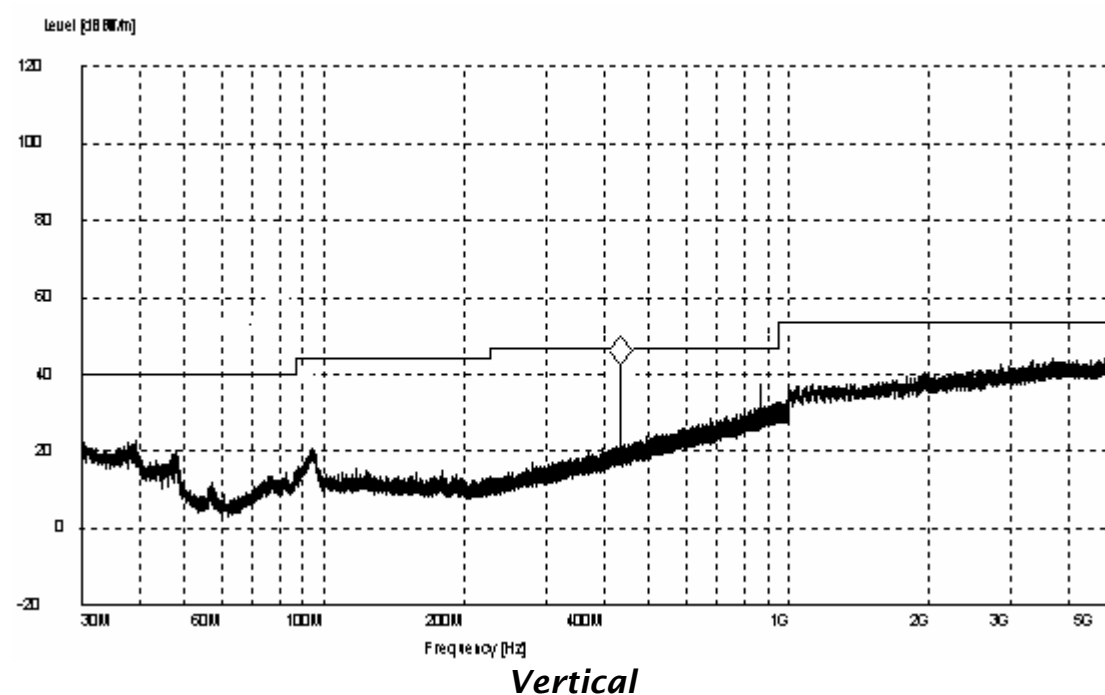
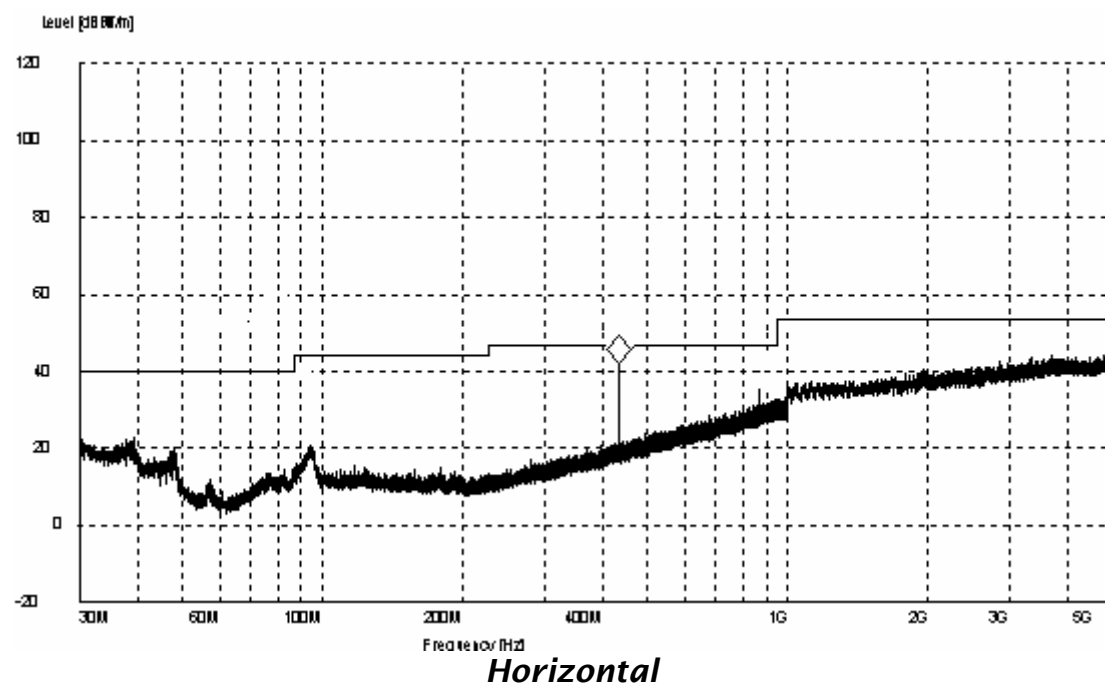
The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Other Frequency (MHz)	Field strength	
	(μ V/meter)	dB μ V/meter
30-88	100	40.0
88-216	150	43.5
216-960	200	46.0
Above 960	500	54.0

