FCC 47 CFR PART 15 SUBPART B

TEST REPORT

For

Applicant :	**NDS, Inc.**
Address :	**851 N. Harvard, Lindsay, CA 93247**
Product Name :	**Controller**
Model Name :	**RSC600i**
Brand Name :	**N/A**
FCC ID :	**XR6-RSC600I**
Report No. :	**MOST091009F1**
Date of Issue :	**November. 06, 2009**

Issued by :	**Most Technology Service Co., Ltd.**
Address :	**No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China**
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1. VERIFICATION OF CONFORMITY

Equipment Under Test:	Controller
Brand Name:	N/A
Model Number:	RSC600i
FCC ID:	XR6-RSC600I
Applicant:	NDS, Inc. 851 N. Harvard, Lindsay, CA 93247
Manufacturer:	HONOR TONE LIMITED Lot No.15-16, Western District of Science & Technology Park, Daya Ba Economy and Technology Development District, Huizhou City, Guangdong Province, PRC.
Technical Standards:	FCC Part 15 B
File Number:	MOST091009F1
Date of test:	October 30~ November. 06, 2009
Deviation:	None
Condition of Test Sample:	Normal

The above equipment was tested by MOST for compliance with the requirements set forth in FCC Part 15 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.

Tested by (+ signature): Petter Ping

Petter Ping November. 06, 2009

Review by (+ signature): July Wen

July Wen November. 06, 2009

Approved by (+ signature): Terry Yang

Terry Yang November. 06, 2009

2. GENERAL INFORMATION

2.1 PRODUCT INFORMATION

Housing Type:	Plastic
EUT Rating Voltage:	AC 120V/60Hz
Voltage During Test:	AC 120V/60Hz
I/O Type of EUT:	DC POWER/COM/STA/RSA/RSB
I/O Q'TY:	1/2/6/1/1
Model Number:	Controller
Series Number:	N/A
Description of Differences:	N/A

NOTE:

1. Please refer to Appendix 2 for the photographs of the EUT. For a more detailed features description about the EUT, please refer to User's Manual.

2.2 OBJECTIVE

Perform FCC Part 15 Subpart B tests for FCC Marking.

2.3 TEST STANDARDS AND RESULTS

Test items and the results are as bellow:

EMISSION			
Standard	**Item**	**Result**	**Remarks**
FCC 47 CFR Part 15 Subpart B	Conducted	PASS	Meet Class B limit
	Radiated	PASS	Meet Class B limit

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: 15-35ºC
- Humidity: 30-60 %
- Atmospheric pressure: 86-106 kPa

2.5 MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the “Guide to the Expression of Uncertainty in Measurement” (GUM) published by ISO.

- Uncertainty of Conducted Emission, Uc = ±1.8dB
- Uncertainty of Radiated Emission, Uc = ±3.2dB

3. TEST METHODOLOGY

3. 1TEST 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 and CISPR 16 requirements. The FCC Registration Number is **490827.** 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 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 1m beyond the periphery of the EUT and the largest measuring antenna, and covered the entire area between the EUT and the antenna. It has no holes or gaps having longitudinal dimensions larger than one-tenth of a wavelength at the highest frequency of measurement up to 1GHz.

3.2 GENERAL TEST PROCEDURES

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. 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.

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 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

4.2 SUPPORT EQUIPMENT

Device Type	Brand	Model	FCC ID	Series No.	Data Cable	Power Cord
Power Supply	raindrip	U240045A31	N/A	N/A	2 m	N/A

