

FCC Report

Product Description: A2-bluetooth Speaker

Trade Mark: Handxom

Model No.: Handxom-A2

FCC ID: 2ADBT-HANDXOM-A2

Applicant: Handxom, S.A.

Address: 11 Rue Oge, Petion-Ville, Haiti HT6140

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.249:2013

Test Date: 25 ~ 30 September, 2014

Issued Date: 30 September, 2014

Test Result: Complied



James Wu
Laboratory Manager

The test result in this test report relate only to the tested samples in this report .

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2 Version

<i>Version No.</i>	<i>Date</i>	<i>Description</i>
00	30 September, 2014	Original

Prepared By:

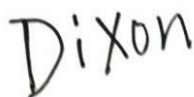


Young Li
Project Engineer

Date:

30 September, 2014

Check By:



Dixon Hao
Reviewer

Date:

30 September, 2014

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
Band edge	15.249 (d)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

Pass: The EUT has complied with the essential requirements in the standard.

5 General Information

5.1 Client Information

Applicant:	Handxom, S.A.
Address:	11 Rue Oge, Petion-Ville, Haiti HT6140
Manufacturer:	Handxom, S.A.
Address:	11 Rue Oge, Petion-Ville, Haiti HT6140

5.2 General Description of EUT

Product Name:	A2-bluetooth Speaker
Brand Mark:	Handxom
Model No.:	Handxom-A2
Bluetooth Version:	V2.1+EDR
Operation Frequency:	2402MHz~2480MHz
Channel numbers:	79
Channel separation:	1MHz
Modulation type:	Frequency Hopping Spread Spectrum (FHSS)
Modulation technology:	GFSK, Pi/4QPSK, 8DPSK
Antenna Type:	Integral Antenna
Antenna Gain:	1.00dBi (declare by Applicant)
Power supply:	lithium-ion charge battery 3.7V

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402MHz	21	2422MHz	41	2442MHz	61	2462MHz
2	2403MHz	22	2423MHz	42	2443MHz	62	2463MHz
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
18	2419MHz	38	2439MHz	58	2459MHz	78	2479MHz
19	2420MHz	39	2440MHz	59	2460MHz	79	2480MHz
20	2421MHz	40	2441MHz	60	2461MHz		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Test channel	Frequency (MHz)
Lowest channel	2402
Middle channel	2441
Highest channel	2480

5.3 Test Mode

Bluetooth mode	Keep the EUT in communicating mode with Bluetooth device.
Non-hopping mode	Keep the EUT in continuously transmitting mode of modulation with the fix frequency.
Hopping mode	Keep the EUT in continuously transmitting mode of modulation with hopping.

Remark : Non-hopping mode is the worse case and only reported

Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

Axis	X	Y	Z
Field Strength(dBuV/m)	86.49	90.07	84.83

Final Test Mode:

The EUT was tested in GFSK, Pi/4QPSK, 8DPSK modulation, and found the GFSK modulation is the worst case.

According to ANSI C63.4 standards, the test results are both the “worst case” and “worst setup”: Y axis (see the test setup photo)

5.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS —Registration No.: CNAS L5775**
 CNAS has accredited Global United Technology Services Co., Ltd. to ISO/IEC 17025 General Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.
- **FCC —Registration No.: 600491**
 Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, July 20, 2010.
- **Industry Canada (IC) —Registration No.: 9079A-1**
 The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-1.