Note:

1. Field Strength (dBmV/m)=20log Field Strength (mV/m).
2. In the emission tables above, the tighter limit applies at the band edge

Test plots of radiated emission (30M-5000M) :



Test data :**Peak value of the measured emissions**

Polarization	Frequency (MHz)	Read Level dB(μV)	Factor (dB)	Field Strength dB(μV/m)	Limit dB(μV/m)	Over Limit dB(μV/m)
Horizontal	434.04	47.95	-5.73	42.22	46.0	-3.78
Horizontal	868.08	43.04	-7.40	35.64	46.0	-10.36
Horizontal	1302.12	38.28	-1.09	37.19	74.0	-36.81
Horizontal	1736.16	35.70	2.87	38.57	74.0	-35.43
Horizontal	2170.20	39.40	0.73	40.13	74.0	-33.87
Horizontal	2604.24	39.29	0.89	40.22	74.0	-33.78
Vertical	434.04	48.71	-5.73	42.98	46.0	-3.02
Vertical	868.08	41.76	-7.40	34.36	46.0	-11.64
Vertical	1302.12	37.60	-1.09	36.51	74.0	-37.49
Vertical	1736.16	35.89	2.87	38.76	74.0	-35.24
Vertical	2170.20	39.01	0.73	39.74	74.0	-34.26
Vertical	2604.24	39.12	0.89	40.01	74.0	-33.99

Average value of the measured emissions

Polarization	Frequency (MHz)	Read Level dB(μV)	Factor (dB)	Over Limit dB(μV/m)	Field Strength dB(μV/m)	Limit dB(μV/m)	Duty cycle Correction Factor (dB)
Horizontal	434.04	47.95	-5.73	-14.02	31.98	46.0	-10.24
Horizontal	868.08	43.04	-7.40	-20.60	25.40	46.0	-10.24
Horizontal	1302.12	38.28	-1.09	-27.05	26.95	54.0	-10.24
Horizontal	1736.16	35.70	2.87	-25.67	28.33	54.0	-10.24
Horizontal	2170.20	39.40	0.73	-24.11	29.89	54.0	-10.24
Horizontal	2604.24	39.29	0.89	-24.06	29.94	54.0	-10.24
Vertical	434.04	48.71	-5.73	-13.26	32.74	46.0	-10.24
Vertical	868.08	41.76	-7.40	-21.88	24.12	46.0	-10.24
Vertical	1302.12	37.60	-1.09	-27.73	26.27	54.0	-10.24
Vertical	1736.16	35.89	2.87	-25.48	28.52	54.0	-10.24
Vertical	2170.20	39.01	0.73	-24.50	29.50	54.0	-10.24
Vertical	2604.24	39.12	0.89	-24.23	29.77	54.0	-10.24

Note:

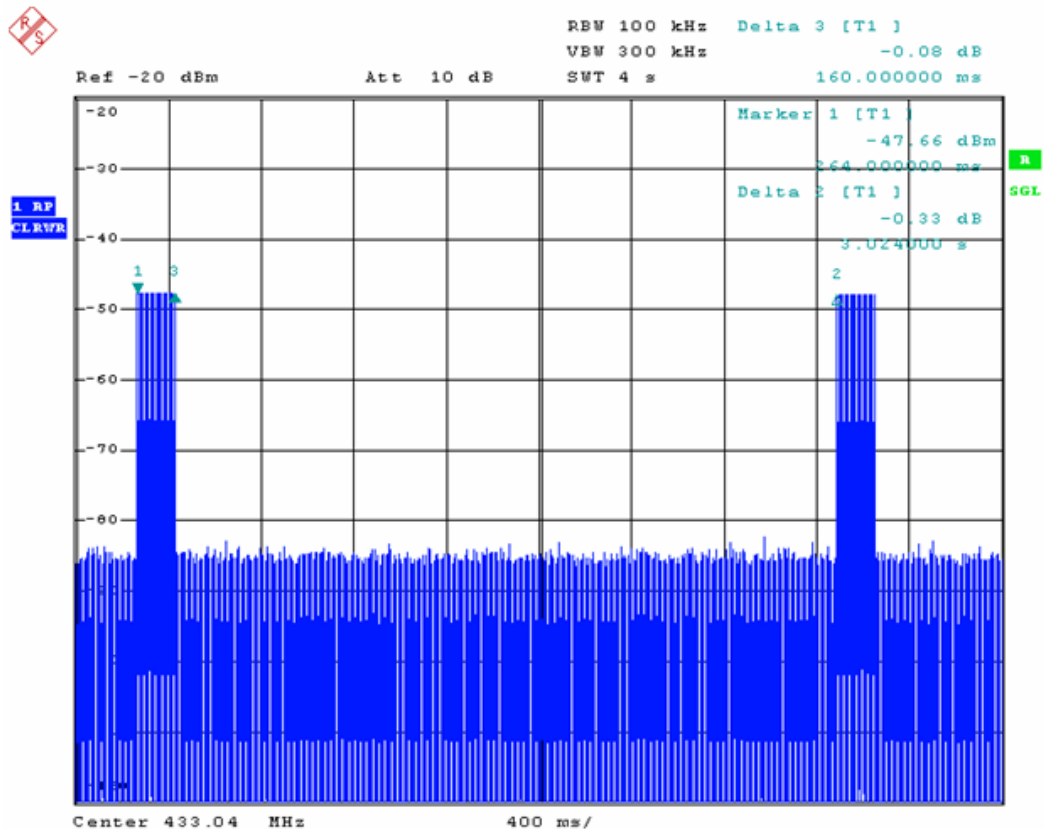
1. According to FCC 15.35(b), maximum permitted peak field strength is 20dB above the maximum permitted average emission limit.
2. $\text{Field Strength} = \text{Read Level} + \text{Factor} + \text{Duty Cycle Correction Factor}$
 $\text{Factor} = \text{Antenna Factor} + \text{Cable Loss} - \text{Preamplifier Factor}$
3. Duty Cycle Correction Factor is calculated by averaging the sum of the pulse train. Correction factor is measured as follows:

Keep the EUT in continuous transmission mode (modulated), and set the spectrum to the fundamental frequency and set the span width to 0 Hz. Then connect a storage oscilloscope to the video output of the spectrum that is used to detect the pulse train. Adjust the oscilloscope settings to observe the pulse train and determine the number and width of the pulses, as well as the period of the train.

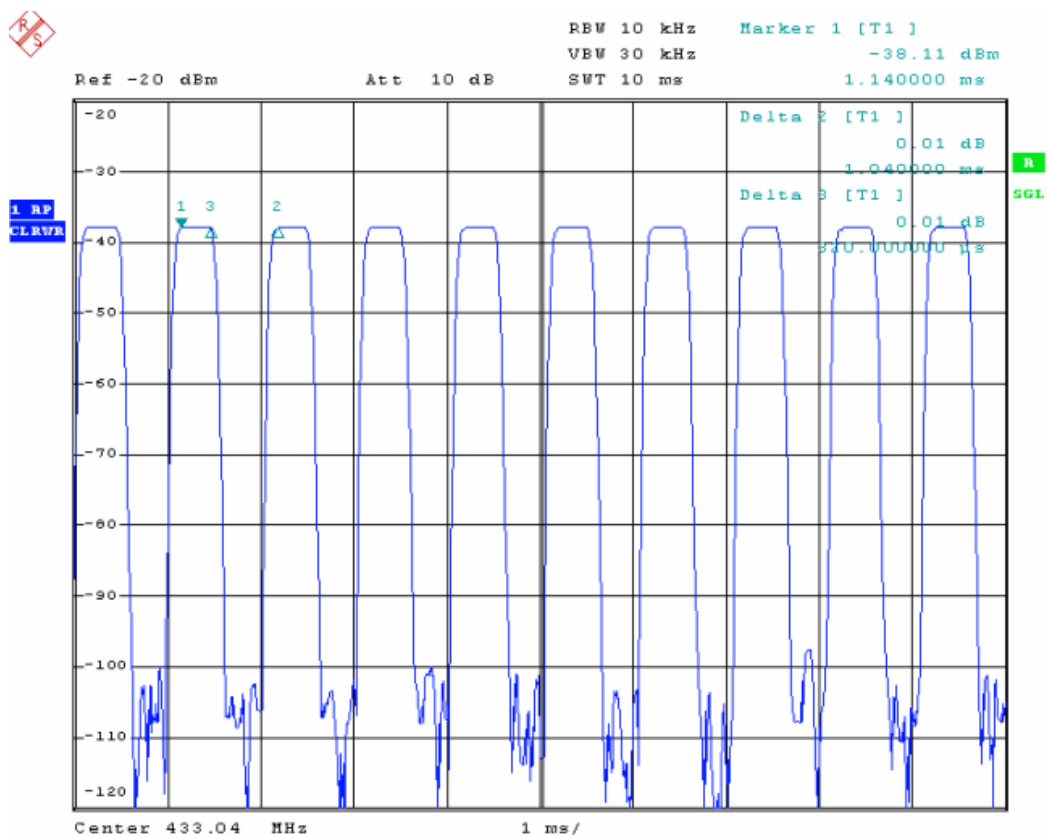
Duty Cycle Correction Factor in 0.16s at its maximum value