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. 3 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	Calculator due date
1	Test Receiver	Rohde & Schwarz	ESCI	100492	2010/03/14
2	L.I.S.N.	Rohde & Schwarz	ENV216	100093	2010/03/14
3	Coaxial Switch	Anritsu Corp	MP59B	6200283933	2010/03/14
4	Terminator	Hubersuhner	50Ω	No.1	2010/03/14
5	RF Cable	SchwarzBeck	N/A	No.1	2010/03/14
6	Test Receiver	Rohde & Schwarz	ESPI	101202	2010/03/14
7	Bilog Antenna	Sunol	JB3	A121206	2010/03/14
8	Test Antenna - Horn	Schwarzbeck	BBHA 9120C	--	2010/03/14
9	Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	--	2010/03/14
10	Cable	Resenberger	N/A	NO.1	2010/03/14
11	Cable	SchwarzBeck	N/A	NO.2	2010/03/14
12	Cable	SchwarzBeck	N/A	NO.3	2010/03/14
13	DC Power Filter	DuoJi	DL2×30B	N/A	2010/03/14
14	Single Phase Power Line Filter	DuoJi	FNF 202B30	N/A	2010/03/14
15	3 Phase Power Line Filter	DuoJi	FNF 402B30	N/A	2010/03/14
16	Test Receiver	Rohde & Schwarz	ESCI	100492	2010/03/14
17	Absorbing Clamp	Luthi	MDS21	3635	2010/03/14
18	Coaxial Switch	Anritsu Corp	MP59B	6200283933	2010/03/14
19	AC Power Source	Kikusui	AC40MA	LM003232	2010/03/14
20	Test Analyzer	Kikusui	KHA1000	LM003720	2010/03/14
21	Line Impendence Network	Kikusui	LIN40MA-PCR-L	LM002352	2010/03/14
22	ESD Tester	Kikusui	KES4021	LM003537	2010/03/14
23	EMCPRO System	EM Test	UCS-500-M4	V0648102026	2010/03/14
24	Signal Generator	IFR	2032	203002/100	2010/03/14
25	Amplifier	A&R	150W1000	301584	2010/03/14
26	CDN	FCC	FCC-801-M2-25	47	2010/03/14
27	CDN	FCC	FCC-801-M3-25	107	2010/03/14
28	EM Injection Clamp	FCC	F-203I-23mm	403	2010/03/14
29	RF Cable	MIYAZAKI	N/A	No.1/No.2	2010/03/14
30	Universal Radio Communication Tester	ROHDE&SCHWARZ	CMU200	0304789	2010/03/14
31	Telecommunication Antenna	European Antennas	PSA 75301R/170	0304213	2010/03/14

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

5. 47 CFR PART 15B REQUIREMENTS

5.1 GENERAL INFORMATION

EUT Function and Test Mode

The EUT has been tested under normal operating（TX）and standby（RX）condition.

The field strength of radiation emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis).

The following data show only with the worst case setup.

The worst case of Y axis was reported.

Based on client request, all normal using modes of the Bluetooth function were tested but only the worst test data of the worst mode is reported by this report.

6. LINE CONDUCTED EMISSION TEST

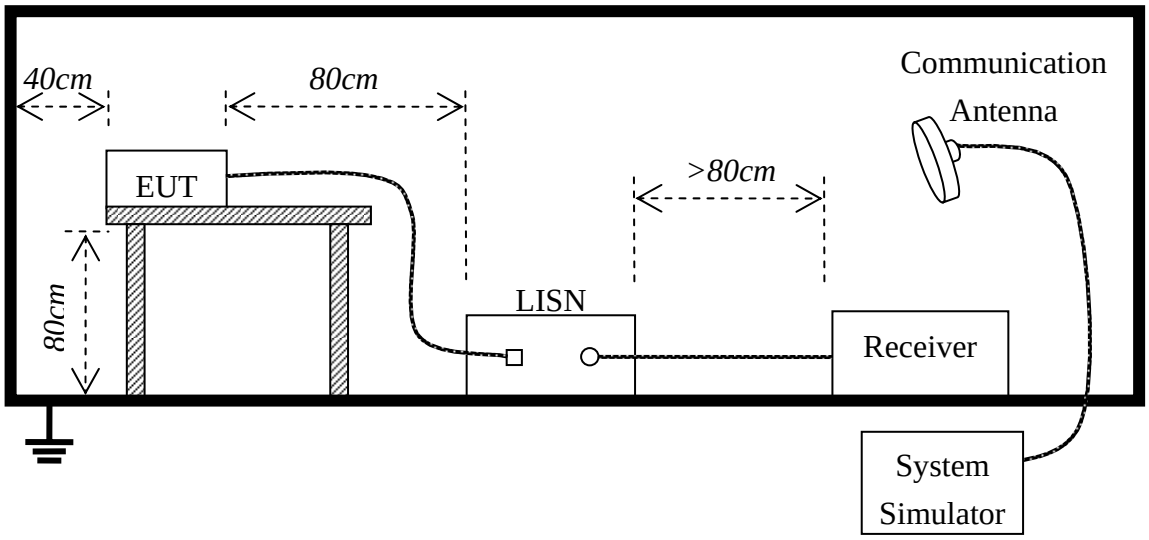
6.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz-500kHz	66-56	56-46
500kHz-5MHz	56	46
5MHz-30MHz	60	50

