

# TEST REPORT

**Applicant:** ABBA INNOVATION S.A.S

**Address of Applicant:** Calle 76 No 52-40 Local 1, Alto Prado, Barranquilla, Colombia

**Equipment Under Test (EUT)**

Product Name: GSM MOBILE PHONE

Model No.: A37

Trade mark: ABBA ONE

**FCC ID:** Z87A37

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart B:2010

**Date of sample receipt:** Nov. 1, 2011

**Date of Test:** Nov. 1-14, 2011

**Date of report issued:** Nov. 25, 2011

**Test Result :** PASS \*

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

Authorized Signature:



Stephen Guo  
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 GTS 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. Any mention of GTS International Electrical Approvals or testing done by GTS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by GTS International Electrical Approvals in writing.

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## 2 Version

Version No.	Date	Description
00	Nov. 25, 2011	Original

**Prepared By:**

*Collin He*

**Date:**

Nov. 25, 2011

**Project Engineer**

**Check By:**

*Hans. Hu*

**Date:**

Nov. 25, 2011

**Reviewer**

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## 4 Test Summary

Test Item	Section in CFR 47	Result
Conducted Emission	Part15.107	PASS
Radiated Emissions	Part15.109	PASS

*PASS: The EUT complies with the essential requirements in the standard.*

## 5 General Information

### 5.1 Client Information

Applicant:	ABBA INNOVATION S.A.S
Address of Applicant:	Calle 76 No 52-40 Local 1, Alto Prado, Barranquilla, Colombia
Manufacturer	SHENZHEN KENXINDA TECHNOLOGY CO.,LTD BAO'AN BRANCH
Address of Manufacturer	1-6 FLOOR,NO.105 WORK SHOP&1-5 FLOOR,NO.104 WORKSHOP,XINWEIHUANING ROAD,DALANG COMMUNITY, DALANGSTREET,BAO'AN DISTRICT,SHENZHEN, P.R.CHINA

### 5.2 General Description of E.U.T.

Product Name:	GSM MOBILE PHONE
Model No.:	A37
Trade mark:	ABBA ONE
AC adapter:	Model No:HWT-2.5W-5050G Input: AC 100-240V 50/60Hz Output: DC 5V 500mA
Power supply:	Li-ion Battery Voltage: DC 3.7V 900mAh

### 5.3 Test mode and voltage

<b>Test mode:</b>	
PC mode	Keep the EUT in exchange data with PC

## 5.4 Test Facility

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

● **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)**

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

Tel: 0755-27798480

Fax: 0755-27798960

## 5.6 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC ID/DoC
HP	Printer	CB495A	05257893	DoC
DELL	PC	OPTIPLEX745	GTS312	DoC
DELL	MONITOR	E178FPC	N/A	DoC
DELL	KEYBOARD	SK-8115	N/A	DoC
DELL	MOUSE	MOC5UO	N/A	DoC

## 5.7 Deviation from Standards

Biconical, log.per. antenna and horn antenna were used instead of dipole antenna.

Semi-anechoic Chamber was used as alternation of open air test sites, and all test suites were performed with radiated method in it.

## 5.8 Abnormalities from Standard Conditions

None.

## 5.9 Other Information Requested by the Customer

None.

## 6 Test Instruments list

Conducted Emission						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0(H)	GTS252	Jul. 04 2011	Jul. 03 2012
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	Jul. 04 2011	Jul. 03 2012
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	Jul. 04 2011	Jul. 03 2012
4	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	Jul. 04 2011	Jul. 03 2012
5	Coaxial Cable	GTS	N/A	GTS227	Apr. 01 2011	Mar. 31 2012
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

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	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	Mar. 30 2011	Mar. 29 2012
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jul. 04 2011	Jul. 03 2012
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Feb. 26 2011	Feb. 25 2012
5	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
6	Coaxial Cable	GTS	N/A	GTS213	Apr. 01 2011	Mar. 31 2012
7	Coaxial Cable	GTS	N/A	GTS211	Apr. 01 2011	Mar. 31 2012
8	Coaxial cable	GTS	N/A	GTS210	Apr. 01 2011	Mar. 31 2012
9	Coaxial Cable	GTS	N/A	GTS212	Apr. 01 2011	Mar. 31 2012
10	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jul. 04 2011	Jul. 03 2012

