



FCC 47 CFR PART 15 SUBPART C

TEST REPORT

For

Applicant: Master Branks HK Limited

**Address: Dong Er Road ,Western District of science and Technology
Park,Daya Bay Economy and Technology Development District,
Huizhou City, Guangdong Province,PRC 516081**

Product Name: Heater Remote Controller

Model Name: 6th Sense®

Brand Name: whirlpool

FCC ID: N7JSMRM

Report No.: MTE/EAH/D12050547

Date of Issue: May 16, 2012

Issued by: Most Technology Service Co., Ltd.

**Address : No.5, Langshan 2nd Road, North District, Hi-tech Industrial Park,
Nanshan, Shenzhen, Guangdong, China**

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TABLE OF CONTENTS

1. VERIFICATION OF CONFORMITY.....	3
2. GENERAL INFORMATION.....	4
2.1 Product Information	4
2.2 Objective	5
2.3 Test Standards and Results.....	5
2.4 Environmental Conditions.....	5
3. TEST FACILITY	6
3.1 TEST FACILITY	6
3.2 GENERAL TEST PROCEDURES	6
3.3 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS.....	7
4. SETUP OF EQUIPMENT UNDER TEST.....	8
4.1 SUPPORT EQUIPMENT	8
4.2 TEST EQUIPMENT LIST.....	9
5. 47 CFR Part 15C 15.249 Requirements.....	10
5.1 Spurious Emission Test	10
5.1.1 Requirement.....	10
5.1.2 Test Description.....	11
5.1.3 Test Description.....	12
5.1.4 Test Result.....	13
5.2 20 dB Bandwidth	18
5.2.1 Definition	18
5.2.2 Block Diagram Of Test Setup	18
5.2.3 Test Result.....	18
APPENDIX 1	19
PHOTOGRAPHS OF TEST SETUP.....	19

1. VERIFICATION OF CONFORMITY

Equipment Under Test: Heater Remote Controller
Brand Name: whirlpool
Model Number: 6th Sense®
FCC ID: N7JSMRM
Applicant: Master Branks HK Limited
Dong Er Road ,Western District of science and Technology Park,Daya Bay
Economy and Technology Development District, Huizhou City, Guangdong
Province,PRC 516081
Manufacturer: HuiZhou Daya Bay Honor Tone Electronic Ltd.
Dong Er Road ,Western District of science and Technology Park,Daya Bay
Economy and Technology Development District, Huizhou City, Guangdong
Province,PRC 516081
Technical Standards: 47 CFR Part 15 Subpart C
File Number: MTE/EAH/D12050547
Date of test: May 05-14, 2012
Deviation: None
Condition of Test Sample: Normal
Test Result: PASS

The above equipment was tested by MOST for compliance with the requirements set forth in FCC rules and the Technical Standards mentioned above. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment and the level of the immunity endurance of the equipment are within the compliance requirements.

The test results of this report relate only to the tested sample identified in this report.

Prepare by (+ signature):


Dona Liu

May 15, 2012

Review by (+ signature):


Elva Wong

May 15, 2012

Approved by (+ signature):


Yvette Zhou

May 16, 2012



2. GENERAL INFORMATION

2.1 Product Information

Product:	Heater Remote Controller
Trade Name:	whirlpool
Model Number:	6 th Sense®
Series Number:	N/A
Description of Differences:	N/A
Power Supply:	DC 3V
Frequency Range:	914.8MHz
Modulation Type:	ASK
Antenna Type:	Internal Fixed
Antenna Gain:	-1.0dBi
Channel Number:	1
Temperature Range:	0°C ~ 30°C

NOTE:

1. For a more detailed features description about the EUT, please refer to User's Manual.

2.2 Objective

Perform FCC Part 15 Subpart C tests for FCC Marking.

2.3 Test Standards and Results

Test items and the results are as bellow:

No.	Section	Description	Result	Date of Test
1	15.249(a)	Spurious Emission	PASS	2012-05-14
2	15.249(a)	Band Edge	N/A	N/A
3	15.207	Power Line Conducted Emission Test	N/A	N/A
4	15.249(a)	20 dB Bandwidth	PASS	2012-05-05

Note: 1. The test result judgment is decided by the limit of measurement standard
2. The information of measurement uncertainty is available upon the customer's request.