***Note:** 1. the lower limit shall apply at the transition frequency.*

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

6.2. BLOCK DIAGRAM OF TEST SETUP



6.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per FCC Part 15 (see Test Facility for the dimensions of the ground plane used). When the EUT is floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2) Support equipment, if needed, was placed as per FCC Part 15.
3) All I/O cables were positioned to simulate typical actual usage as per FCC Part 15.
4) The EUT received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5) All support equipments received power from a second LISN supplying power of AC 120V/60Hz, if any.
6) The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7) Analyzer / Receiver scanned from 150 kHz to 30 MHz for emissions in each of the test modes.
8) During the above scans, the emissions were maximized by cable manipulation.
9) The following test mode(s) were scanned during the preliminary test:

Preliminary Conducted Emission Test				
Frequency Range Investigated		150KHz TO 30 MHz		
Mode of operation	Date	Report No.	Data#	Worst Mode
Standby	2009-11-02	MOST091008F1	RSC600i_0_(L, N)	☐
Normal Working	2009-11-02	MOST091008F1	RSC600i_1_(L, N)	☒

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

6.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

EUT and support equipment was set up on the test bench as per step 9 of the preliminary test.

A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.

The test data of the worst case condition(s) was reported on the Summary Data page.

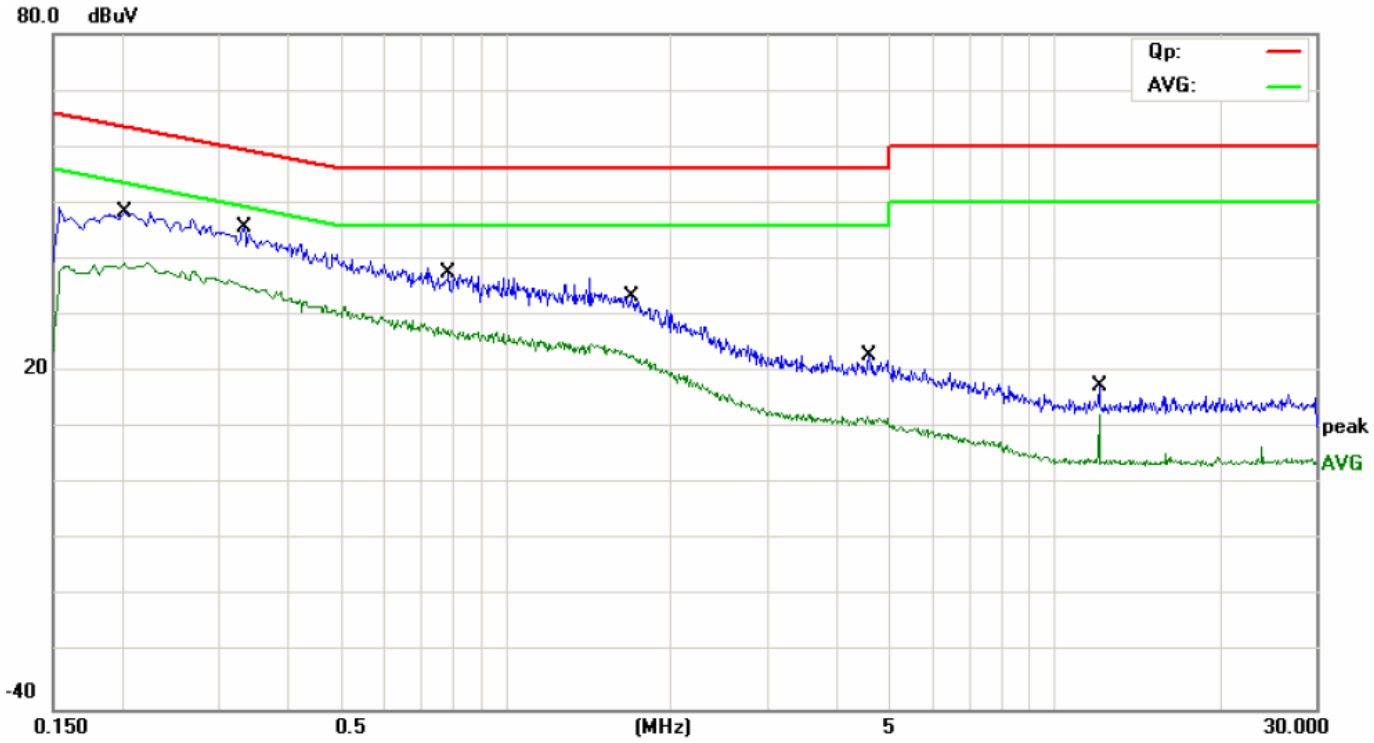
6.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

EUT	**:**	Controller	**Power**	**:**	AC 120V/60Hz
M/N	**:**	RSC600i	**Temperature**	**:**	27 ^{o}C
Mode	**:**	Normal Working	**Humidity**	**:**	60%

