



FCC TEST REPORT

REPORT NO.: 070717FIA01

MODEL NO.: BMSVC, BMA44, BMMIG, BMAMP, BMXTC,
BMFRG, BMVIP, BMVPR, BMARC, BMJET,
BMUFO, BMWIFX, BM1-10

RECEIVED: Jul. 31, 2007

TESTED: Aug. 20 ~ Sept. 5, 2007

ISSUED: Sept. 5, 2007

APPLICANT: Lumisource, Inc.

ADDRESS: 2950 OLD HIGGINS ROAD, ELK GROVE VILLAGE
60007, U.S.A

ISSUED BY: ADT (Shanghai) Corporation

ADDRESS: 2F, Building C, No.1618, Yishan Rd., 201103,
Shanghai, China

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ADT (Shanghai) Corporation.



V1.0

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1 CERTIFICATION

PRODUCT: BOOMCHAIR WIRELESS TRANSMITTER
MODEL NO.: BMSVC, BMA44, BMMIG, BMAMP, BMXTC, BMFRG,
BMVIP, BMVPR, BMARC, BMJET, BMUFO, BMWIFX,
BM1-10
APPLICANT: Lumisource, Inc.
TESTED: Aug. 20 ~ Sept. 5, 2007
TEST ITEM: ENGINEERING SAMPLE
STANDARDS: 47 CFR Part 15, Subpart C (Section 15.249),
ANSI C63.4-2003

The above equipment has been tested by **ADT (Shanghai) Corporation**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**TECHNICAL
ACCEPTANCE :**

A handwritten signature in black ink, appearing to read 'Vivian Hsu', written over a horizontal line.

(Vivian Hsu)
Engineering Supervisor

DATE: Sept. 5, 2007

APPROVED BY :

A handwritten signature in black ink, appearing to read 'Wallace Pan', written over a horizontal line.

(Wallace Pan)
Director of Operations

DATE: Sept. 5, 2007

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: 47 CFR Part 15, Subpart C			
Standard Paragraph	Test Type	Result	Remark
15.207	Conducted Emission Test (Mode A1)	PASS	Minimum passing margin is -1.88dB at 0.310 MHz
15.249	Radiated Emission Test (Mode A2, Below 1GHz)	PASS	Minimum passing margin is -7.14dB at 456.800 MHz
	Radiated Emission Test (Mode A2, Above 1GHz)	PASS	Minimum passing margin is -0.94 at 1829.18MHz(AV)
15.249	Band Edge Measurement	PASS	Meet the requirement of limit

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz ~ 30MHz	3.04 dB
Radiated emissions	30MHz ~ 200MHz (Horizontal)	4.42 dB
	30MHz ~ 200MHz (Vertical)	4.62 dB
	200MHz ~ 1000MHz (Horizontal)	4.06 dB
	200MHz ~ 1000MHz (Vertical)	4.16 dB

Note: The measurement uncertainty is factored into the compliance determination. The additional information is listed on APPENDIX B of this report.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	BOOMCHAIR WIRELESS TRANSMITTER
MODEL NO.	BMSVC, BMA44, BMMIG, BMAMP, BMXTC, BMFRG, BMVIP, BMVPR, BMARC, BMJET, BMUFO, BMWIFX, BM1-10
POWER SUPPLY	For mode A1: Powered by adapter For mode A2: Powered by battery(3*AAA)
MODULATION TYPE	QPSK
FREQUENCY RANGE OF OPERATION	914~915 MHz
CHANNEL SEPARATION	0.5MHz
NUMBER OF CHANNEL	3
ANTENNA TYPE	Soldered on PCB
DATA CABLE SUPPLIED	N/A
I/O PORTS	Audio port

- NOTE:** 1. There are fourteen model numbers of the EUT, the basic model number is BMSVC, the alternate model BMA44, BMMIG, BMAMP, BMXTC, BMFRG, BMVIP, BMVPR, BMARC, BMJET, BMUFO, BMWIFX, BM1-10 are electrically and mechanically 100% identical to the basic model, except for the model designation. So we chosen model BMSVC to have test and the test results are applicable to all of the model numbers list in the above table.
2. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

3 channels are provided to this EUT:

Channel	Frequency
1	914MHz
2	914.5MHz
3	915MHz

Test Mode Applicability AND TESTED CHANNEL DETAIL:

EUT configure mode	Applicable to					Description
	PLC	RE<1G	RE≥1G	APM	BE	
A1	√	√	√	-	√	Powered by adapter
A2	-	√	√	-	√	Powered by battery
Remark: For the Radiated Emission and Band Edge test, because of it is the worst case in the testing of mode A2 in the pretest, so we just show the test data of mode A2 in this report.						