5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China

6 Test Instruments list

Instrument	Manufacturer	Model No.	Inventory No.	Next Cal. Date
3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	Mar. 27 2015
Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A
EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jun. 30 2015
BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Feb. 22 2015
Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 26 2015
Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 27 2015
EMI Test Software	AUDIX	E3	N/A	N/A
Coaxial Cable	GTS	N/A	GTS213	Mar. 28 2015
Coaxial Cable	GTS	N/A	GTS211	Mar. 28 2015
Coaxial cable	GTS	N/A	GTS210	Mar. 28 2015
Coaxial Cable	GTS	N/A	GTS212	Mar. 28 2015
Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jun. 30 2015
Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jun. 30 2015
Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 26 2015
Band filter	Amindeon	82346	GTS219	Mar. 28 2015
Universal radio communication tester	Rohde & Schwarz	CMU200	GTS235	May 09 2015
Signal Generator	Rohde & Schwarz	SML03	GTS236	May 09 2015
Temp. Humidity/ Barometer	Oregon Scientific	BA-888	GTS248	May 09 2015
D.C. Power Supply	Instek	PS-3030	GTS232	NA
Splitter	Agilent	11636B	GTS237	May 09 2015

Conducted Emission				
Instrument	Manufacturer	Model No.	Inventory No.	Next Cal. Date
Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0(H)	GTS264	Sep. 06 2015
EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	Jun. 30 2015
10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	Jun. 30 2015
Coaxial Switch	ANRITSU CORP	MP59B	GTS225	Jun. 30 2015
LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	Jun. 30 2015
Coaxial Cable	GTS	N/A	GTS227	Jun. 30 2015
EMI Test Software	AUDIX	E3	N/A	N/A

7 Measurement Data and Test Results

7.1 Antenna requirement

Standard requirement

According to Standard: FCC Part15 C Section 15.203 /247(c)

15.203 requirement:

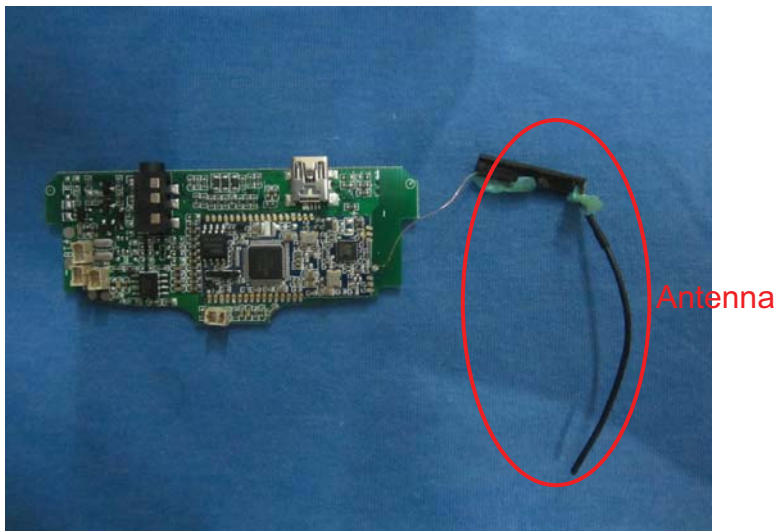
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(c) (1)(i) requirement:

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

EUT Antenna:

The antenna is unique integral Antenna, the typical gain of the antenna is 1dBi.



7.2 Conducted Emissions

Standard requirement

FCC Part15 C Section 15.207

Test method

ANSI C63.4:2003

Receiver set

RBW=9KHz, VBW=30KHz, Sweep time=auto

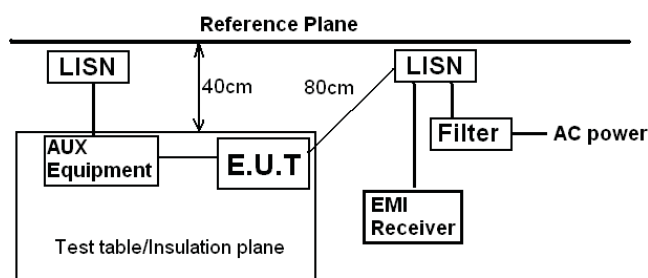
Limit

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

Test mode

Refer to section 5.3 for details

Test setup



Remark:
 E.U.T: Equipment Under Test
 LISN: Line Impedance Stabilization Network
 Test table height=0.8m