2.4 Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

- Temperature: 15-35°C
- Humidity: 30-60 %
- Atmospheric pressure: 86-106 kPa

3. TEST FACILITY

3.1 TEST FACILITY

Test Site:	Most Technology Service Co., Ltd.
Location:	No.5, Langshan 2nd Rd., North Hi-Tech Industrial park, Nanshan, Shenzhen, Guangdong, China
Description:	There is one 3m semi-anechoic an area test sites and two line conducted labs for final test. The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2009 and CISPR 16 requirements. The FCC Registration Number is 490827. The IC Registration Number is 46405-7103. The CNAS Registration Number is CNAS L3573.
Site Filing:	The site description is on file with the Federal Communications Commission, 7435 Oakland Mills Road, Columbia, MD 21046.
Instrument Tolerance:	All measuring equipment is in accord with ANSI C63.4:2009 and CISPR 16 requirements that meet industry regulatory agency and accreditation agency requirement.
Ground Plane:	Two conductive reference ground planes were used during the Line Conducted Emission, one in vertical and the other in horizontal. The dimensions of these ground planes are as below. The vertical ground plane was placed distancing 40 cm to the rear of the wooden test table on where the EUT and the support equipment were placed during test. The horizontal ground plane projected 50 cm beyond the footprint of the EUT system and distanced 80 cm to the wooden test table. For Radiated Emission Test, one horizontal conductive ground plane extended at least 1 m beyond the periphery of the EUT and the largest measuring antenna, and covered the entire area between the EUT and the antenna.

3.2 GENERAL TEST PROCEDURES

EUT Function and Test Mode

The EUT has been tested under normal operating (TX) and standby (RX) condition. all normal using modes of the normal function were tested but only the worst test data of the worst mode is reported by this report under ASK Mode.

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4:2009, Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4:2009.

3.3 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

- (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

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	2655 - 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

- (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

4. SETUP OF EQUIPMENT UNDER TEST

4.1 SUPPORT EQUIPMENT

Device Type	Manufacturer	Model Name	Serial No.	Data Cable	Power Cable
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Remark:

All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.2 TEST EQUIPMENT LIST

Instrumentation: The following list contains equipment used at Most for testing. The equipment conforms to the CISPR 16-1 / ANSI C63.2 Specifications for Electromagnetic Interference and Field Strength Instrumentation from 10 kHz to 1.0 GHz or above.

No.	Equipment	Manufacturer	Model No.	S/N	Calibration due date
1	Test Receiver	Rohde & Schwarz	ESCI	100492	2013/03/14
2	L.I.S.N.	Rohde & Schwarz	ENV216	100093	2013/03/14
3	Coaxial Switch	Anritsu Corp	MP59B	6200283933	2013/03/14
4	Terminator	Hubersuhner	50Ω	No.1	2013/03/14
5	RF Cable	SchwarzBeck	N/A	No.1	2013/03/14
6	Test Receiver	Rohde & Schwarz	ESPI	101202	2013/03/14
7	Bilog Antenna	SCHWARZBECK	BBHA9120D	D69250	2013/03/14
8	Cable	Resenberger	N/A	NO.1	2013/03/14
9	Cable	SchwarzBeck	N/A	NO.2	2013/03/14
10	Cable	SchwarzBeck	N/A	NO.3	2013/03/14
11	DC Power Filter	DuoJi	DL2×30B	N/A	2013/03/14
12	Single Phase Power Line Filter	DuoJi	FNF 202B30	N/A	2013/03/14
13	3 Phase Power Line Filter	DuoJi	FNF 402B30	N/A	2013/03/14
14	Test Receiver	Rohde & Schwarz	ESCI	100492	2013/03/14
15	Absorbing Clamp	Luthi	MDS21	3635	2013/03/14
16	Coaxial Switch	Anritsu Corp	MP59B	6200283933	2013/03/14
17	AC Power Source	Kikusui	AC40MA	LM003232	2013/03/14
18	Test Analyzer	Kikusui	KHA1000	LM003720	2013/03/14
19	Line Impedance Network	Kikusui	LIN40MA-PCR-L	LM002352	2013/03/14
20	ESD Tester	Kikusui	KES4021	LM003537	2013/03/14
21	EMC PRO System	EM Test	UCS-500-M4	V0648102026	2013/03/14
22	Signal Generator	IFR	2032	203002/100	2013/03/14
23	Amplifier	A&R	150W1000	301584	2013/03/14
24	CDN	FCC	FCC-801-M2-25	47	2013/03/14
25	CDN	FCC	FCC-801-M3-25	107	2013/03/14
26	EM Injection Clamp	FCC	F-203I-23mm	403	2013/03/14
27	RF Cable	MIYAZAKI	N/A	No.1/No.2	2013/03/14
28	Universal Radio Communication Tester	ROHDE&SCHWARZ	CMU200	0304789	2013/03/14
29	Telecommunication Antenna	European Antennas	PSA 75301R/170	0304213	2013/03/14
30	Telecommunication Test Equipment	R&S	CMU200	N/A	2013/03/14
31	8 Loop Antenna	ARA	PLA-1030/B	1029	2013/02/19

NOTE: Equipments listed above have been calibrated and are in the period of validation.