Where PLC: Power Line Conducted Emission RE<1G RE: Radiated Emission below 1GHz
 RE≥1G: Radiated Emission above 1GHz APM: Antenna Port Measurement
 BE: Band Edge Measurement

Power Line Conducted Emission Test

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, and X.Y.Z. axis.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

Test Mode	Available Channel	Tested Channel	Modulation Type	Axis
A1	1 ~ 3	1 & 3	QPSK	Z

Radiated Emission Test (Below 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, and X.Y.Z. axis.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

Test Mode	Available Channel	Tested Channel	Modulation Type	Axis
A2	1 ~ 3	1 & 3	QPSK	Z

Radiated Emission Test (Above 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, and X.Y.Z. axis.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

Test Mode	Available Channel	Tested Channel	Modulation Type	Axis
A2	1 ~ 3	1 & 3	QPSK	Z

Band Edge Measurement

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, and X.Y.Z. axis.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

Test Mode	Available Channel	Tested Channel	Modulation Type	Axis
A2	1 ~ 3	1 & 3	QPSK	Z



3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a BOOMCHAIR WIRELESS TRANSMITTER. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

47 CFR Part 15, Subpart C (Section 15.249)
ANSI C63.4: 2003

All test items have been performed and recorded as per the above standards.

3.4 DESCRIPTION OF SUPPORT UNITS

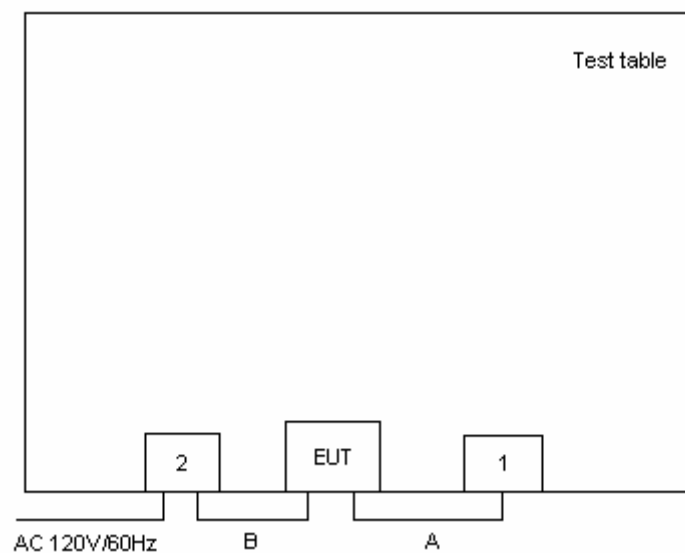
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Ipod MP3	Apple	A1137	5U621XFCUPR	FCC DoC Approved
2	adapter	TDC power	DA-12-12	3G58	N/A

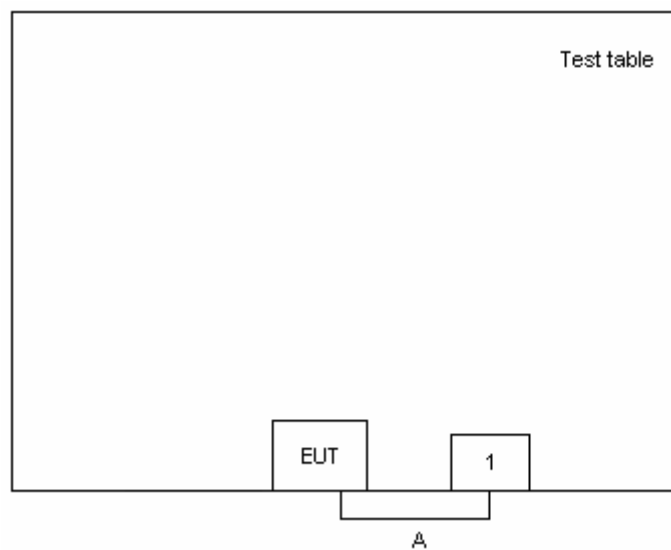
NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
A	1.8m shielded audio line w/o core.
B	1.8m unshielded power output cable w/o core.

