

FCC & IC REPORT

Applicant: Binatone Electronics International Limited

Address of Applicant: Floor 23A, 9 Des Voeux Road West, Sheung Wan, Hong Kong

Equipment Under Test (EUT)

Product Name: DECT Phone

Model No.: Smart 63, KS7106

FCC ID: VLJ-SMART63

Canada IC: 4522A-SMART63

Applicable standards: FCC CFR Title 47 Part 15 Subpart B
ICES - 003 Issue 5, August 2012

Date of sample receipt: 14 Oct., 2014

Date of Test: 14 Oct., 2014 to 04 Nov., 2014

Date of report issued: 05 Nov., 2014

Test Result: PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Bruce Zhang
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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2 Version

Version No.	Date	Description
00	05 Nov., 2014	Original

Tested By:

Abomb Yang

Date:

05 Nov., 2014

Test Engineer

Reviewed By:

Wimer Zhang

Date:

05 Nov., 2014

Project Engineer

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4 Test Summary

Test Item	Section in CFR 47/ ICES 003	Result
Conducted Emission	Part15.107/ Section 6.1	Pass
Radiated Emission	Part15.109/ Section 6.2	Pass

Pass: The EUT complies with the essential requirements in the standard.

5 General Information

5.1 Client Information

Applicant:	Binatone Electronics International Limited
Address of Applicant:	Floor 23A, 9 Des Voeux Road West, Sheung Wan, Hong Kong
Manufacturer:	ShenZhen Concox Information Technology Co., Ltd
Address of Manufacturer:	4F, Building B, Gaoxinqi Industrial Park, Liuxian 1st Road, District 67, Bao'an, Shenzhen, Guangdong, China
Factory:	Huizhou Goldenchip Electronics Co., Ltd
Address of Factory:	No. 12 Factory, Songyang Road, Zhongkai Hi-tech Development Zone, Huizhou City, Guangdong Province, China

5.2 General Description of E.U.T.

Product Name:	DECT Phone
Model No.:	Smart 63, KS7106
Power supply:	Rechargeable Li-ion Battery DC3.7V-1100mAh
AC adapter :	Model:MLF-A00060501000U0021 Input:100-240VAC,50/60Hz 0.18A Output:5.0VDC MAX1A
Remark:	The Model: Smart 63, KS7106 were identical inside, the electrical circuit design, layout, components used and internal wiring, with only difference being model name.

5.3 Test Mode

Operating mode	Detail description
PC mode	Keep the EUT in Downloading mode(Worst case)
Charging & Playing mode	Keep the EUT in Charging & Playing mode
Charging & FM mode	Keep the EUT in Charging & FM mode
The sample was placed 0.8m above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.	

5.4 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC ID/DoC
DELL	PC	OPTIPLEX745	N/A	DoC
DELL	MONITOR	E178FPC	N/A	DoC
DELL	KEYBOARD	SK-8115	N/A	DoC
DELL	MOUSE	MOC5UO	N/A	DoC
HP	Printer	CB495A	05257893	DoC
MERCURY	Wireless router	MW150R	12922104015	FCC ID

5.5 Laboratory Facility

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

● FCC - Registration No.: 817957

Shenzhen Zhongjian Nanfang Testing Co., Ltd. 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 out files. Registration 817957, February 27, 2012.

● IC - Registration No.: 10106A-1

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● CNAS - Registration No.: CNAS L6048

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

5.6 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.
Address: No.B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,
Bao'an District, Shenzhen, Guangdong, China
Tel: 0755-23118282
Fax: 0755-23116366