$$= |20 \log(0.32 \text{ms} * 160 / 1.04 \text{ms}) / 160 \text{ms}|$$
$$= |20 \log(0.32 / 1.04)| = -10.24 \text{ dB}$$

(please refer to the following test graph below)



Period



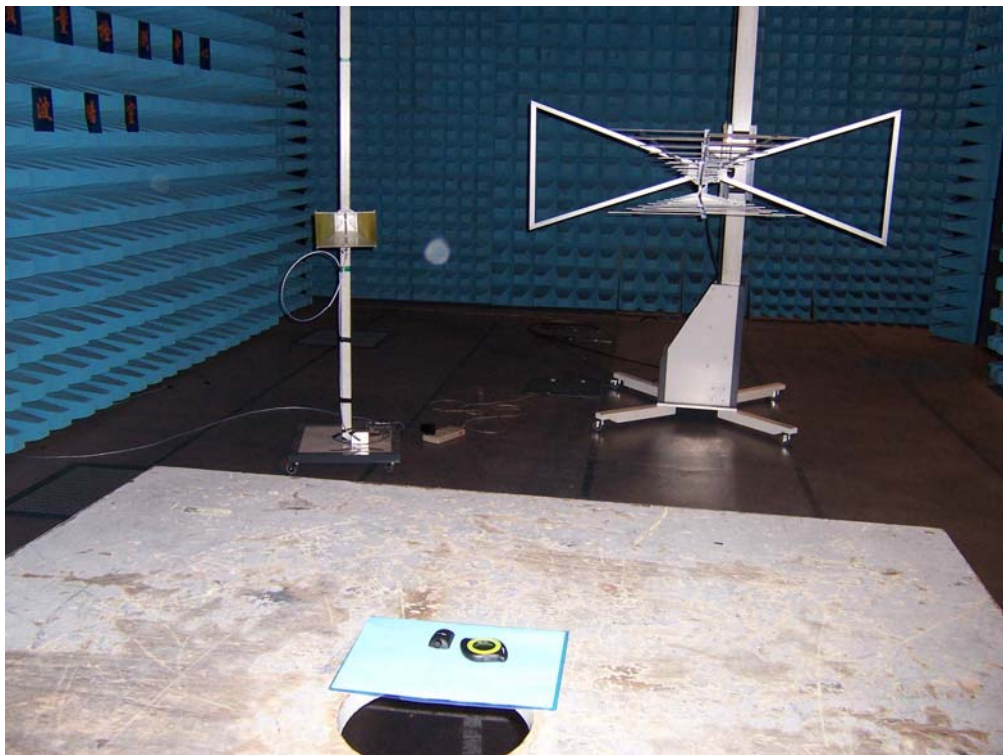
10 ms Detail

Test equipments list :

Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due Date
<i>EMI Test Receiver</i>	<i>Rohde&Schwarz</i>	<i>ESIB 26</i>	<i>A0304218</i>	<i>04/19/08</i>	<i>04/18/07</i>
<i>Bilog Antenna</i>	<i>Rohde&Schwarz</i>	<i>HL 562</i>	<i>A0304224</i>	<i>06/10/06</i>	<i>06/09/07</i>
<i>Horn Antenna</i>	<i>Rohde&Schwarz</i>	<i>HF 906</i>	<i>A0304225</i>	<i>06/05/06</i>	<i>06/04/07</i>
<i>Anechoic Chamber</i>	<i>Albatross</i>	<i>EMC 12.8*6.8*6.4</i>	<i>A0304210</i>	<i>04/19/05</i>	<i>04/18/07</i>
<i>Note: All testing were performed using internationally recognized standards. All test instruments were calibrated.</i>					