TEST SETUP CHART

Test mode A1



Test mode A2



4 EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

Frequency (MHz)	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

NOTES: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	E1R1002	Sept. 25, 2007
LISN ROHDE & SCHWARZ	NSLK8127	E1L1001	Jan. 31, 2008
Software ADT	ADT_Cond_V7.3.0	N/A	N/A

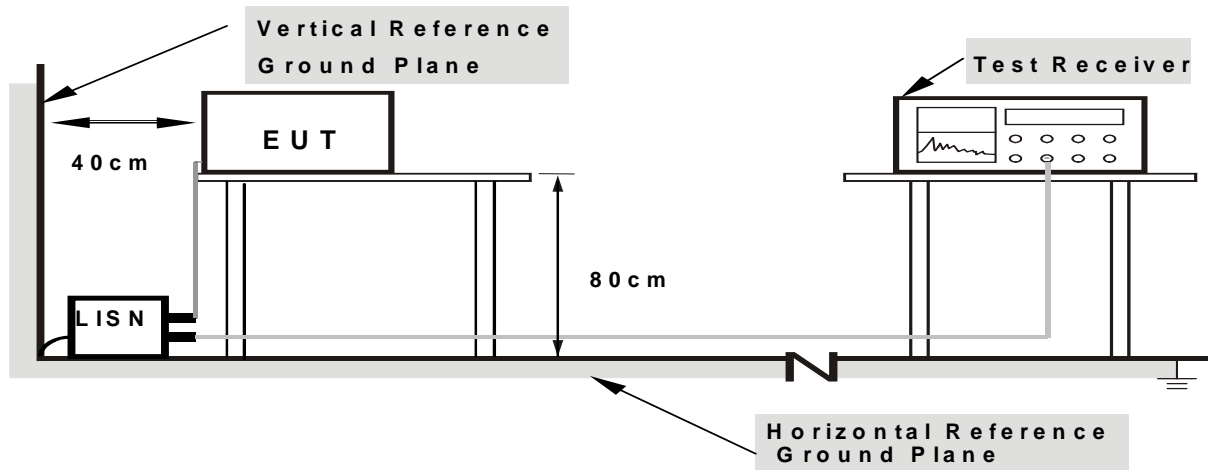
4.1.3 TEST PROCEDURE

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit - 20dB) were not reported.

4.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.1.5 EUT OPERATING CONDITIONS

Set the EUT under transmission condition continuously at specific channel frequency.

4.1.6 TEST RESULTS

EUT	BOOMCHAIR WIRELESS TRANSMITTER	MODEL NO.	BMSVC
TEST MODE	Mode A1	6dB BANDWIDTH	9kHz
INPUT POWER	12Vdc	PHASE	Line (L1)
ENVIRONMENTAL CONDITIONS	20deg. C, 50% RH, 1012hPa	TESTED BY: REBECCA	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.288	0.73	44.44	33.96	45.17	34.69	60.59	50.59	-15.42	-15.90
2	0.310	0.70	51.04	47.39	51.74	48.09	59.96	49.96	-8.23	-1.88
3	0.340	0.65	41.09	31.12	41.74	31.77	59.19	49.19	-17.45	-17.42
4	0.634	0.44	38.18	32.14	38.62	32.58	56.00	46.00	-17.38	-13.42
5	0.944	0.45	38.22	31.66	38.67	32.11	56.00	46.00	-17.33	-13.89
6	9.707	0.59	37.24	32.63	37.83	33.22	60.00	50.00	-22.17	-16.78

REMARKS: 1. Margin value = Emission level - Limit value
 2. Correction factor = Insertion loss + Cable loss
 3. Emission Level = Correction Factor + Reading Value.

EUT	BOOMCHAIR WIRELESS TRANSMITTER	MODEL NO.	BMSVC
TEST MODE	Mode A1	6dB BANDWIDTH	9kHz
INPUT POWER	12Vdc	PHASE	NEUTRAL (N)
ENVIRONMENTAL CONDITIONS	20deg. C, 50% RH, 1012hPa	TESTED BY: REBECCA	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.287	0.74	43.49	31.81	44.23	32.55	60.60	50.60	-16.38	-18.06
2	0.319	0.69	50.93	43.77	51.62	44.46	59.72	49.72	-8.10	-5.26
3	0.341	0.67	40.45	29.48	41.12	30.15	59.18	49.18	-18.06	-19.03
4	0.629	0.50	37.91	29.76	38.41	30.26	56.00	46.00	-17.59	-15.74
5	0.954	0.55	35.97	26.18	36.52	26.73	56.00	46.00	-19.48	-19.27
6	9.993	0.55	38.50	34.09	39.05	34.64	60.00	50.00	-20.95	-15.36

REMARKS: 1. Margin value = Emission level - Limit value
2. Correction factor = Insertion loss + Cable loss
3. Emission Level = Correction Factor + Reading Value.