5.7 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	Aug 23 2014	Aug 22 2017
2	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	CCIS0005	Apr 19 2014	Apr 19 2015
3	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	CCIS0006	Apr 19 2014	Apr 19 2015
4	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
5	Coaxial Cable	CCIS	N/A	CCIS0016	Apr. 01 2014	Mar. 31 2015
6	Coaxial Cable	CCIS	N/A	CCIS0017	Apr. 01 2014	Mar. 31 2015
7	Coaxial cable	CCIS	N/A	CCIS0018	Apr. 01 2014	Mar. 31 2015
8	Coaxial Cable	CCIS	N/A	CCIS0019	Apr. 01 2014	Mar. 31 2015
9	Coaxial Cable	CCIS	N/A	CCIS0087	Apr. 01 2014	Mar. 31 2015
10	Amplifier(10kHz-1.3GHz)	HP	8447D	CCIS0003	Apr. 01 2014	Mar. 31 2015
11	Amplifier(1GHz-18GHz)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	June 09 2014	June 08 2015
12	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	Apr. 01 2014	Mar. 31 2015
13	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 30 2014	Mar. 29 2015
14	Printer	HP	HP LaserJet P1007	N/A	N/A	N/A
15	Positioning Controller	UC	UC3000	CCIS0015	N/A	N/A
16	Spectrum analyzer 9k-30GHz	Rohde & Schwarz	FSP	CCIS0023	Apr 19 2014	Apr 19 2015
17	EMI Test Receiver	Rohde & Schwarz	ESPI	CCIS0022	Apr 01 2014	Mar. 31 2015
18	Loop antenna	Laplace instrument	RF300	EMC0701	Apr 01 2014	Mar. 31 2015
19	Universal radio communication tester	Rhode & Schwarz	CMU200	CCIS0069	May. 29 2014	May. 28 2015
20	Signal Analyzer	Rohde & Schwarz	FSIQ3	CCIS0088	Apr 19 2014	Apr 19 2015

Conducted Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Shielding Room	ZhongShuo Electron	11.0(L)x4.0(W)x3.0(H)	CCIS0061	Oct 10 2012	Oct 09 2015
2	EMI Test Receiver	Rohde & Schwarz	ESCI	CCIS0002	Apr 10 2014	Apr 09 2015
3	LISN	CHASE	MN2050D	CCIS0074	Apr 10 2014	Apr 10 2015
4	Coaxial Cable	CCIS	N/A	CCIS0086	Apr. 01 2014	Mar. 31 2015