## 7 Test results and Measurement Data

### 7.1 Conducted Emissions

Test Requirement:	FCC Part15 B Section 15.107														
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>5-30</td><td>60</td><td>50</td></tr></table> <p>Decreases with the logarithm of the frequency.</p>	Frequency range (MHz)	Limit (dBμV)		Quasi-peak	Average	0.15-0.5	66 to 56*	56 to 46*	0.5-5	56	46	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													
5-30	60	50													
Test procedure	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. 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). 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 setup:	<div><div><div>Reference Plane</div><div><div><div>LISN</div><div>AUX Equipment</div><div>E.U.T</div></div><div>Test table/Insulation plane</div></div><div><div><div>LISN</div><div>Filter</div><div>EMI Receiver</div></div><div>AC power</div></div></div><div><div>40cm</div><div>80cm</div></div></div> <p>Remark E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p>														
Test environment:	Temp.: 25 °C Humid.: 52% Press.: 1 012mbar														
Measurement Record:	Uncertainty: ± 3.45dB														
Test Instruments:	Refer to section 6 for details														
Test mode:	Refer to section 5.3 for details														
Test results:	Passed														

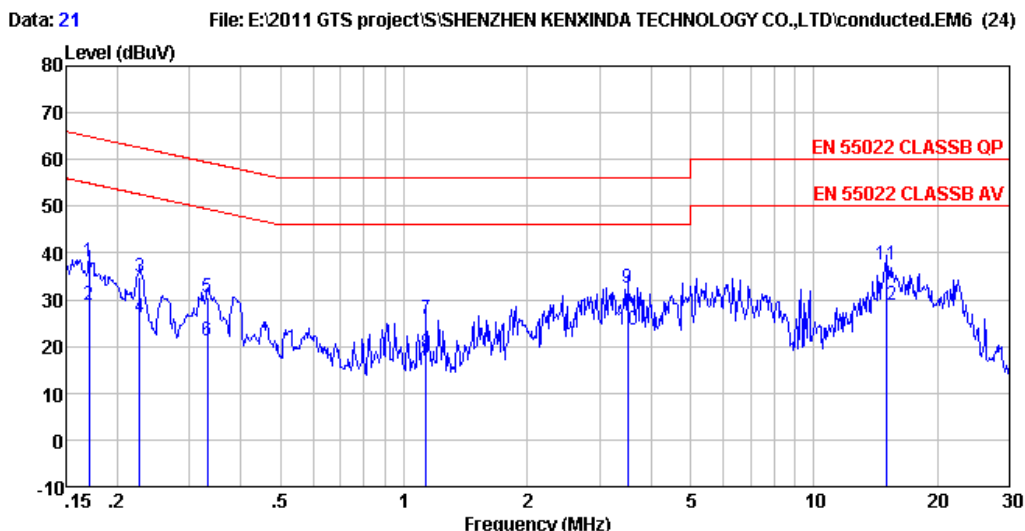
### Measurement Data



An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Line:

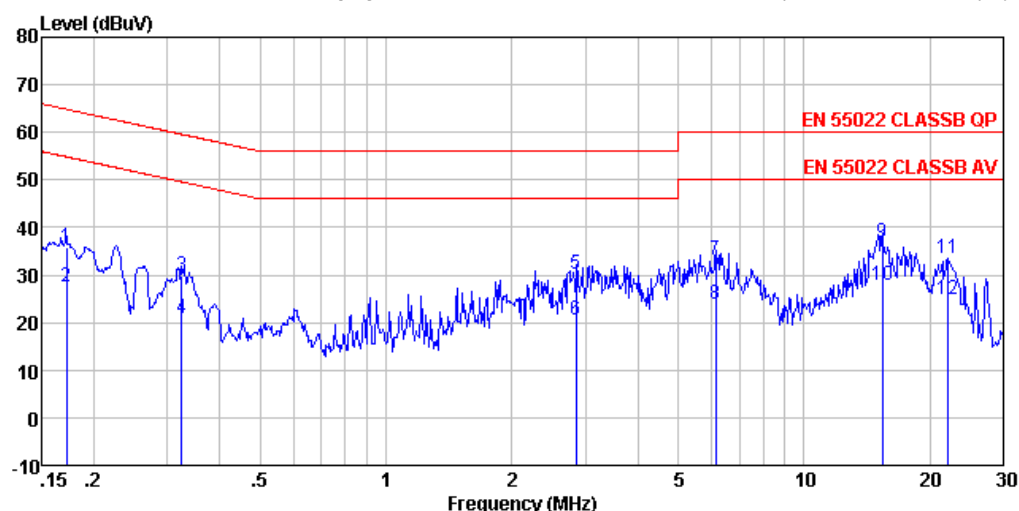


Condition : EN 55022 CLASSB QP LISN(2011) LINE  
 Job No : 885RF  
 Test mode : PC mode  
 Test engineer: Collin