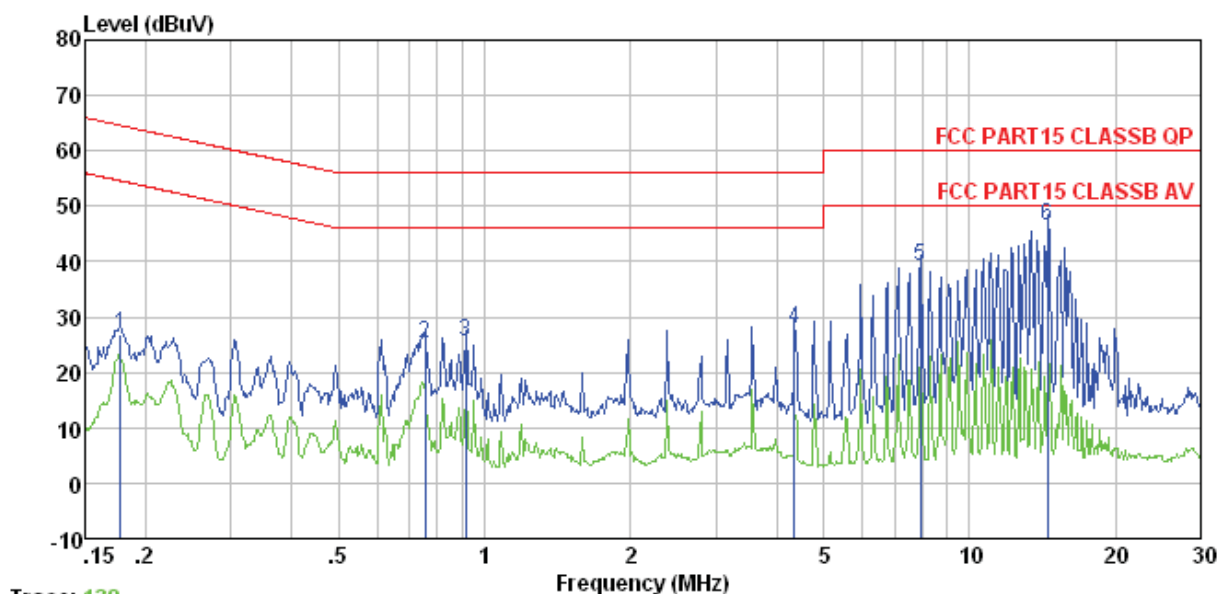
Test mode

1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.
2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).
3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.

Test Result

Complied

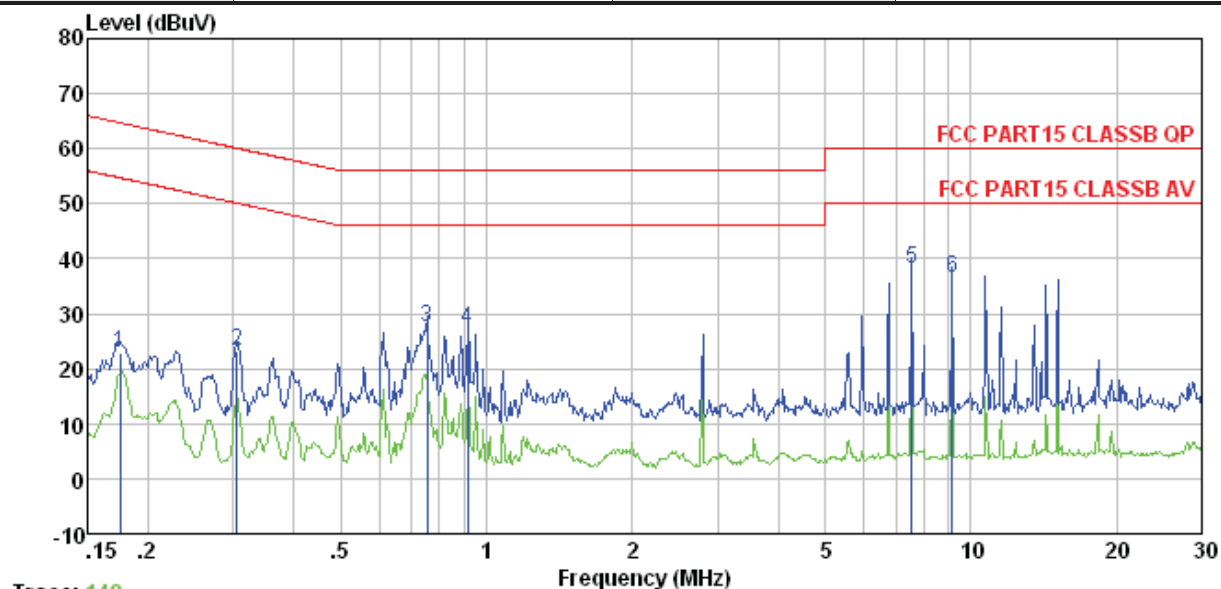
Test mode:	No hopping mode	Temperature:	24~26°C
Phase Polarity:	Neutral	Relative Humidity:	50~53%