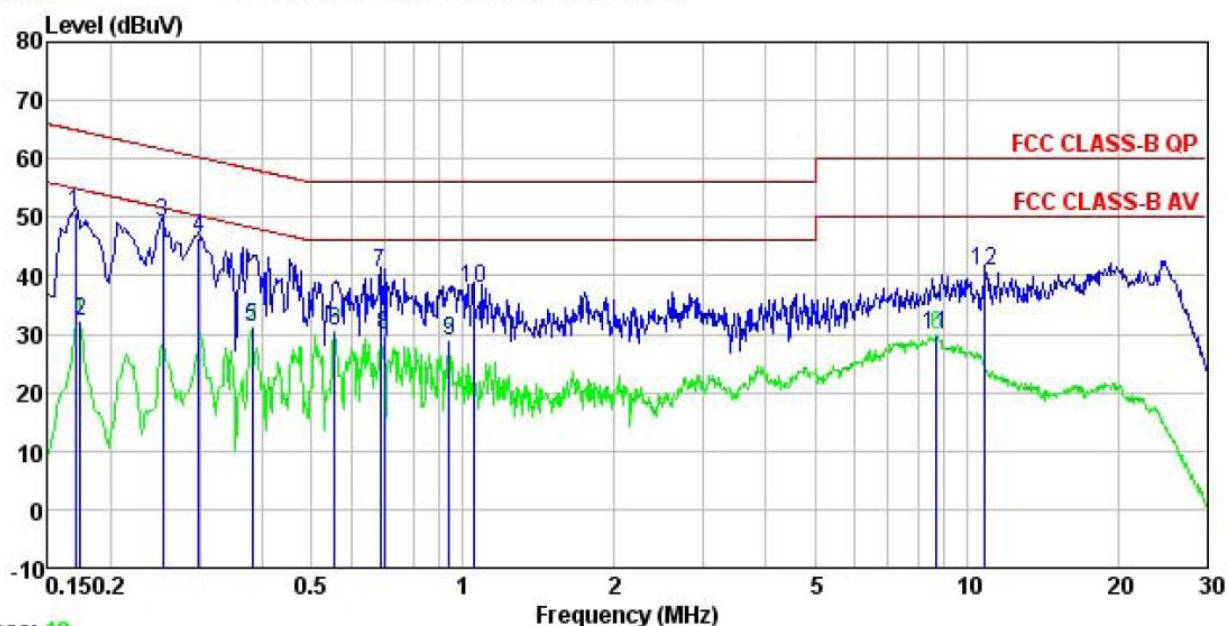
6 Test results and Measurement Data

6.1 Conducted Emission

Test Requirement:	FCC Part15 B Section 15.107/ ICES 003 section 6.1																		
Test Method:	ANSI C63.4:2003																		
Test Frequency Range:	150kHz to 30MHz																		
Class / Severity:	Class B																		
Receiver setup:	RBW=9kHz, VBW=30kHz																		
Limit:	<table><tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBμV)</th></tr><tr><th>Quasi-peak</th><th>Average</th></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr><tr><td>0.5-5</td><td>56</td><td>46</td></tr><tr><td>0.5-30</td><td>60</td><td>50</td></tr></table>					Frequency range (MHz)	Limit (dBμV)		Quasi-peak	Average	0.15-0.5	66 to 56*	56 to 46*	0.5-5	56	46	0.5-30	60	50
Frequency range (MHz)	Limit (dBμV)																		
	Quasi-peak	Average																	
0.15-0.5	66 to 56*	56 to 46*																	
0.5-5	56	46																	
0.5-30	60	50																	
Test setup:	Reference Plane Test table/Insulation plane <i>Remark: E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</i>																		
Test procedure	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide 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 refers 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 environment:	Temp.:	23 °C	Humid.:	56%	Press.: 1 01kPa														
Measurement Record:	Uncertainty: 3.28dB																		
Test Instruments:	Refer to section 5.7 for details																		
Test mode:	Refer to section 5.3 for details																		
Test results:	Passed																		

Measurement data:

Line:

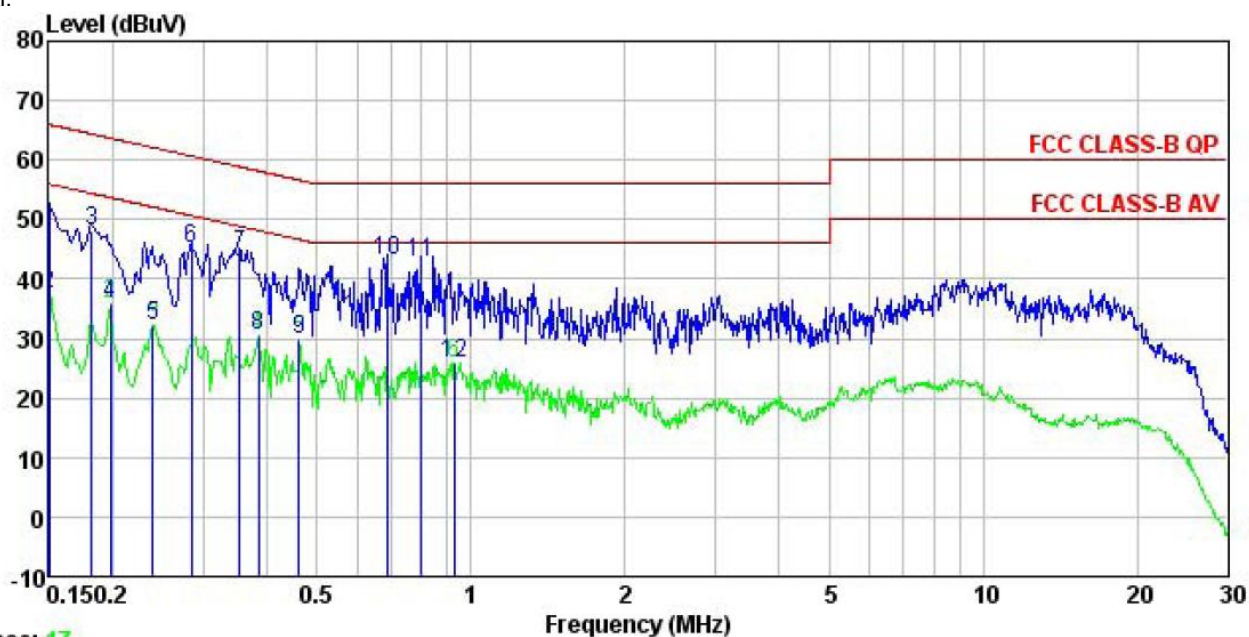


Trace: 19

Site : CCIS Shielding Room
 Condition : FCC CLASS-B QP LISN LINE
 Job. no : 848RF
 EUT : DECT Phone
 Model : Smart 63
 Test Mode : PC mode
 Power Rating : AC 120V/60Hz
 Environment : Temp: 23 °C Humi:56% Atmos:101KPa
 Test Engineer: A-bomb

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.170	50.53	0.27	0.00	50.80	64.94	-14.14	QP
2	0.174	31.92	0.27	0.00	32.19	54.77	-22.58	Average
3	0.253	48.85	0.27	0.00	49.12	61.64	-12.52	QP
4	0.299	46.07	0.26	0.00	46.33	60.28	-13.95	QP
5	0.381	30.97	0.28	0.00	31.25	48.25	-17.00	Average
6	0.555	30.30	0.27	0.00	30.57	46.00	-15.43	Average
7	0.686	40.33	0.22	0.00	40.55	56.00	-15.45	QP
8	0.697	29.72	0.22	0.00	29.94	46.00	-16.06	Average
9	0.938	28.63	0.24	0.00	28.87	46.00	-17.13	Average
10	1.049	37.64	0.25	0.00	37.89	56.00	-18.11	QP
11	8.729	29.48	0.31	0.00	29.79	50.00	-20.21	Average
12	10.905	40.37	0.31	0.00	40.68	60.00	-19.32	QP

Neutral:



Site : CCIS Shielding Room
 Condition : FCC CLASS-B QP LISN NEUTRAL
 Job. no : 848RF
 EUT : DECT Phone
 Model : Smart 63
 Test Mode : PC mode
 Power Rating : AC 120V/60Hz
 Environment : Temp: 23 °C Humi:56% Atmos:101KPa
 Test Engineer: A-bomb

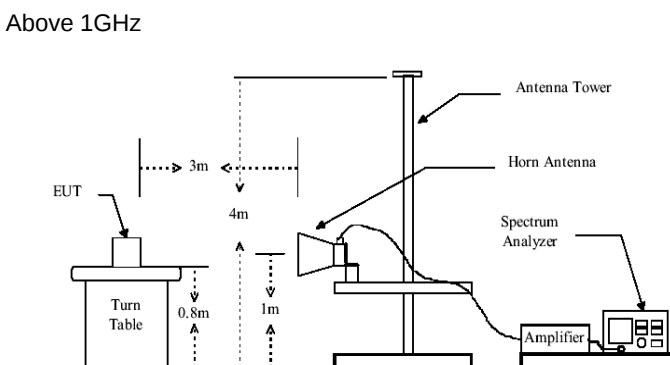
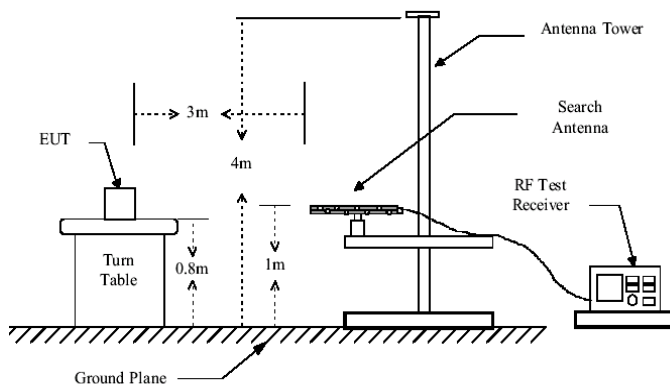
	Read	LISN	Cable	Limit	Over	
Freq	Level	Factor	Loss	Level	Line	Limit Remark
-----	-----	-----	-----	-----	-----	-----
MHz	dBuV	dB	dB	dBuV	dBuV	dB
1	0.150	51.41	0.25	0.00	51.66	66.00 -14.34 QP
2	0.150	37.40	0.25	0.00	37.65	56.00 -18.35 Average
3	0.182	47.83	0.25	0.00	48.08	64.42 -16.34 QP
4	0.198	35.55	0.25	0.00	35.80	53.71 -17.91 Average
5	0.239	31.92	0.25	0.00	32.17	52.13 -19.96 Average
6	0.285	44.79	0.26	0.00	45.05	60.68 -15.63 QP
7	0.354	43.92	0.25	0.00	44.17	58.87 -14.70 QP
8	0.385	30.20	0.25	0.00	30.45	48.17 -17.72 Average
9	0.461	29.42	0.28	0.00	29.70	46.67 -16.97 Average
10	0.686	43.09	0.19	0.00	43.28	56.00 -12.72 QP
11	0.796	42.58	0.19	0.00	42.77	56.00 -13.23 QP
12	0.928	25.79	0.21	0.00	26.00	46.00 -20.00 Average