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

According to 15.249 the field strength of emissions from intentional radiators operated under these frequencies bands shall not exceed the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (dBuV/m)	
	Peak	Average
2400 ~ 2483.5	113.98	93.98

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	E1R1001	Apr. 19, 2008
BILOG Antenna SCHWARZBECK	VULB9168	E1A1001	Sept. 26, 2007
Preamplifier Agilent	8447D	E1A2001	Jan. 27, 2008
Preamplifier Agilent	8449B	E1A2002	Jan. 27, 2008
Double Ridged Broadband Horn Antenna Schwarzbeck	BBHA 9120D	E1A1002	Feb. 15, 2008
Spectrum Analyzer Agilent	E4403B	E1S1001	Jan. 13, 2008
Spectrum Analyzer ROHDE & SCHWARZ	FSP	E1S1002	May. 15, 2008
RF signal cable Woken	RG-402	E1CBH01	May. 30, 2008
RF signal cable Woken	RG-402	E1CBH02	May. 30, 2008
RF signal cable Woken	RG-402	E1CBH03	May. 30, 2008
RF signal cable Woken	RG-412	E1CBL02	May. 30, 2008
RF signal cable Woken	RG-412	E1CBL03	May. 30, 2008
RF signal cable Woken	RG-412	E1CBL04	May. 30, 2008
Software ADT	ADT_Radiated_V7.5	N/A	N/A

- NOTE:**
1. The calibration interval of the above test instruments is 12 months.
 2. The horn antenna and Agilent preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 3. The Spectrum Analyzer (model: FSP) and RF signal cable (SERIAL: E1CBH05&E1CBH07) are used only for the measurement of emission frequency above 1GHz if tested.

4.2.3 TEST PROCEDURE

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.

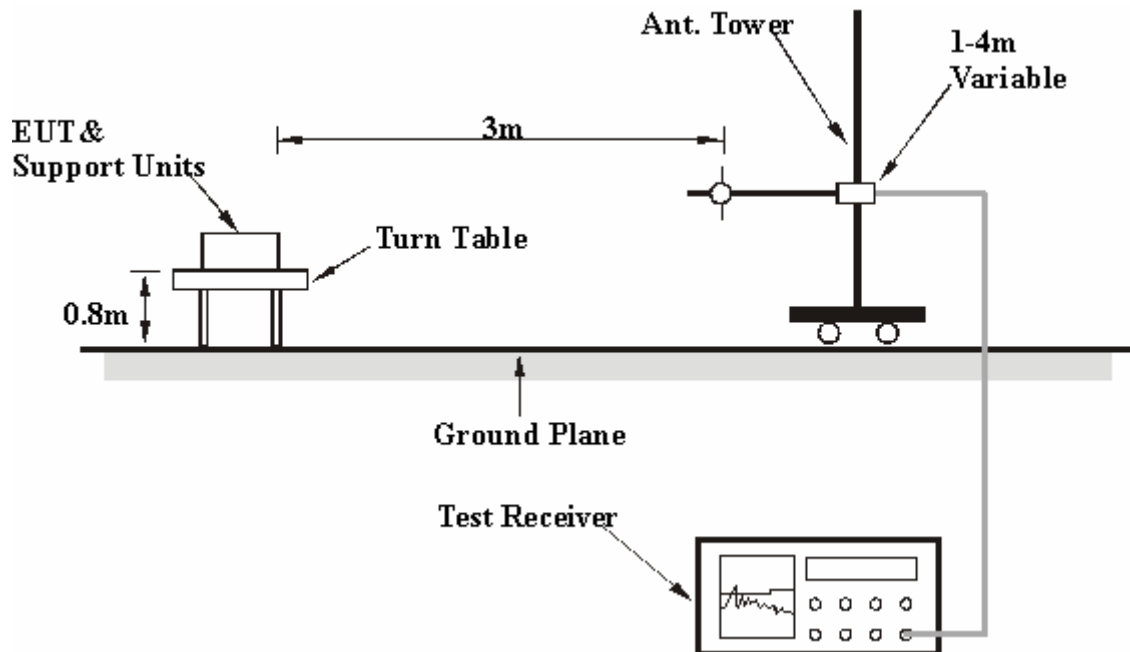
NOTE:

1. The resolution bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection (PK) at frequency above 1GHz.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

4.2.6 EUT OPERATING CONDITIONS

Set the EUT under transmission condition continuously at specific channel frequency.