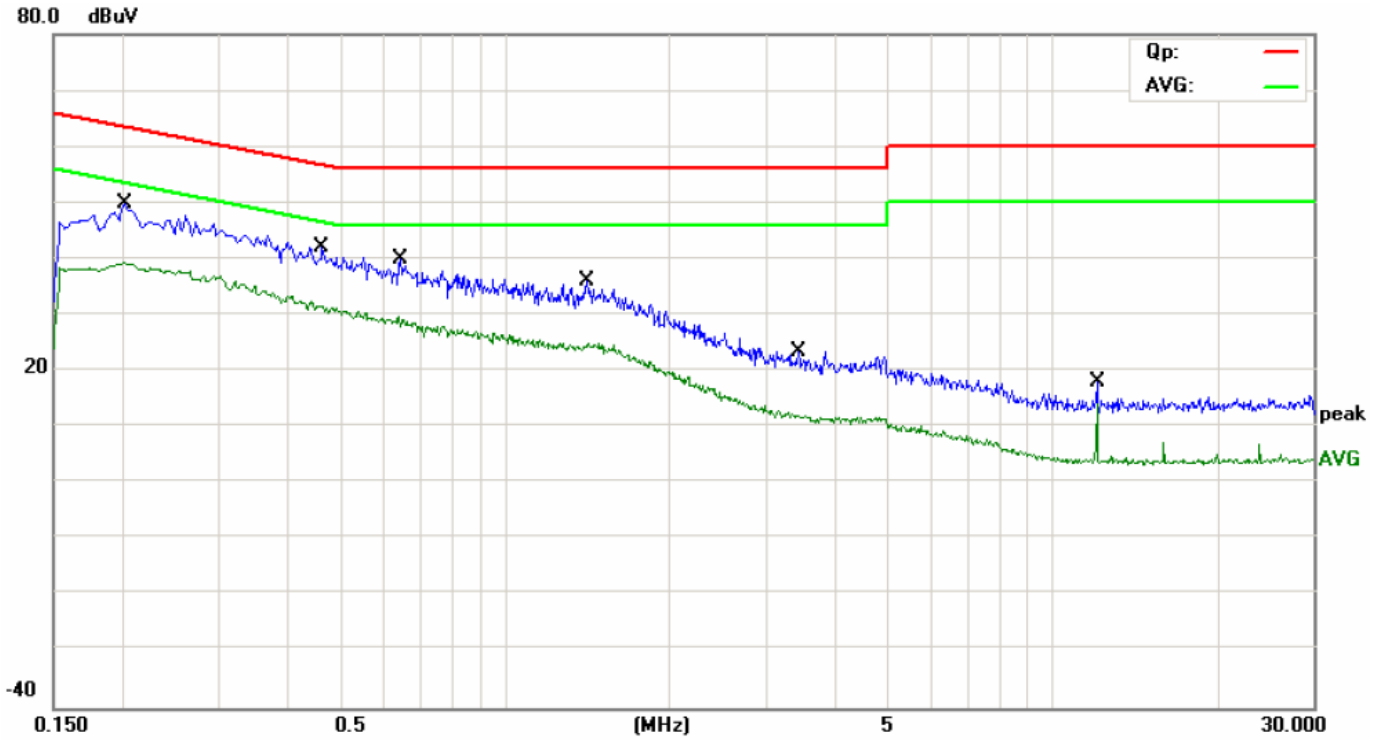
FREQ	Emission Level		Limit Level(dBuV)		Margin		Line
(MHz)	QP	AV	QP	AV	QP	AVG	
0.202	48.27	39.07	63.53	53.53	-15.26	-14.46	L
0.334	45.74	34.95	59.35	49.35	-13.61	-14.40	L
0.790	37.52	26.37	56.00	46.00	-18.48	-19.63	L
1.702	33.40	23.42	56.00	46.00	-22.60	-22.58	L
4.622	22.81	11.37	56.00	46.00	-33.19	-34.63	L
12.102	17.41	12.37	60.00	50.00	-42.59	-37.63	L
0.202	49.99	39.84	63.53	53.53	-13.54	-13.69	N
0.466	41.99	30.94	56.58	46.58	-14.59	-15.64	N
0.646	39.82	28.75	56.00	46.00	-16.18	-17.25	N
1.418	36.13	23.57	56.00	46.00	-19.87	-22.43	N
3.450	23.40	11.37	56.00	46.00	-32.60	-34.63	N
12.102	18.05	15.53	60.00	50.00	-41.95	-34.47	N

Freq. = Emission frequency in MHz
Reading level = Uncorrected Analyzer/Receiver reading
Factor = Cable loss + LISN inserting loss
Emission level = Reading level + Factor
Limit = Limit stated in standard
Margin = Reading in reference to limit
"---" = The emission level complied with the Average limits, with at least 2 dB margin, so no further recheck.