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.

6.2 Radiated Emission

Test Requirement:	FCC Part15 B Section 15.109/ ICES 003 section 6.2			
Test Method:	ANSI C63.4:2003			
Test Frequency Range:	30MHz to 6000MHz			
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)			
Receiver setup:	Frequency	Detector	RBW	VBW
	30MHz-1GHz	Quasi-peak	120 kHz	300KHz
	Above 1GHz	Peak	1MHz	3MHz
Limit:	Frequency	Limit (dBuV/m @3m)	Remark	
	30MHz-88MHz	40.0	Quasi-peak Value	
	88MHz-216MHz	43.5	Quasi-peak Value	
Test setup:	216MHz-960MHz	46.0	Quasi-peak Value	
	960MHz-1GHz	54.0	Quasi-peak Value	
	Above 1GHz	54.0	Average Value	
		74.0	Peak Value	

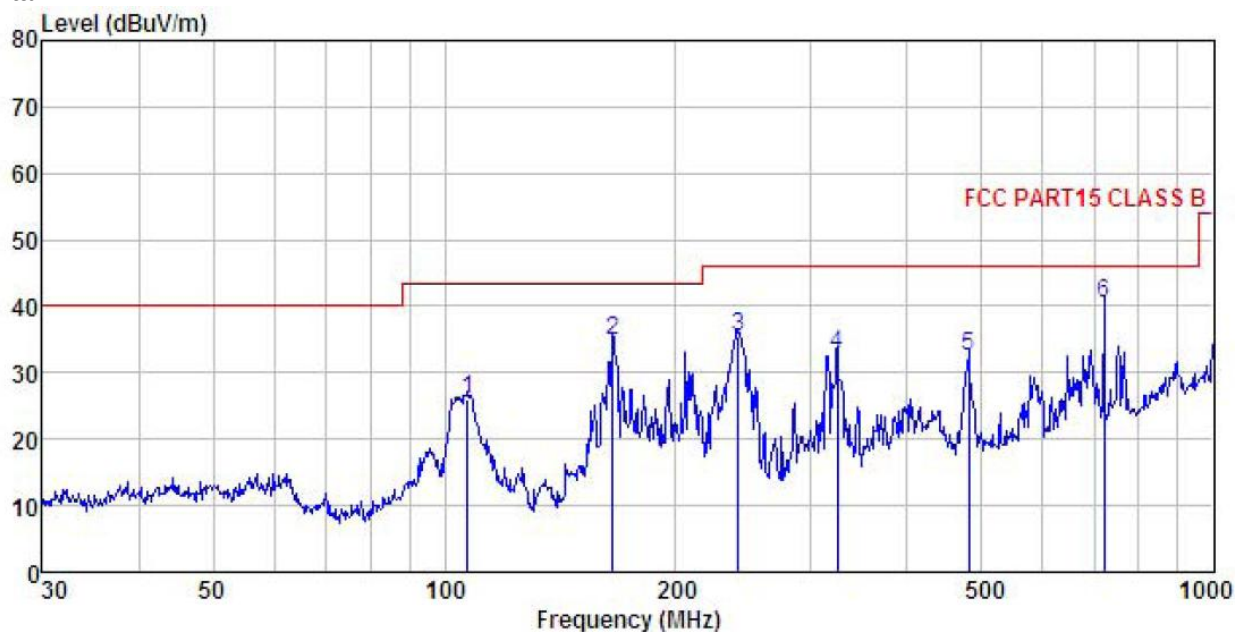


Test Procedure:	1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was 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 rotatable 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. 6. 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 environment:	Temp.:	25 °C	Humid.:	55%	Press.:	1 01kPa