4.2.7 TEST RESULTS

Below 1GHz Worst-Case Data

Mode A1

EUT	BOOMCHAIR WIRELESS TRANSMITTER	MODEL NO.	BMSVC
CHANNEL	Channel 1	FREQUENCY RANGE	30 ~ 1000 MHz
MODULATION TYPE	QPSK	INPUT POWER (SYSTEM)	4.5Vdc
ENVIRONMENTAL CONDITIONS	20 deg. C, 65% RH, 1000 hPa	DETECTOR FUNCTION	Quasi-Peak
TESTED BY	REBECCA		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1	42.120	15.75	3.72	19.47	40	-20.53	206.00	19.00
2	151.250	16.98	4.40	21.38	43.5	-22.12	206.00	19.00
3	456.800	20.23	18.64	38.86	46	-7.14	206.00	291.00
4	585.330	22.83	5.78	28.61	46	-17.39	206.00	342.00
5	696.870	24.53	5.03	29.56	46	-16.44	206.00	9.00
6	915.120	27.50	36.84	64.34	46	18.34	--	--

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1	66.370	13.63	17.53	31.17	40	-8.83	100.00	19.00
2	148.820	16.88	7.66	24.54	43.5	-18.96	100.00	19.00
3	456.800	20.23	14.32	34.55	46	-11.45	100.00	19.00
4	609.580	23.31	6.15	29.46	46	-16.54	100.00	19.00
5	801.150	25.84	5.51	31.35	46	-14.65	100.00	19.00
6	915.120	27.50	32.23	59.74	46	13.74	--	--

- NOTE:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB)
 2. Correction Factor (dB) = Antenna Factor (dB) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.

Above 1GHz Worst-Case Data**Mode A1**

EUT	BOOMCHAIR WIRELESS TRANSMITTER	MODEL NO.	BMSVC
CHANNEL	Channel 1	FREQUENCY RANGE	Above 1GHz
MODULATION TYPE	QPSK	INPUT POWER (SYSTEM)	4.5Vdc
ENVIRONMENTAL CONDITIONS	20 deg. C, 65% RH, 1000 hPa	DETECTOR FUNCTION	PK / AV: 1MHz
TESTED BY	REBECCA		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1	914.04PK	27.48	59.37	86.85	114	-27.15	100	19
1	914AV	27.48	57.76	85.24	94	-8.76	100	19
2	1371.12PK	29.86	40.28	70.14	74	-3.86	100	0
2	1371.76AV	29.86	15.79	45.64	54	-8.36	100	0
3	1828.08PK	29.74	35.48	65.22	74	-8.78	100	25
3	1828.00AV	29.62	12.97	42.59	54	-11.41	100	25
4	2745PK	32.85	17.52	50.37	74	-23.63	100	60
4	2745AV	32.85	4.56	37.41	54	-16.59	100	60
5	3660PK	34.13	15.28	49.41	74	-24.59	100	100
5	3660AV	34.13	3.8	37.93	54	-16.07	100	100
6	4575PK	37.77	12.04	49.81	74	-24.19	100	109
6	4575AV	37.77	-0.01	37.76	54	-16.24	100	109
7	5490PK	38.98	12.17	51.15	74	-22.85	100	201
7	5490AV	38.98	-0.48	38.51	54	-15.49	100	201
8	6405PK	41.7	10.96	52.67	74	-21.33	100	230
8	6405AV	41.7	-0.21	41.49	54	-12.51	100	230
9	7320PK	44.65	12.47	57.12	74	-16.88	100	280
9	7320AV	44.65	-0.44	44.21	54	-9.79	100	280
10	8235PK	45.19	11.39	56.58	74	-17.42	100	309
10	8235AV	45.19	-0.18	45.02	54	-8.98	100	309
11	9150PK	46.72	9.31	56.03	74	-17.97	100	355
11	9150AV	46.72	-2.57	44.15	54	-9.85	100	355