5. 47 CFR Part 15C 15.249 Requirements

5.1 Spurious Emission Test

5.1.1 Requirement

According to FCC section 15.249(a):

Except as provided in paragraph (a) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (mV/m)	Field Strength of Harmonics (μV/m)
902-928	50	500
2400-2483.5	50	500
5725-5875	50	500
24000-24250	250	2500

According to FCC section 15.209 (a) , except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

Remark: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

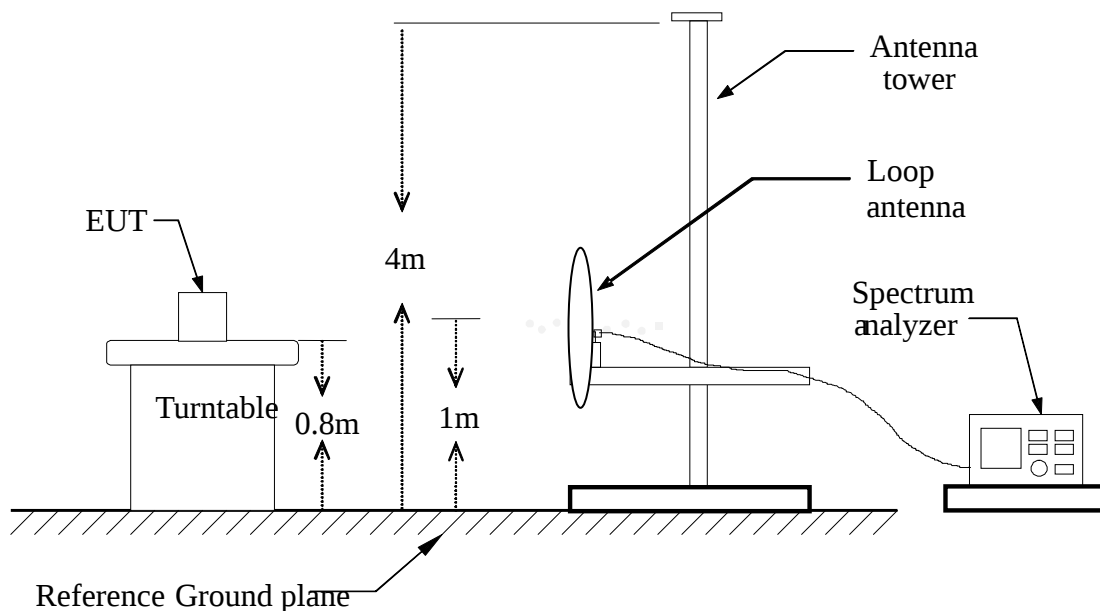
In the above emission table, the tighter limit applies at the band edges.