1 · Mains terminal disturbance voltage, L phase



2 · Mains terminal disturbance voltage, N phase



7. RADIATED EMISSION TEST

7.1. LIMITS OF RADIATED DISTURBANCES AT 3M DISTANCES FOR CLASS B

According to FCC section 15.249(c), radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

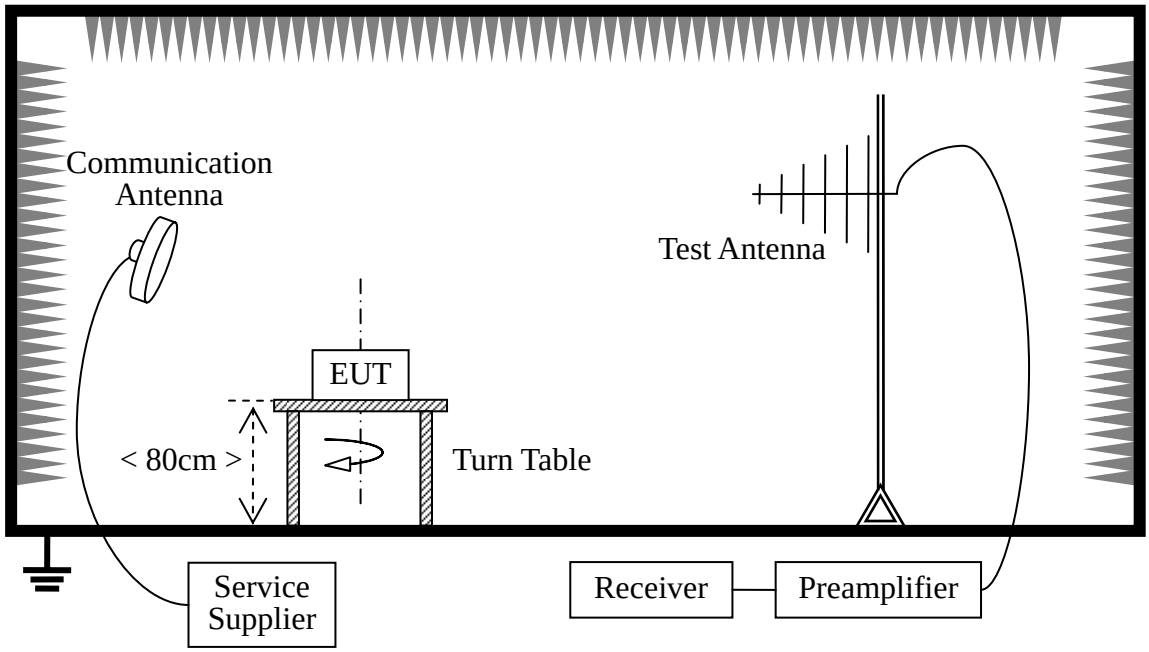
According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
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 FCC section 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector. When average radiated emission measurements are specified in this part, including emission measurements below 1000MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules.

7.2 TEST DESCRIPTION

Test Setup:



The EUT is powered by the Battery charged with the AC Adapter which is powered by 120V, 60Hz AC mains supply. The Module is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading. During the measurement, the EUT is activated and transmitting with the other Bluetooth device (Supply by the Applicant) during the test.

For the Test Antenna:

(a) In the frequency range of 9 kHz to 30MHz, magnetic field is measured with Loop Test Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.

(b) In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. The emission levels at both horizontal and vertical polarizations should be tested.

Preliminary Radiated Emission Test				
Frequency Range Investigated			**30 MHz TO 1000 MHz**	
Mode of operation	**Date**	**Report No.**	**Data#**	**Worst Mode**
Standby	2009-11-02	MOST091008F1	RSC600i_0_(H, V)	☐
Normal Working	2009-11-02	MOST091008F1	RSC600i_1_(H, V)	☒