Measurement Record:	Uncertainty: 4.88dB					
Test Instruments:	Refer to section 5.7 for details					
Test mode:	Refer to section 5.3 for details					
Test results:	Passed					

Measurement Data

Below 1GHz

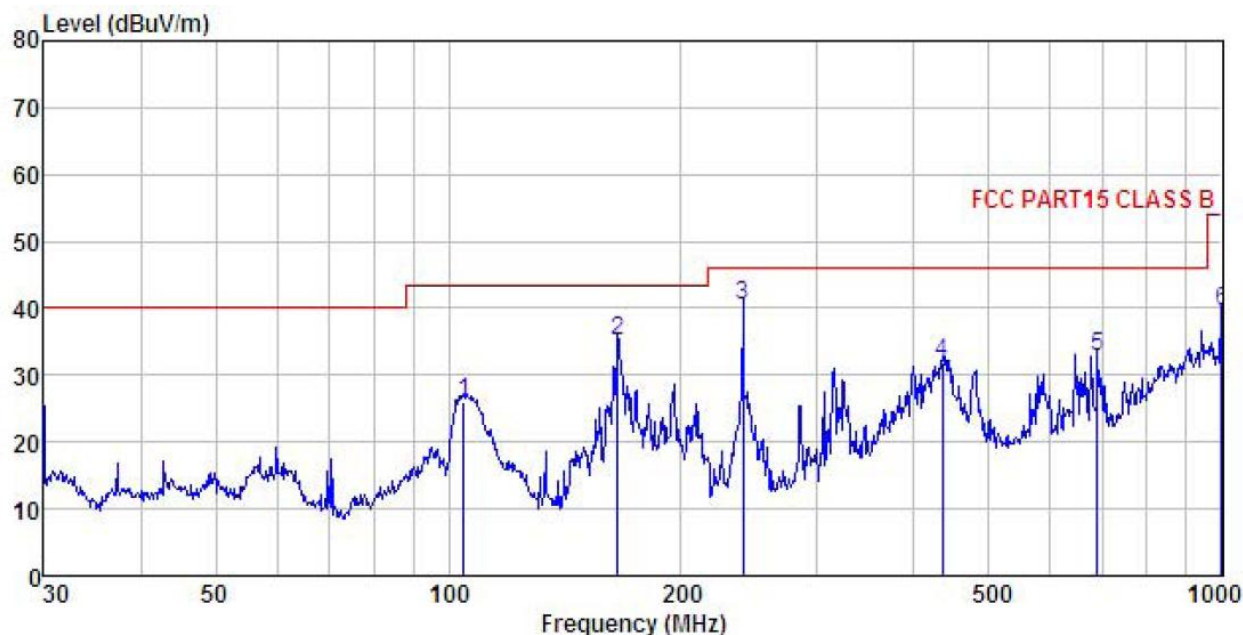
Horizontal:



Site : 3m chamber
 Condition : FCC PART15 CLASS B 3m VULB9163(30M1G) HORIZONTAL
 EUT : DECT Phone
 Model : Smart 63
 Test mode : PC Mode
 Power Rating : AC120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: A-bomb
 REMARK :

	Freq	Read Level	Antenna Factor	Cable Loss	Preamplifier	Level	Limit	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	107.134	42.00	12.49	1.02	29.48	26.03	43.50	-17.47	QP
2	165.487	53.90	8.82	1.34	29.09	34.97	43.50	-8.53	QP
3	240.830	50.40	12.09	1.58	28.59	35.48	46.00	-10.52	QP
4	324.456	45.95	13.53	1.86	28.51	32.83	46.00	-13.17	QP
5	480.528	42.92	16.07	2.35	28.92	32.42	46.00	-13.58	QP
6	721.726	47.01	19.10	2.97	28.58	40.50	46.00	-5.50	QP