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

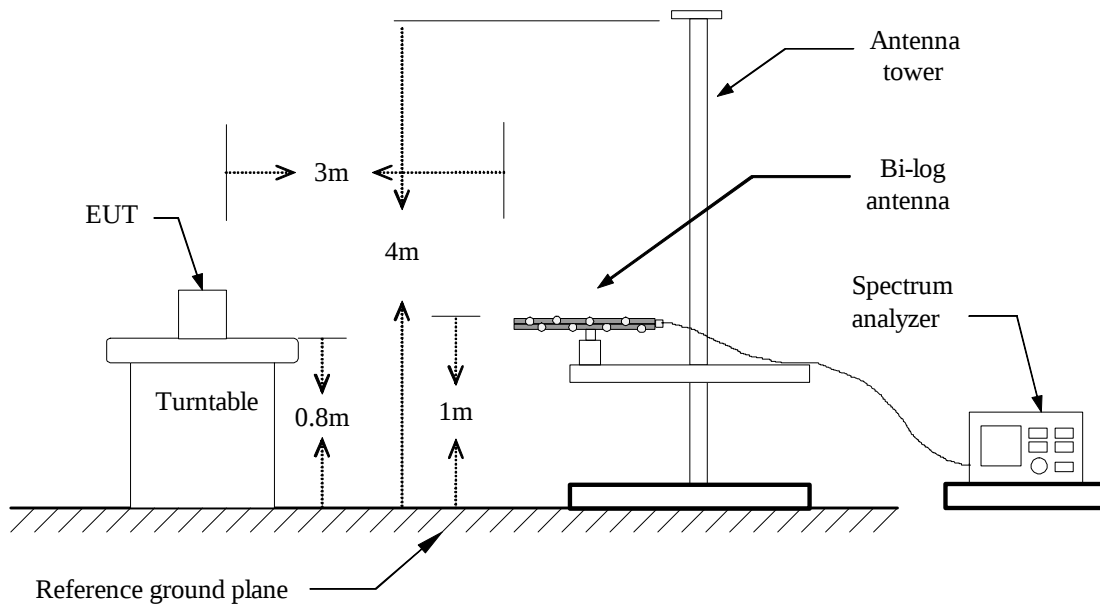
5.1.2 Test Description

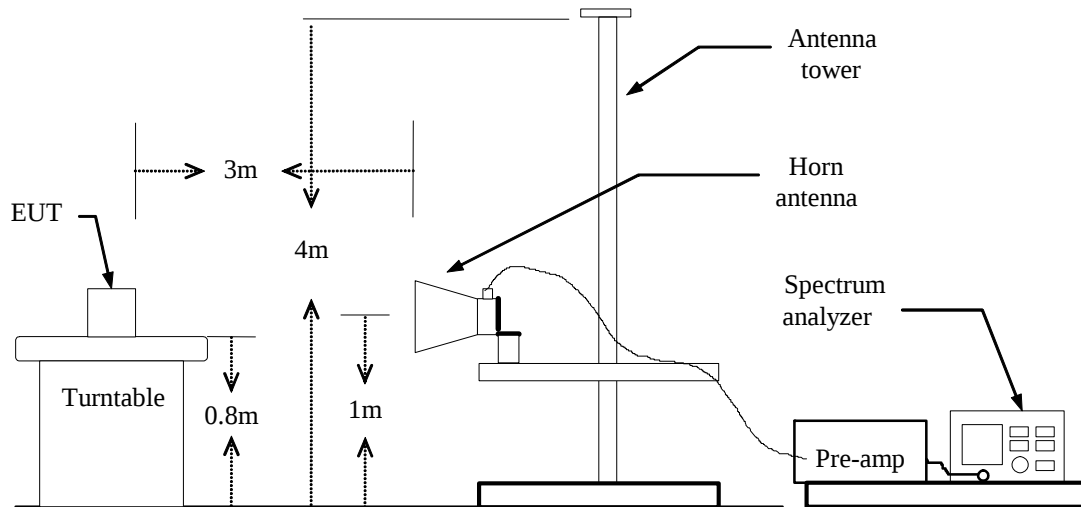
Test Setup:

From 9KHz to 30MHz:



From 30MHz to 1GHz:



Above 1GHz:**5.1.3 Test Description**

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:
 Below 1GHz: QP: RBW=100 kHz / VBW=300 kHz / Sweep=AUTO
 Above 1GHz : (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
 (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
7. Repeat above procedures until the measurements for all frequencies are complete.

5.1.4 Test Result

From 9 KHz to 30MHz:

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)			
N/A	H								>20
N/A	V								>20

-Note: No test data was detected in below 30MHz.

From 30MHz to 1GHz:

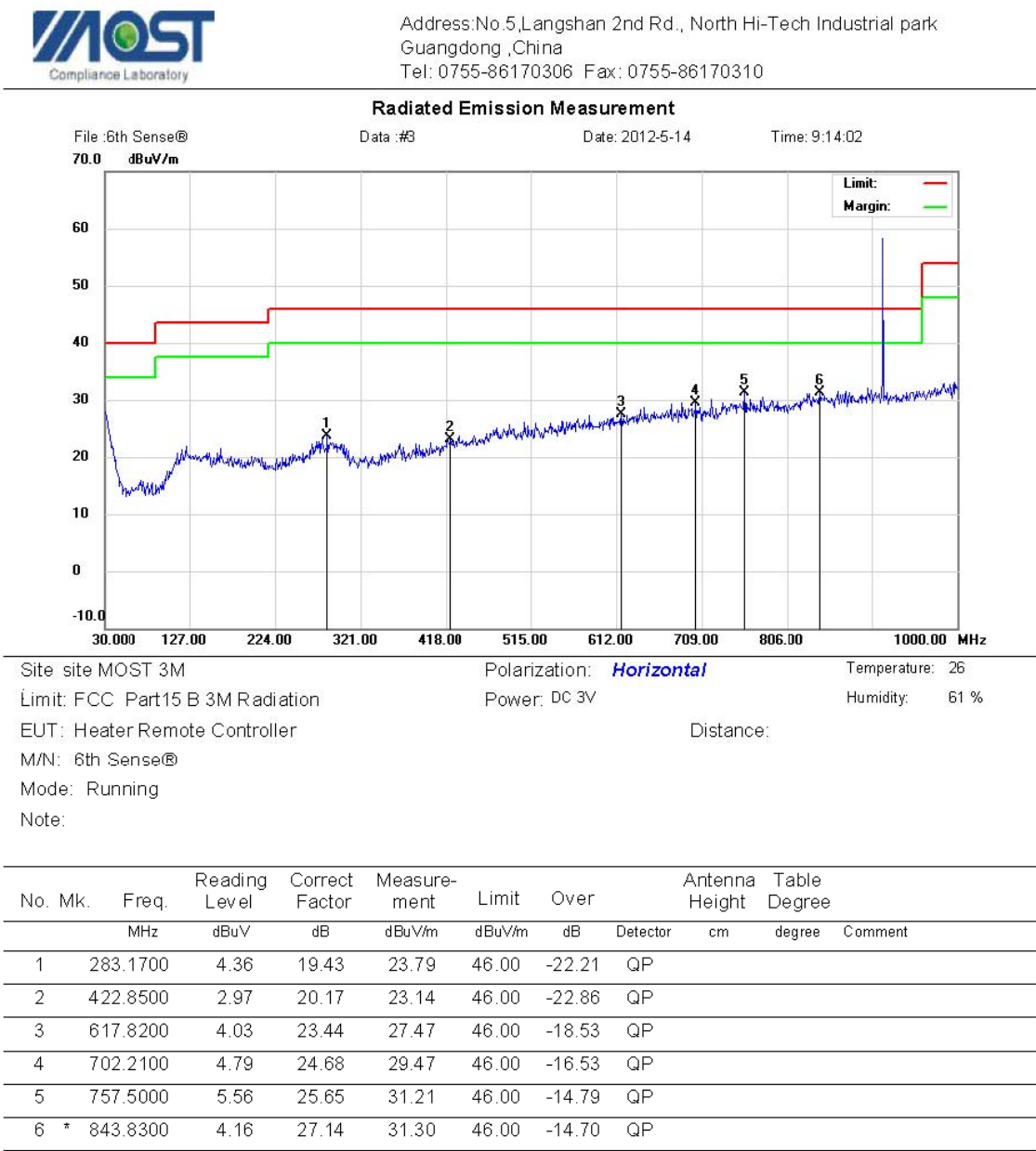
The following test mode(s) were scanned during the preliminary test:

Preliminary Radiated Emission Test				
Frequency Range Investigated		9KHz TO 26 GHz		
Mode of operation	Date	Report No.	Data#	Worst Mode
Running	2012-05-14	MTE/EAH/D12050547	1_(V, H)	☒

Note:

The model was carried out for ASK modulation type, The worst test data was shown on the summary data page.

From 30MHz to 1GHz



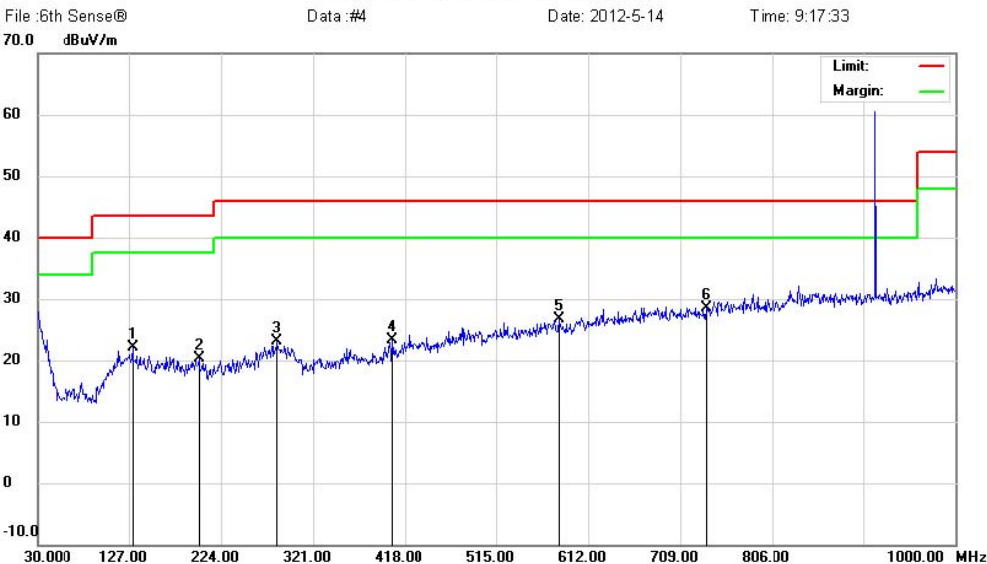
*:Maximum data x:Over limit l:over margin

Engineer Signature: Allen



Address:No.5,Langshan 2nd Rd., North Hi-Tech Industrial park
Guangdong ,China
Tel: 0755-86170306 Fax: 0755-86170310