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.170	37.26	0.67	0.10	38.03	64.94	-26.91	QP
2	0.170	28.22	0.67	0.10	28.99	54.94	-25.95	Average
3	0.227	34.19	0.64	0.10	34.93	62.57	-27.64	QP
4	0.227	25.36	0.64	0.10	26.10	52.57	-26.47	Average
5	0.332	29.78	0.60	0.10	30.48	59.40	-28.92	QP
6	0.332	20.49	0.60	0.10	21.19	49.40	-28.21	Average
7	1.135	25.39	0.46	0.10	25.95	56.00	-30.05	QP
8	1.135	18.07	0.46	0.10	18.63	46.00	-27.37	Average
9	3.509	32.03	0.34	0.10	32.47	56.00	-23.53	QP
10	3.509	23.16	0.34	0.10	23.60	46.00	-22.40	Average
11	14.986	37.12	0.18	0.20	37.50	60.00	-22.50	QP
12	14.986	28.60	0.18	0.20	28.98	50.00	-21.02	Average

Neutral:

Data: 22 File: E:\2011 GTS project\SHENZHEN KENXINDA TECHNOLOGY CO.,LTD\conducted.EM6 (24)



Condition : EN 55022 CLASSB QP LISN(2011) NEUTRAL  
Job No : 885RF  
Test mode : PC mode  
Test engineer: Collin

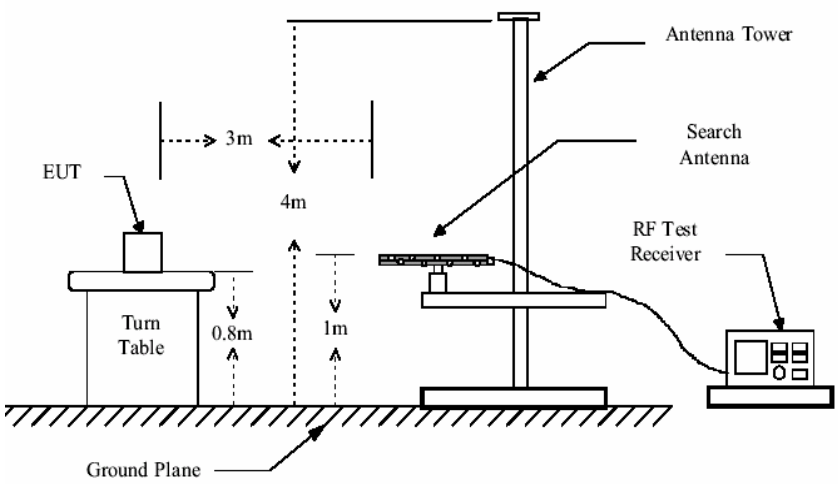
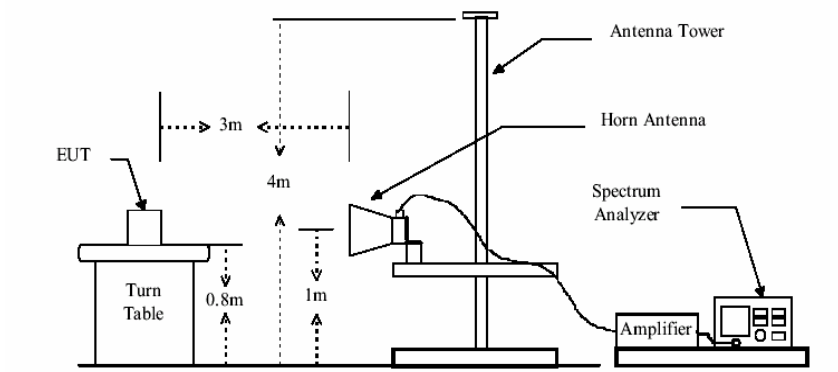
	Freq	Read	LISN	Cable	Level	Limit	Over	
	MHz	Level	Factor	Loss	dBuV	Line	Limit	Remark
		dBuV	dB	dB		dBuV	dB	
1	0.172	35.22	0.67	0.10	35.99	64.86	-28.87	QP
2	0.172	26.84	0.67	0.10	27.61	54.86	-27.25	Average
3	0.325	29.03	0.60	0.10	29.73	59.57	-29.84	QP
4	0.325	20.18	0.60	0.10	20.88	49.57	-28.69	Average
5	2.854	29.59	0.36	0.10	30.05	56.00	-25.95	QP
6	2.854	20.18	0.36	0.10	20.64	46.00	-25.36	Average
7	6.153	32.68	0.28	0.12	33.08	60.00	-26.92	QP
8	6.153	23.56	0.28	0.12	23.96	50.00	-26.04	Average
9	15.388	36.46	0.17	0.20	36.83	60.00	-23.17	QP
10	15.388	27.55	0.17	0.20	27.92	50.00	-22.08	Average
11	22.180	33.29	0.13	0.21	33.63	60.00	-26.37	QP
12	22.180	24.56	0.13	0.21	24.90	50.00	-25.10	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.