Vertical:

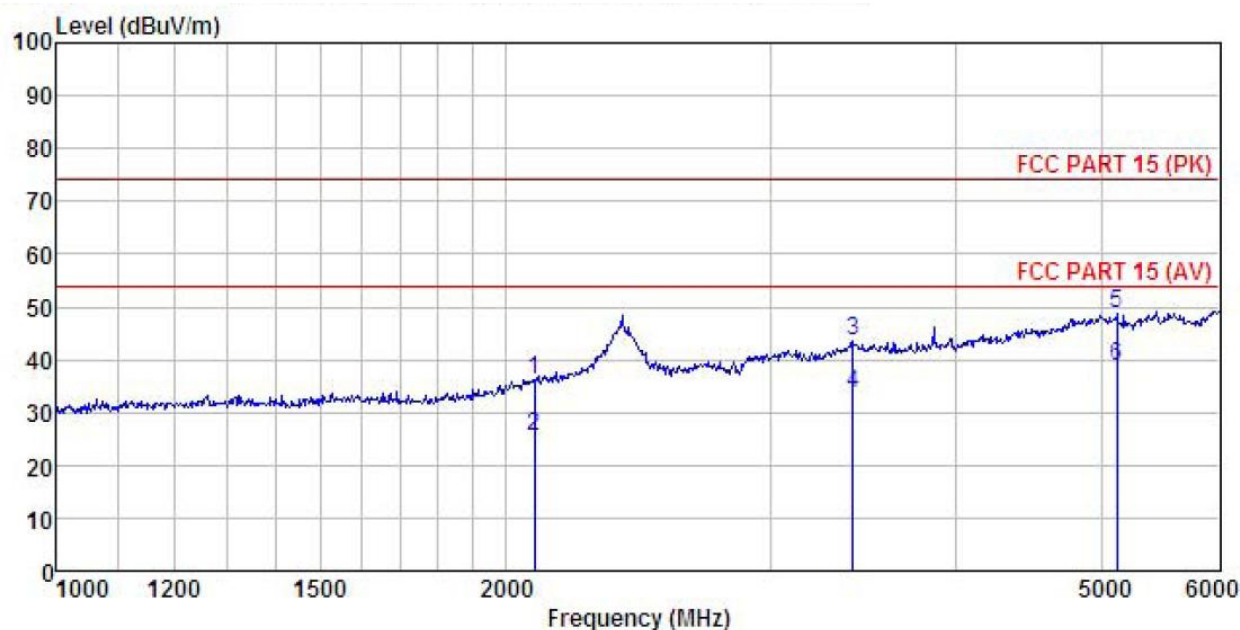


Site : 3m chamber
 Condition : FCC PART15 CLASS B 3m VULB9163(30M1G) VERTICAL
 EUT : DECT Phone
 Model : Smart 63
 Test mode : PC Mode
 Power Rating : AC120V/60Hz
 Environment : Temp:25.5'C Humi:55%
 Test Engineer: A-bomb
 REMARK :

	Freq	ReadAntenna	Cable	Preamp		Limit	Over	
	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	104.536	41.84	12.73	1.00	29.50	26.07	43.50	-17.43 QP
2	165.487	54.01	8.82	1.34	29.09	35.08	43.50	-8.42 QP
3	239.987	55.39	12.09	1.58	28.59	40.47	46.00	-5.53 QP
4	435.590	42.98	15.54	2.21	28.85	31.88	46.00	-14.12 QP
5	689.565	39.70	18.78	2.89	28.69	32.68	46.00	-13.32 QP
6	1000.000	41.79	21.74	3.54	27.43	39.64	54.00	-14.36 QP