Trace: 138

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.178	26.96	-0.09	0.10	26.97	64.59	-37.62	QP
2	0.755	25.17	-0.08	0.10	25.19	56.00	-30.81	QP
3	0.914	25.56	-0.09	0.10	25.57	56.00	-30.43	QP
4	4.361	27.89	-0.15	0.10	27.84	56.00	-28.16	QP
5	7.935	39.20	-0.22	0.18	39.16	60.00	-20.84	QP
6	14.517	46.54	-0.41	0.20	46.33	60.00	-13.67	QP

Test mode:	No hopping mode	Temperature:	24~26°C
Phase Polarity:	Line	Relative Humidity:	50~53%



Trace: 140								
	Read Freq	LISN Level	Cable Factor	Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.175	22.97	-0.23	0.10	22.84	64.72	-41.88	QP
2	0.305	23.48	-0.22	0.10	23.36	60.10	-36.74	QP
3	0.755	27.47	-0.20	0.10	27.37	56.00	-28.63	QP
4	0.914	27.18	-0.21	0.10	27.07	56.00	-28.93	QP
5	7.566	38.31	-0.35	0.17	38.13	60.00	-21.87	QP
6	9.156	36.80	-0.41	0.19	36.58	60.00	-23.42	QP

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss

7.3 20dB Occupy Bandwidth

Standard requirement

FCC Part15 C Section 15.249/15.215

Test method

ANSI C63.4:2003

Receiver set

RBW=100KHz, VBW=300KHz,detector=Peak

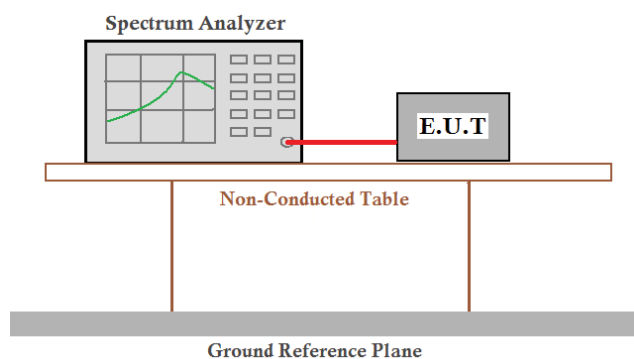
Limit

NA

Test mode

Refer to section 5.3 for details

Test setup



Test Result

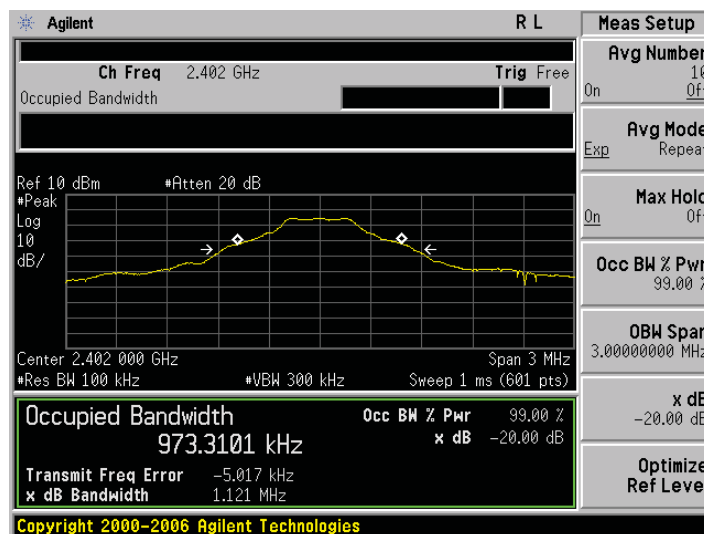
Complied

Measurement Data

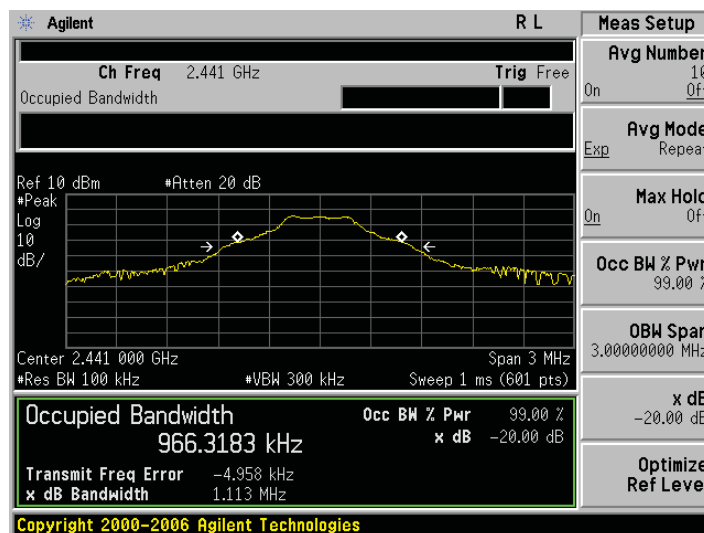
Worst case GFSK modulation

Test channel	20dB bandwidth(MHz)	Result
Lowest	1.121	Pass
Middle	1.113	Pass
Highest	1.113	Pass

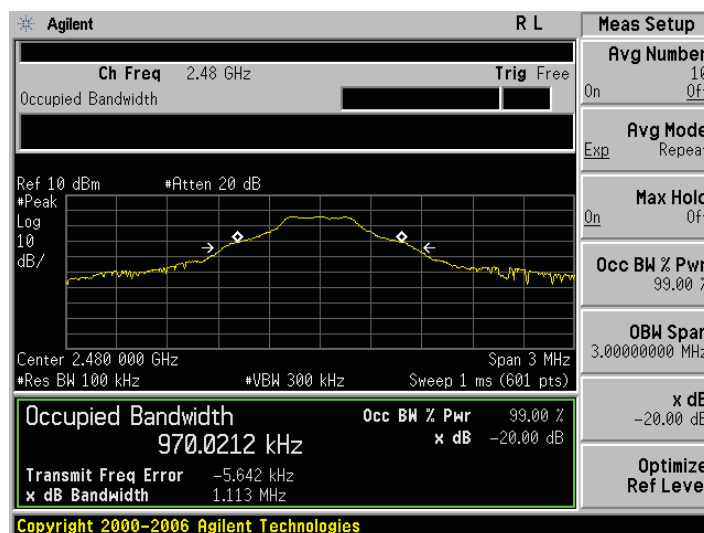
Test plot as follows:



Lowest channel



Middle channel



Highest channel

7.4 Radiated Emission Method

☞ Test method

FCC Part15 C Section 15.209 and 15.205

ANSI C63.4:2003

☞ Receiver set

Frequency	Detector	RBW	VBW	Remark
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	Peak	1MHz	10Hz	Average Value

Remark:

For the Field Strength of Fundamental test, the RBW and VBW were set to 2MHz and 6MHz

☞ Limit

Field strength of the fundamental signal

Frequency	Limit (dBuV/m @3m)	Remark
2400MHz-2483.5MHz	94.00	Average Value
	114.00	Peak Value

Spurious Emissions

Frequency	Limit (dBuV/m @3m)	Remark
30MHz-88MHz	40.00	Quasi-peak Value
88MHz-216MHz	43.50	Quasi-peak Value
216MHz-960MHz	46.00	Quasi-peak Value
960MHz-1GHz	54.00	Quasi-peak Value
Above 1GHz	54.00	Average Value
	74.00	Peak Value

Band Edge

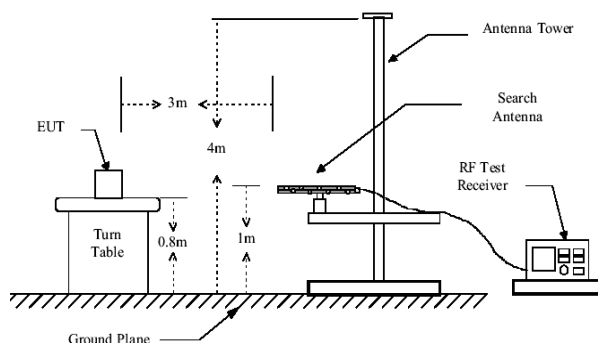
Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

☞ Test mode

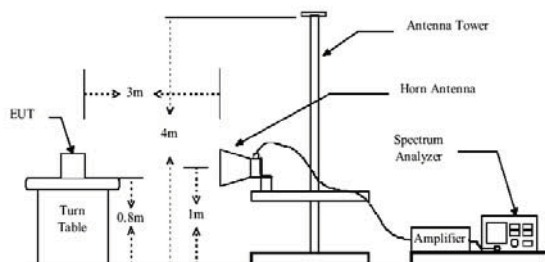
Refer to section 5.3 for details

☞ Test setup

Below 1GHz



Above 1GHz



Test Procedure

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna 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.
4. 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 rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

If the emission level of the EUT in peak mode was 10dB 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 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Test Result

Complied

Remark:

During the test, pre-scan the GFSK, Pi/4QPSK, 8DPSK modulation, and found the GFSK modulation which it is worse case, so only show the test data of worse case modulation on the test report.

Field Strength of The Fundamental Signal

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2402.00	86.37	27.58	5.39	30.18	89.16	114.00	-24.84	Horizontal
2402.00	84.56	27.58	5.39	30.18	87.35	114.00	-26.65	Vertical
2441.00	87.15	27.55	5.43	30.06	90.07	114.00	-23.93	Horizontal
2441.00	85.28	27.55	5.43	30.06	88.20	114.00	-25.80	Vertical
2480.00	85.13	27.52	5.47	29.93	88.19	114.00	-25.81	Horizontal
2480.00	82.79	27.52	5.47	29.93	85.85	114.00	-28.15	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2402.00	74.25	27.58	5.39	30.18	77.04	94.00	-16.96	Horizontal
2402.00	72.66	27.58	5.39	30.18	75.45	94.00	-18.55	Vertical
2441.00	74.96	27.55	5.43	30.06	77.88	94.00	-16.12	Horizontal
2441.00	73.17	27.55	5.43	30.06	76.09	94.00	-17.91	Vertical
2480.00	73.35	27.52	5.47	29.93	76.41	94.00	-17.59	Horizontal
2480.00	70.68	27.52	5.47	29.93	73.74	94.00	-20.26	Vertical