Radiated Emission Measurement



Site: site MOST 3M Polarization: **Vertical** Temperature: 26
Limit: FCC Part15 B 3M Radiation Power: DC 3V Humidity: 61 %
EUT: Heater Remote Controller Distance:
M/N: 6th Sense®
Mode: Running
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		130.8800	4.46	17.66	22.12	43.50	-21.38	QP		
2		200.7200	2.87	17.37	20.24	43.50	-23.26	QP		
3		283.1700	3.73	19.43	23.16	46.00	-22.84	QP		
4		404.4200	4.42	18.79	23.21	46.00	-22.79	QP		
5		580.9600	3.75	22.91	26.66	46.00	-19.34	QP		
6	*	736.1599	3.21	25.23	28.44	46.00	-17.56	QP		

*:Maximum data x:Over limit l:over margin

Engineer Signature: Allen

Operation Mode: ASK Mode**Test Date:** May 05, 2012**Temperature:** 20°C**Tested by:** Sky Guo**Humidity:** 70 % RH**Polarity:** Ver. / Hor.

Field Strength of Fundamental Emissions Quasi-Peak Value						
Frequency	E-Field Polarity	Reading Level dB μ V/m	Correct Factor dB μ V/m	Measurement dB μ V/m	Limit dB μ V/m	Over
914.8	H	40.33	18.42	58.75	94	-35.21
914.8	V	43.19	17.69	60.88	94	-33.12

Above 1 GHz**Operation Mode:** ASK Mode**Test Date:** May 05, 2012**Temperature:** 20°C**Tested by:** Sky Guo**Humidity:** 70 % RH**Polarity:** Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)			
1829.60	H	48.26	27.16	23.12	71.38	50.28	74.00	54.00	-3.72
N/A									>20
1829.60	V	46.26	25.71	23.12	69.38	48.83	74.00	54.00	-5.17
N/A									>20

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Spectrum setting:
 - a. Peak Setting 1GHz - 26GHz, RBW = 1MHz, VBW = 1MHz, Sweep time = 200 ms.
 - b. AV Setting 1GHz - 26GHz, RBW = 1MHz, VBW = 10Hz, Sweep time = 200 ms.

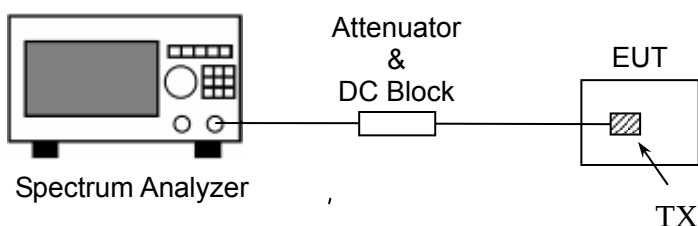
5.2 20 dB Bandwidth

5.2.1 Definition

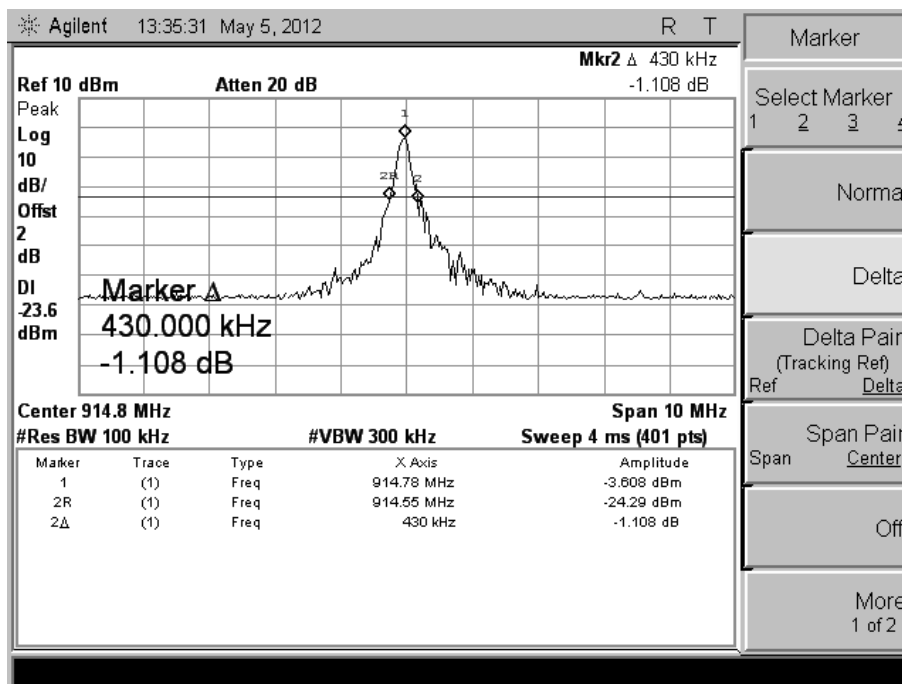
Intentional radiators operating under the alternative provisions to the general emission limits, as Contained in §§15.217 through 15.257 and in sub-part E of this part, must be designed to ensure that the 20 dB Bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific Rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