7.3 TEST RESULT

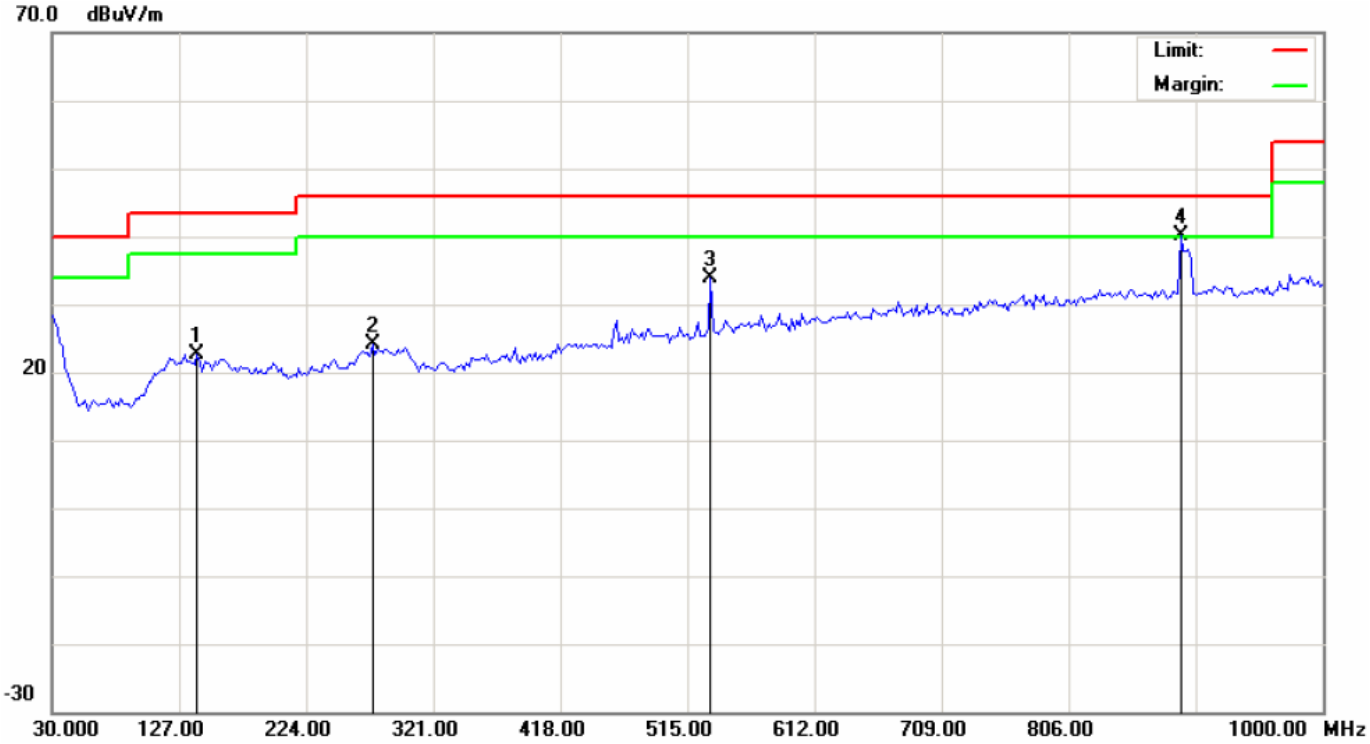
EUT	**:**	Controller	**Power**	**:**	AC 120V
M/N	**:**	RSC600i	**Temperature**	**:**	27 °C
Mode	**:**	Normal Working	**Humidity**	**:**	60%

Frequency Range Investigated (30 MHz TO 1000 MHz)							
Freq. (MHz)	**Reading(RA) (dBuV)**	**Corr.Factor(CF) (dB)**	**Measured(FS) (dBuV/m)**	**Limits(QP) (dBuV/m)**	**Safe Margins (dBuV/m)**	**Ant. H/V**	**Mark**
140.580	5.43	17.17	22.60	43.50	-20.90	H	Q
274.440	4.98	19.17	24.15	46.00	-21.85	H	Q
532.460	11.64	22.17	33.81	46.00	-12.19	H	Q
891.360	12.75	27.31	40.06	46.00	-5.94	H	Q
39.700	16.33	17.05	33.38	40.00	-6.62	V	Q
142.520	16.14	17.05	33.19	43.50	-10.31	V	Q
301.600	4.84	18.87	23.71	46.00	-22.29	V	Q
716.760	5.42	24.67	30.09	46.00	-15.91	V	Q