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1	914.1PK	27.48	61.04	88.52	114	-25.48	100	29
1	913.97AV	27.48	60.17	87.65	94	-6.35	100	29
2	1368.96PK	29.86	37.43	67.29	74	-6.71	100	10
2	1368.00AV	29.86	14.93	44.79	54	-9.21	100	10
3	1812PK	29.68	26.56	56.23	74	-17.77	100	25
3	1812.08AV	29.62	8.85	38.46	54	-15.54	100	25
4	2745PK	32.85	21.9	54.75	74	-19.25	100	70
4	2745AV	32.85	5.84	38.69	54	-15.31	100	70
5	3660PK	34.13	15.35	49.48	74	-24.52	100	100
5	3660AV	34.13	3.97	38.1	54	-15.9	100	100
6	4575PK	37.77	11.33	49.1	74	-24.9	100	209
6	4575AV	37.77	0.21	37.98	54	-16.02	100	209
7	5490PK	38.98	12.8	51.78	74	-22.22	100	101
7	5490AV	38.98	-0.31	38.68	54	-15.32	100	101
8	6405PK	41.7	10.6	52.3	74	-21.7	100	230
8	6405AV	41.7	-0.12	41.59	54	-12.41	100	230
9	7320PK	44.65	11.01	55.67	74	-18.33	100	180
9	7320AV	44.65	-0.47	44.18	54	-9.82	100	180
10	8235PK	45.19	11.2	56.4	74	-17.6	100	109
10	8235AV	45.19	-0.08	45.12	54	-8.88	100	109
11	9150PK	46.72	8.71	55.43	74	-18.57	100	325
11	9150AV	46.72	-2.52	44.2	54	-9.8	100	325

- NOTE:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB)
 2. Correction Factor (dB) = Antenna Factor (dB) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “*” = Fundamental frequency
 6. The other emission levels were very low against the limit.



EUT	BOOMCHAIR WIRELESS TRANSMITTER	MODEL NO.	BMSVC
CHANNEL	Channel 3	FREQUENCY RANGE	Above 1GHz
MODULATION TYPE	QPSK	INPUT POWER (SYSTEM)	4.5Vdc
ENVIRONMENTAL CONDITIONS	20 deg. C, 65% RH, 1000 hPa	DETECTOR FUNCTION	PK / AV: 1MHz
TESTED BY	REBECCA		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1	915.04PK	27.5	36.84	64.34	114	-49.66	100	19
1	915AV	27.5	34.32	61.82	94	-32.18	100	19
2	1829.18PK	29.74	23.62	53.36	74	-20.64	100	0
2	1829.18AV	29.74	23.32	53.06	54	-0.94	100	0
3	2743.37PK	32.84	23.33	56.17	74	-17.83	100	25
3	2743.37AV	32.84	19.41	52.25	54	-1.75	100	25
4	3658PK	34.12	18.6	52.72	74	-21.28	100	60
4	3658AV	34.12	17.32	51.44	54	-2.56	100	60
5	4572PK	37.76	7.65	45.41	74	-28.59	100	100
5	4572AV	37.76	4.24	42	54	-12	100	100
6	5490PK	38.98	12.13	51.78	74	-22.22	100	109
6	5490AV	38.98	-0.45	38.68	54	-15.32	100	109
7	6405PK	41.7	10.86	52.3	74	-21.7	100	201
7	6405AV	41.7	-0.12	41.59	54	-12.41	100	201
8	7320PK	44.65	11.75	55.67	74	-18.33	100	230
8	7320AV	44.65	-0.47	44.18	54	-9.82	100	230
9	8235PK	45.19	10.89	56.4	74	-17.6	100	280
9	8235AV	45.19	-0.08	45.12	54	-8.88	100	280
10	9150PK	46.72	6.75	55.43	74	-18.57	100	309
10	9150AV	46.72	-2.52	44.2	54	-9.8	100	309