SIGNED BY: Shi-xiting
ENGINEER

REVIEWED BY: Hangzhan
QC

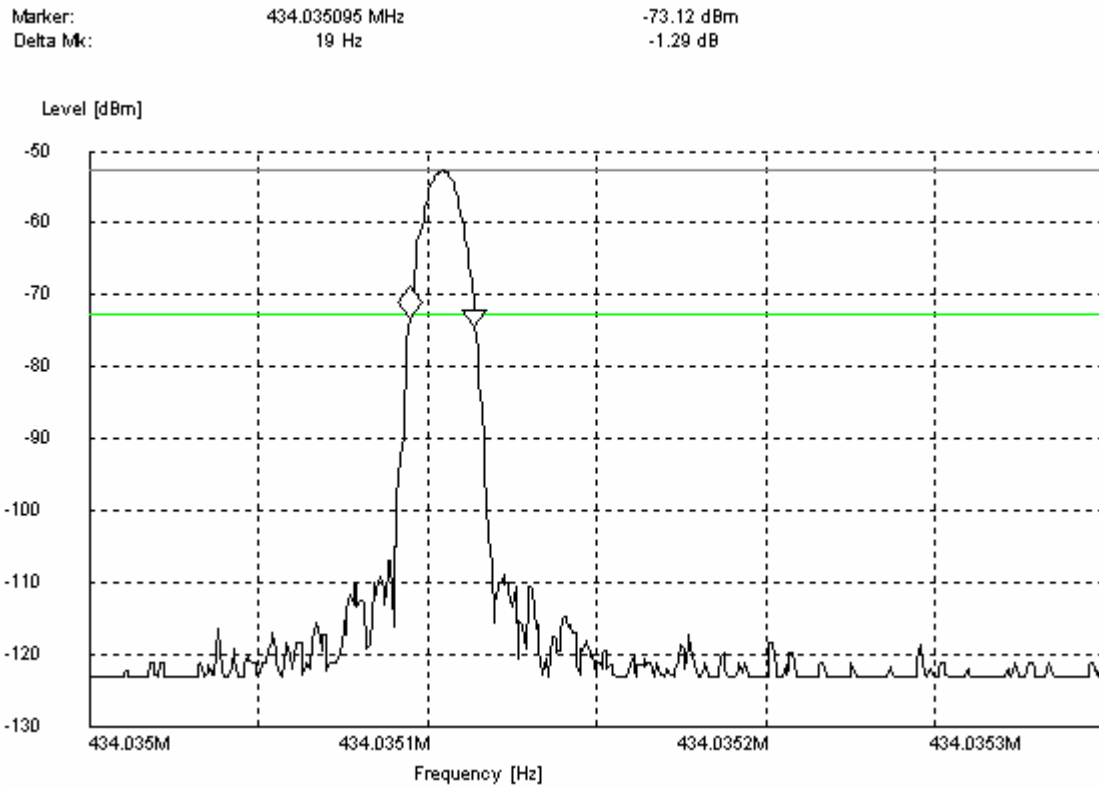


Radiated Emissions Test Set-up

Attachment 3 – Bandwidth Measurement

CLIENT:	9 Months Up, 9 Months Down, LLC	TEST STANDARD:	FCC Part 15.231 (c) RSS-Gen §4.4.1
MODEL TESTED:	WE-01	PRODUCT:	Strollometer
SERIAL NO.:	Engineering Sample	EUT DESIGNATION:	RF Equipment
TEMPERATURE:	21°C	HUMIDITY:	55%RH
ATM PRESSURE:	101.8 kPa	GROUNDING:	No Grounding
TESTED BY:	Shi Xiting	DATE OF TEST:	2006, September, 01
SETUP METHOD:	ANSI C63.4 - 2003		
BANDWIDTH REQUIREMENT:	The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, The emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.		
TEST PROCEDURE:	<p>According to RSS-Gen §4.4.1, the transmitter shall be operated at its maximum carrier power measured under normal test conditions. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts. The resolution bandwidth shall be set to as close to 1% of the selected span as is possible without being below 1%. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used since a peak or, peak hold, may produce a wider bandwidth than actual.</p> <p>The trace data points are recovered and are directly summed in linear terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached and that frequency recorded. The process is repeated for the highest frequency data points. This frequency is recorded.</p> <p>The span between the two recorded frequencies is the occupied bandwidth.</p>		