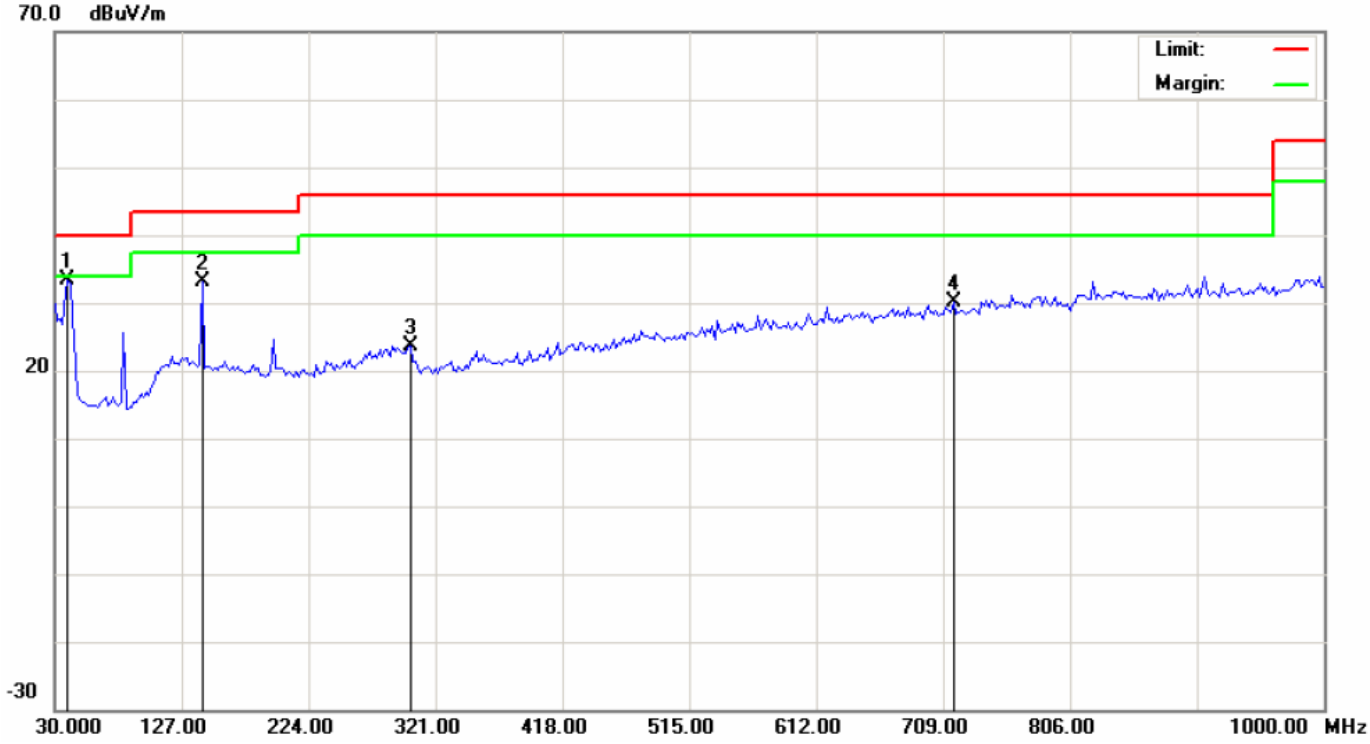
Note:

The maximum radiated emission is searched using PK, QP and AV detectors; the emission levels more than the limits, and that have narrow margins from the limits will be re-measured with AV and QP detectors.

1 · Radiated Disturbance Measurement, max peak detector, antenna polarization: Horizontal



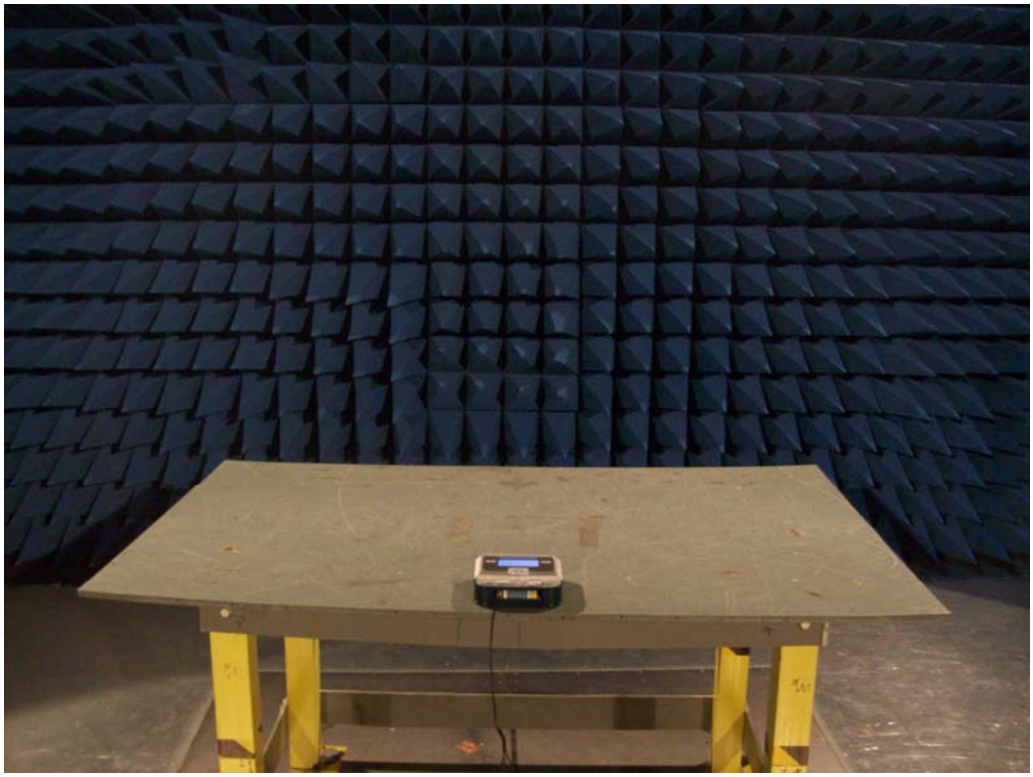
2 · Radiated Disturbance Measurement, max peak detector, antenna polarization: Vertical