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1	915.04PK	27.5	32.23	59.74	114	-54.26	100	29
1	915AV	27.5	31.3	58.8	94	-35.2	100	29
2	1829.18PK	29.74	23.48	53.22	74	-20.78	100	10
2	1829.18AV	29.74	21.41	51.15	54	-2.85	100	10
3	2743.37PK	32.84	23.28	56.12	74	-17.88	100	25
3	2743.37AV	32.84	18.52	51.36	54	-2.64	100	25
4	3658PK	34.12	17.18	51.3	74	-22.7	100	70
4	3658AV	34.12	8.18	42.3	54	-11.7	100	70
5	4572PK	37.76	14.94	52.7	74	-21.3	100	100
5	4572AV	37.76	3.6	41.36	54	-12.64	100	100
6	5490PK	38.98	13.15	52.13	74	-21.87	100	209
6	5490AV	38.98	-0.25	38.73	54	-15.27	100	209
7	6405PK	41.7	10.13	51.83	74	-22.17	100	101
7	6405AV	41.7	-2.34	39.36	54	-14.64	100	101
8	7320PK	44.65	13.45	58.1	74	-15.9	100	230
8	7320AV	44.65	-1.23	43.42	54	-10.58	100	230
9	8235PK	45.19	9.87	55.06	74	-18.94	100	180
9	8235AV	45.19	-1.32	43.87	54	-10.13	100	180
10	9150PK	46.72	9.31	56.03	74	-17.97	100	109
10	9150AV	46.72	-1.57	45.15	54	-8.85	100	109

- NOTE:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB)
 2. Correction Factor (dB) = Antenna Factor (dB) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “*” = Fundamental frequency
 6. The other emission levels were very low against the limit.

4.3 BAND EDGES MEASUREMENT

4.3.1 LIMITS OF BAND EDGES MEASUREMENT

Below -50dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SIGNAL ANALYZER Rohde & Schwarz	FSP	E1S1002	May. 16. 2008

4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 100 kHz with suitable frequency span. The band edges was measured and recorded.

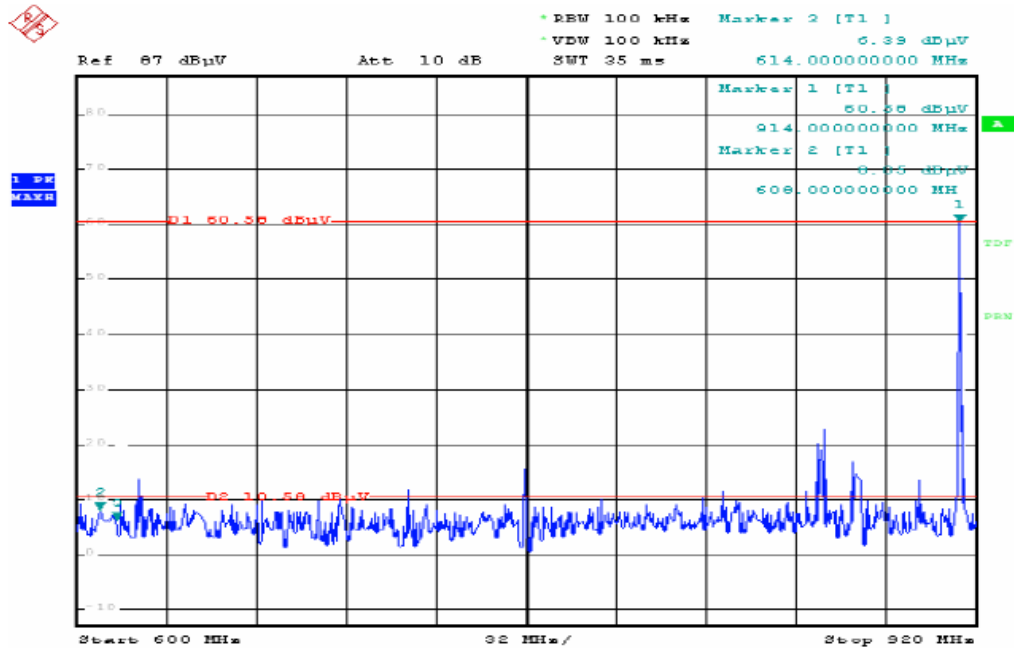
4.3.4 DEVIATION FROM TEST STANDARD

No deviation.