Spurious emissions

■ Below 1GHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
45.86	42.14	16.56	0.73	32.00	27.43	40.00	-12.57	Vertical
83.23	52.30	12.46	1.06	31.75	34.07	40.00	-5.93	Vertical
154.82	48.36	11.51	1.60	32.00	29.47	43.50	-14.03	Vertical
195.14	47.73	13.57	1.81	32.13	30.98	43.50	-12.52	Vertical
675.21	37.13	21.46	4.00	31.16	31.43	46.00	-14.57	Vertical
962.16	37.33	23.87	5.09	31.22	35.07	54.00	-18.93	Vertical
58.61	44.01	15.89	0.85	31.94	28.81	40.00	-11.19	Horizontal
80.93	48.98	11.96	1.04	31.76	30.22	40.00	-9.78	Horizontal
105.27	42.62	15.50	1.24	31.79	27.57	43.50	-15.93	Horizontal
238.31	49.11	15.04	2.06	32.16	34.05	46.00	-11.95	Horizontal
750.11	37.92	22.43	4.28	31.26	33.37	46.00	-12.63	Horizontal
916.07	36.65	24.03	4.91	31.19	34.40	46.00	-11.60	Horizontal

■ Above 1GHz

Test channel:	Lowest channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4804.00	33.03	31.78	8.60	24.17	49.24	74.00	-24.76	Vertical
7206.00	33.51	36.15	11.65	26.39	54.92	74.00	-19.08	Vertical
9608.00	31.80	38.01	14.14	25.45	58.50	74.00	-15.50	Vertical
12010.00	*					74.00		Vertical
14412.00	*					74.00		Vertical
4804.00	31.10	31.78	8.60	24.17	47.31	74.00	-26.69	Horizontal
7206.00	32.23	36.15	11.65	26.39	53.64	74.00	-20.36	Horizontal
9608.00	28.37	38.01	14.14	25.45	55.07	74.00	-18.93	Horizontal
12010.00	*					74.00		Horizontal
14412.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4804.00	19.02	31.78	8.60	24.17	35.23	54.00	-18.77	Vertical
7206.00	19.50	36.15	11.65	26.39	40.91	54.00	-13.09	Vertical
9608.00	19.90	38.01	14.14	25.45	46.60	54.00	-7.40	Vertical
12010.00	*					54.00		Vertical
14412.00	*					54.00		Vertical
4804.00	18.32	31.78	8.60	24.17	34.53	54.00	-19.47	Horizontal
7206.00	18.31	36.15	11.65	26.39	39.72	54.00	-14.28	Horizontal
9608.00	15.96	38.01	14.14	25.45	42.66	54.00	-11.34	Horizontal
12010.00	*					54.00		Horizontal
14412.00	*					54.00		Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. “*”, means this data is the too weak instrument of signal is unable to test.

Test channel:	Middle channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4882.00	33.48	31.85	8.66	24.10	49.89	74.00	-24.11	Vertical
7323.00	34.69	36.37	11.72	26.71	56.07	74.00	-17.93	Vertical
9764.00	31.22	38.35	14.25	25.36	58.46	74.00	-15.54	Vertical
12205.00	*					74.00		Vertical
14646.00	*					74.00		Vertical
4882.00	31.74	31.85	8.66	24.10	48.15	74.00	-25.85	Horizontal
7323.00	31.33	36.37	11.72	26.71	52.71	74.00	-21.29	Horizontal
9764.00	27.39	38.35	14.25	25.36	54.63	74.00	-19.37	Horizontal
12205.00	*					74.00		Horizontal
14646.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4882.00	19.47	31.85	8.66	24.10	35.88	54.00	-18.12	Vertical
7323.00	19.57	36.37	11.72	26.71	40.95	54.00	-13.05	Vertical
9764.00	18.78	38.35	14.25	25.36	46.02	54.00	-7.98	Vertical
12205.00	*					54.00		Vertical
14646.00	*					54.00		Vertical
4882.00	18.96	31.85	8.66	24.10	35.37	54.00	-18.63	Horizontal
7323.00	18.38	36.37	11.72	26.71	39.76	54.00	-14.24	Horizontal
9764.00	15.26	38.35	14.25	25.36	42.50	54.00	-11.50	Horizontal
12205.00	*					54.00		Horizontal
14646.00	*					54.00		Horizontal