5.2.2 Block Diagram Of Test Setup

The EUT is powered by the Battery, is coupled to the Spectrum Analyzer (SA) through the Attenuator/DC Block. The path loss as the factor is calibrated to correct the reading. During the measurement, the EUT is activated and is set to operate at maximum power. The RF load attached to the EUT antenna terminal is 50Ohm.

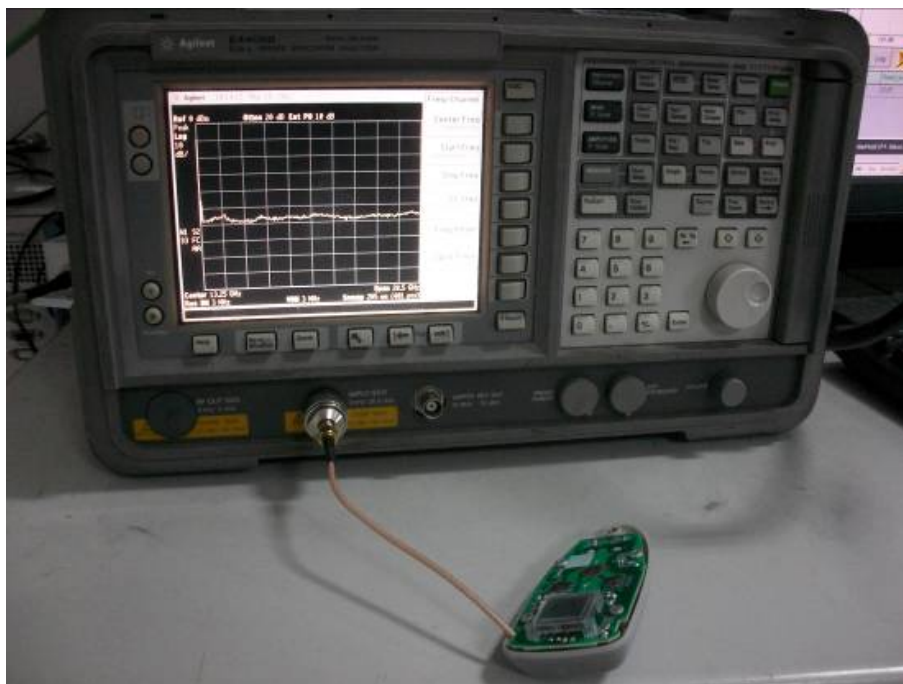


5.2.3 Test Result

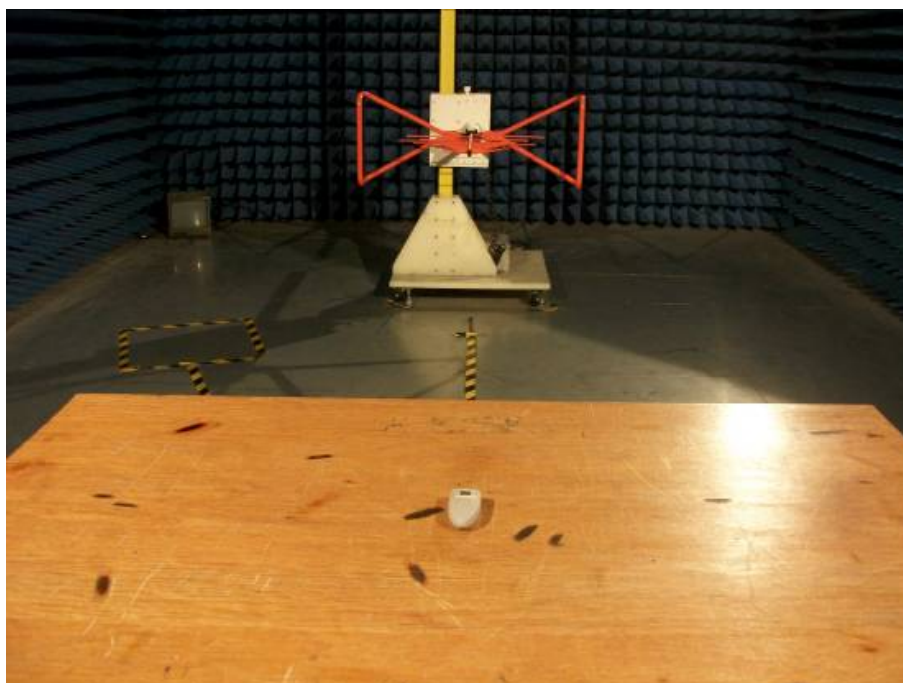


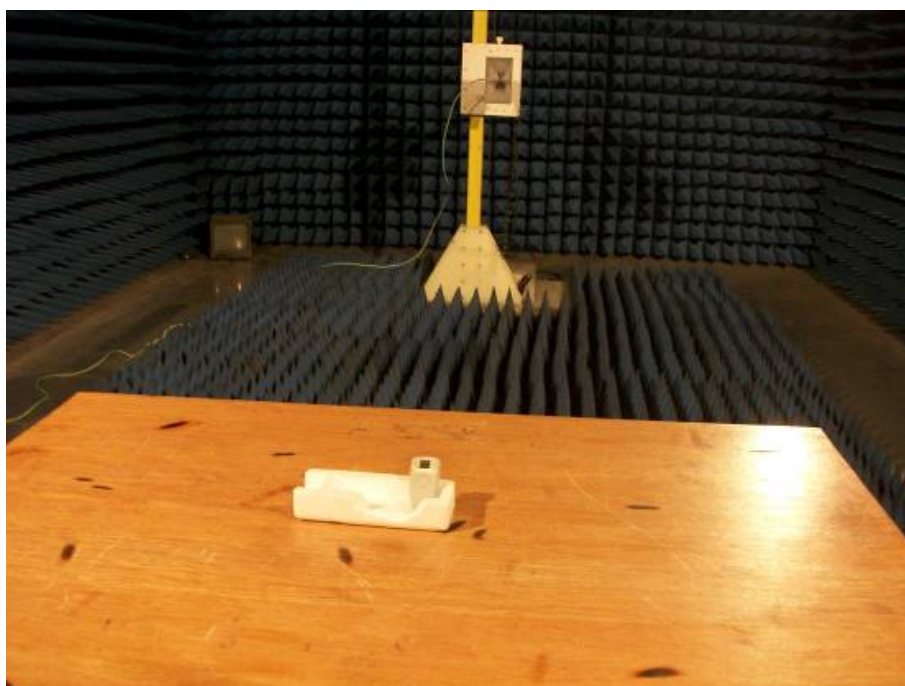
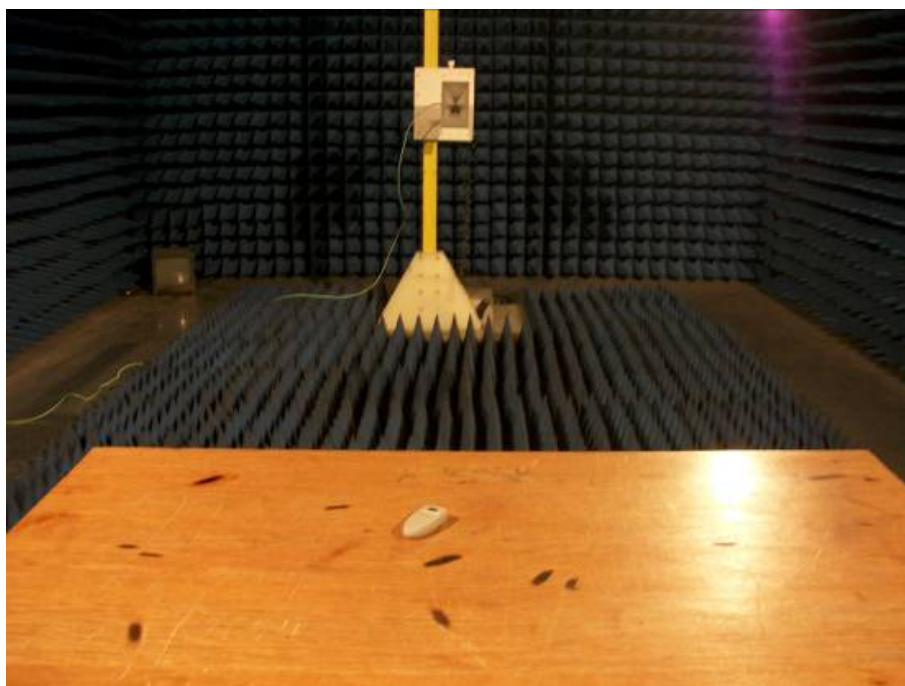
APPENDIX 1
PHOTOGRAPHS OF TEST SETUP

CONDUCTED TEST SETUP



RE TEST SETUP





-----END OF REPORT-----