TEST VOLTAGE:	DC 3V(CR2302 Batteries)		
TEST STATUS:	Keep Tx in continuous transmission mode, modulated		
RESULTS:	The EUT meets the bandwidth requirement. The test results relate only to the equipment under test provided by client.		
CHANGES OR MODIFICATIONS:	There were some modifications installed by EMC Compliance Management Group (China) test personnel. Please refer to the equipment modification of page 5.		
UNCERTAINTY:	Freq. $\pm 2 \times 10^{-7}$ x Center Freq., Amp ± 2.6 dB		

Test Data (Fundamental Frequency) :



Test Data :

Frequency (MHz)			Bandwidth Limit (MHz) ($F_{center} \times 0.25\%$)	Test Result (MHz) ($F_{end}-F_{start}$)	Conclusion
Start	Center	End			
433.035086	433.035095	433.035105	1.082587	0.000019	Compliance

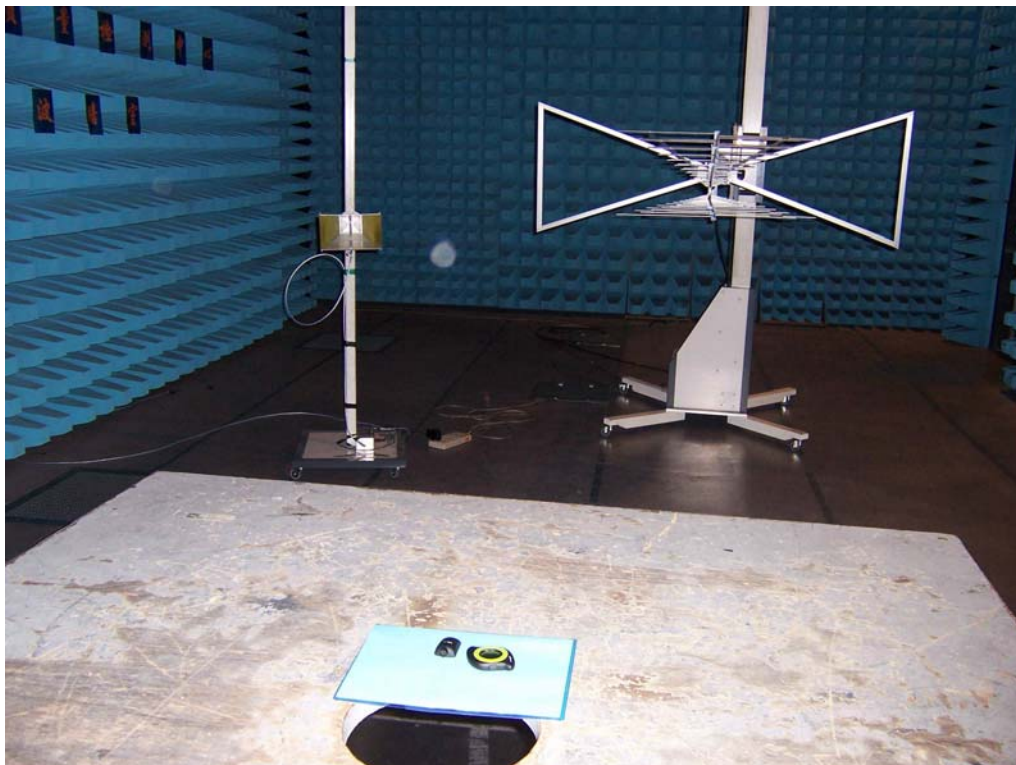
Test Equipment List :

Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due Date
EMI Test Receiver	Rohde&Schwarz	ESIB 26	A0304218	04/19/08	04/18/07
Bilog Antenna	Rohde&Schwarz	HL 562	A0304224	06/10/06	06/09/07
Anechoic Chamber	Albatross	EMC 12.8*6.8*6.4	A0304210	04/19/05	04/18/07

Note: All testing were performed using internationally recognized standards. All test instruments were calibrated.

SIGNED BY: Shi-xiting
ENGINEER

REVIEWED BY: Hangzhou
QC



Bandwidth Test Set-up