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamp Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *“*” , means this data is the too weak instrument of signal is unable to test.*

Test channel:	Highest channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4960.00	32.29	31.93	8.73	24.03	48.92	74.00	-25.08	Vertical
7440.00	33.71	36.59	11.79	27.03	55.06	74.00	-18.94	Vertical
9920.00	28.75	38.81	14.38	25.26	56.68	74.00	-17.32	Vertical
12400.00	*					74.00		Vertical
14880.00	*					74.00		Vertical
4960.00	31.34	31.93	8.73	24.03	47.97	74.00	-26.03	Horizontal
7440.00	31.54	36.59	11.79	27.03	52.89	74.00	-21.11	Horizontal
9920.00	25.93	38.81	14.38	25.26	53.86	74.00	-20.14	Horizontal
12400.00	*					74.00		Horizontal
14880.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4960.00	18.28	31.93	8.73	24.03	34.91	54.00	-19.09	Vertical
7440.00	20.12	36.59	11.79	27.03	41.47	54.00	-12.53	Vertical
9920.00	16.00	38.81	14.38	25.26	43.93	54.00	-10.07	Vertical
12400.00	*					54.00		Vertical
14880.00	*					54.00		Vertical
4960.00	18.56	31.93	8.73	24.03	35.19	54.00	-18.81	Horizontal
7440.00	18.99	36.59	11.79	27.03	40.34	54.00	-13.66	Horizontal
9920.00	13.65	38.81	14.38	25.26	41.58	54.00	-12.42	Horizontal
12400.00	*					54.00		Horizontal
14880.00	*					54.00		Horizontal

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *“*” means this data is too weak instrument of signal is unable to test.*

Bandedge emissions

All of the restriction bands were tested, and only the data of worst case was exhibited.

Test channel:	Lowest channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	46.34	27.38	3.91	34.83	42.80	74.00	-31.20	Horizontal
2400.00	49.34	27.38	3.93	34.83	45.82	74.00	-28.18	Horizontal
2390.00	48.42	27.38	3.91	34.83	44.88	74.00	-29.12	Vertical
2400.00	50.32	27.38	3.93	34.83	46.80	74.00	-27.20	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	39.12	27.38	3.91	34.83	35.58	54.00	-18.42	Horizontal
2400.00	41.32	27.38	3.93	34.83	37.80	54.00	-16.20	Horizontal
2390.00	40.65	27.38	3.91	34.83	37.11	54.00	-16.89	Vertical
2400.00	43.35	27.38	3.93	34.83	39.83	54.00	-14.17	Vertical

Test channel:	Highest channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	47.67	27.32	3.99	34.86	44.12	74.00	-29.88	Horizontal
2500.00	45.15	27.35	4.00	34.87	41.63	74.00	-32.37	Horizontal
2483.50	48.65	27.32	3.99	34.86	45.10	74.00	-28.90	Vertical
2500.00	47.08	27.35	4.00	34.87	43.56	74.00	-30.44	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	37.35	27.32	3.99	34.86	33.80	54.00	-20.20	Horizontal
2500.00	33.65	27.35	4.00	34.87	30.13	54.00	-23.87	Horizontal
2483.50	39.63	27.32	3.99	34.86	36.08	54.00	-17.92	Vertical
2500.00	35.12	27.35	4.00	34.87	31.60	54.00	-22.40	Vertical

Remark:

Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

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