APPENDIX 1
PHOTOGRAPHS OF TEST SETUP

Line Conducted Emission Test Setup

Radiated Emission Test Setup



APPENDIX 2
PHOTOGRAPHS OF EUT

FRONT VIEW OF SAMPLE

BACK VIEW OF SAMPLE

LEFT VIEW OF SAMPLE

RIGHT VIEW OF SAMPLE

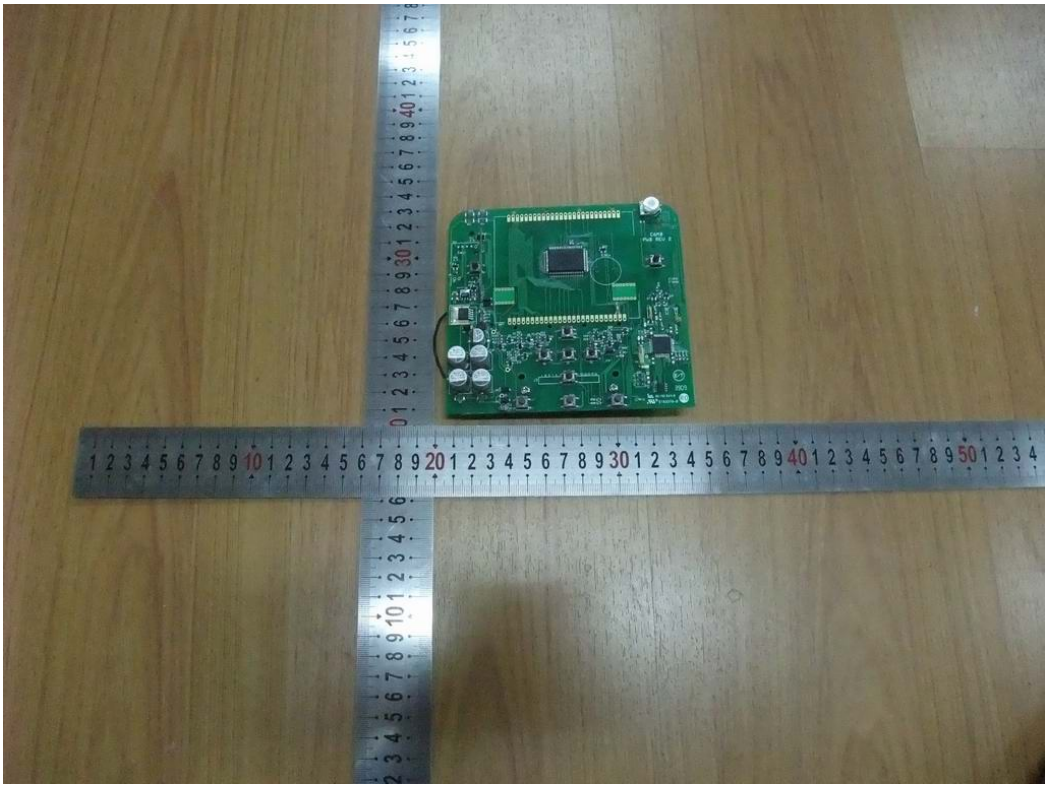
TOP VIEW OF SAMPLE

BOTTOM VIEW OF SAMPLE

PHOTO OF POWER SUPPLY

PHOTO OF THE ENTIRE SAMPLE

INTERNAL PHOTO OF SAMPLE –1



INTERNAL PHOTO OF SAMPLE –2

INTERNAL PHOTO OF SAMPLE –3

INTERNAL PHOTO OF SAMPLE – 4

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