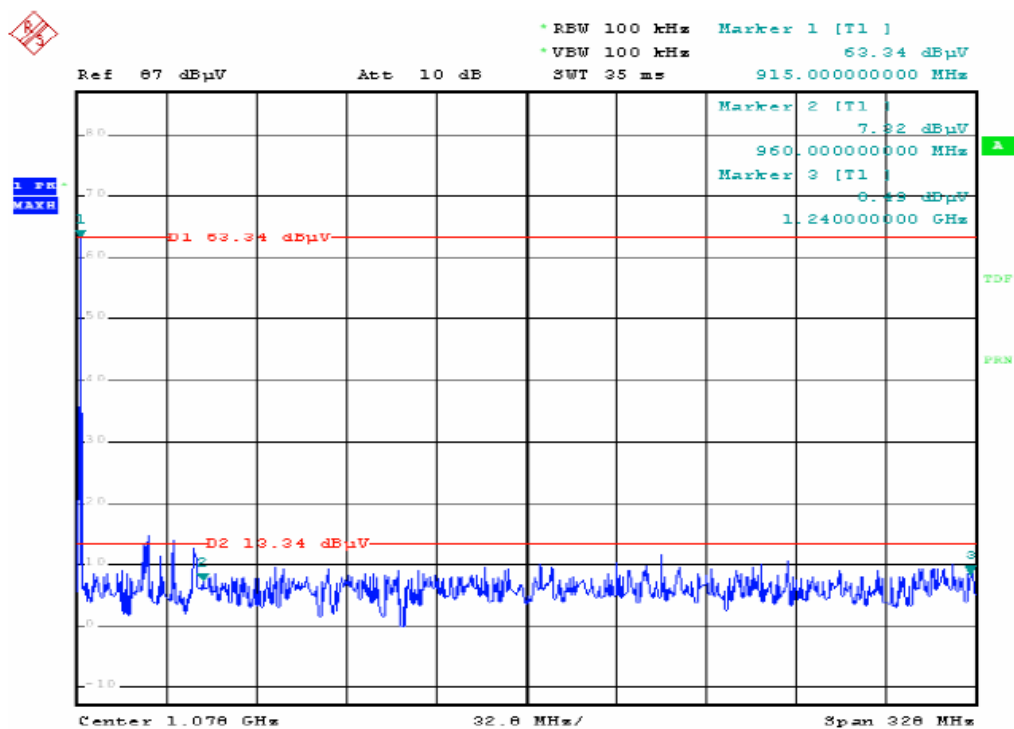
4.3.5 EUT OPERATING CONDITION

Enable the EUT to transmit data at lowest and highest channel frequencies individually.

4.3.6 TEST RESULTS



Date: 15. SEP. 2007 01:15:52



5 APPENDIX A - INFORMATION ON THE TESTING LABORATORY

We, ADT (Shanghai) Corp., was founded in 2003 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratory is accredited and approved by the following approval agencies according to ISO / IEC 17025 (2005).

The client should not use it to claim product endorsement by CNAS, A2LA, or any government agency.

Japan	VCCI
USA	FCC, A2LA
Norway	DNV
China	CNAS



Copies of accreditation certificates of our laboratory obtained from approval agencies can be downloaded from our web site: www.cnadt.com

If you have any comments, please feel free to contact us at the following:

ADT (Shanghai) Corporation

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Email: service@adt-sh.com

Web Site: www.cnadt.com

6 APPENDIX B – UNCERTAINTY IN EMC MEASUREMENT

As specified in CISPR 16-4-2, measurement instrumentation uncertainty shall be taken into account when determining compliance or non-compliance with a disturbance limit. A disturbance limit shall be determined in the following manner:

If U_{lab} is less than or equal to U_{cispr} in table 1, then:

- ※ Compliance is deemed to occur if no measured disturbance exceeds the disturbance limit;
- ※ Non-compliance is deemed to occur if any measured disturbance exceeds the disturbance limit.

If U_{lab} is greater than or equal to U_{cispr} in table 1, then:

- ※ Compliance is deemed to occur if no measured disturbance, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit;
- ※ Non-compliance is deemed to occur if any measured disturbance, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit.

Table 1 – Values of U_{cispr}

Measurement		U_{cispr}
Conducted disturbance (mains port)	(9kHz – 150kHz) (150kHz – 30MHz)	4,0 dB 3,6 dB
Disturbance power	(30MHz – 300MHz)	4,5 dB
Radiated disturbance (electric field strength on an open area test site or alternative test site)	(30MHz – 1000MHz)	5,2 dB
Other		Under consideration

ADT Shanghai hereby declare the U_{lab} value are as the following:

Conducted test performed at SR1 shielded room with U_{lab} values: +/- 3.04 dB

Radiated test performed at SAC Chamber with U_{lab} values: +/- 4.62 dB

Based on the above specification, the U_{lab} values of our sites are less than U_{cispr} in table 1 and compliance is deemed to occur if no measured disturbance exceeds the disturbance limit.