Above 1GHz

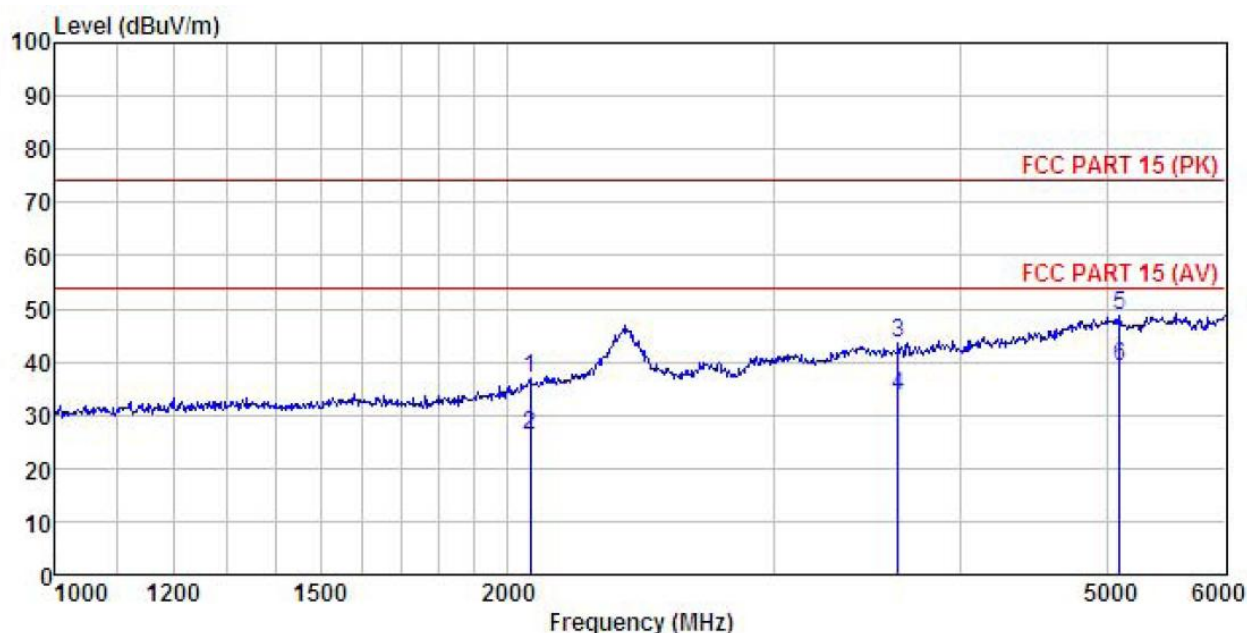
Horizontal:



Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
 EUT : DECT Phone
 Model : Smart 63
 Test mode : PC Mode
 Power Rating : AC120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: A-bomb
 REMARK :

	Freq	Read	Antenna	Cable	Preamp	Level	Limit	Over	
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2088.431	44.84	26.97	5.01	40.56	36.26	74.00	-37.74	Peak
2	2088.431	34.17	26.97	5.01	40.56	25.59	54.00	-28.41	Average
3	3412.193	47.58	28.53	6.41	38.96	43.56	74.00	-30.44	Peak
4	3412.193	37.58	28.53	6.41	38.96	33.56	54.00	-20.44	Average
5	5124.765	47.59	32.10	9.13	40.05	48.77	74.00	-25.23	Peak
6	5124.765	37.63	32.10	9.13	40.05	38.81	54.00	-15.19	Average

Vertical:



Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
 EUT : DECT Phone
 Model : Smart 63
 Test mode : PC Mode
 Power Rating : AC120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: A-bomb
 REMARK :

	ReadAntenna	Cable	Preamp		Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit
-----MHz	-----dBuV	-----dB/m	-----dB	-----dB	-----dBuV/m	-----dBuV/m	-----dB
1	2069.805	45.98	26.71	4.97	40.62	37.04	74.00
2	2069.805	35.32	26.71	4.97	40.62	26.38	54.00
3	3633.029	48.56	29.19	6.34	40.37	43.72	74.00
4	3633.029	38.34	29.19	6.34	40.37	33.50	54.00
5	5097.292	47.62	32.11	9.13	40.04	48.82	74.00
6	5097.292	37.76	32.11	9.13	40.04	38.96	54.00