## 7.2 Radiated Emission

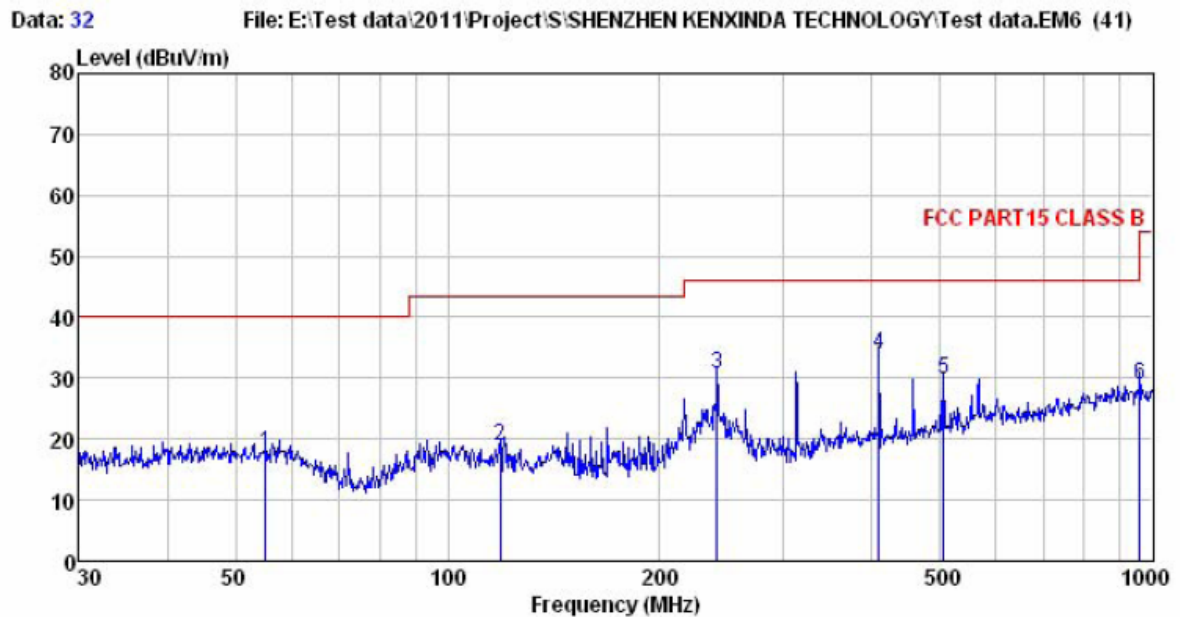
Test Requirement:	FCC Part15 B Section 15.109				
Test Method:	ANSI C63.4:2009				
Test Frequency Range:	30MHz to 6000MHz				
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		Average	1MHz	10Hz	Average Value
Limit:					
	Frequency		Limit (dBuV/m @3m)		Remark
	30MHz-88MHz		40.0		Quasi-peak Value
	88MHz-216MHz		43.5		Quasi-peak Value
	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:	<p>a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.</p> <p>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.</p> <p>c. 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.</p> <p>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.</p> <p>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>f. 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.</p>				

<p>Test setup:</p>	<p>Below 1GHz</p>  <p>Above 1GHz</p> 
<p>Test environment:</p>	<p>Temp.: 25 °C    Humid.: 52%    Press.: 1 012mbar</p>
<p>Measurement Record:</p>	<p>Uncertainty: ± 4.5dB</p>
<p>Test Instruments:</p>	<p>Refer to section 6 for details</p>
<p>Test mode:</p>	<p>Refer to section 5.3 for details</p>
<p>Test results:</p>	<p>Passed</p>

## Measurement Data

Below 1 G

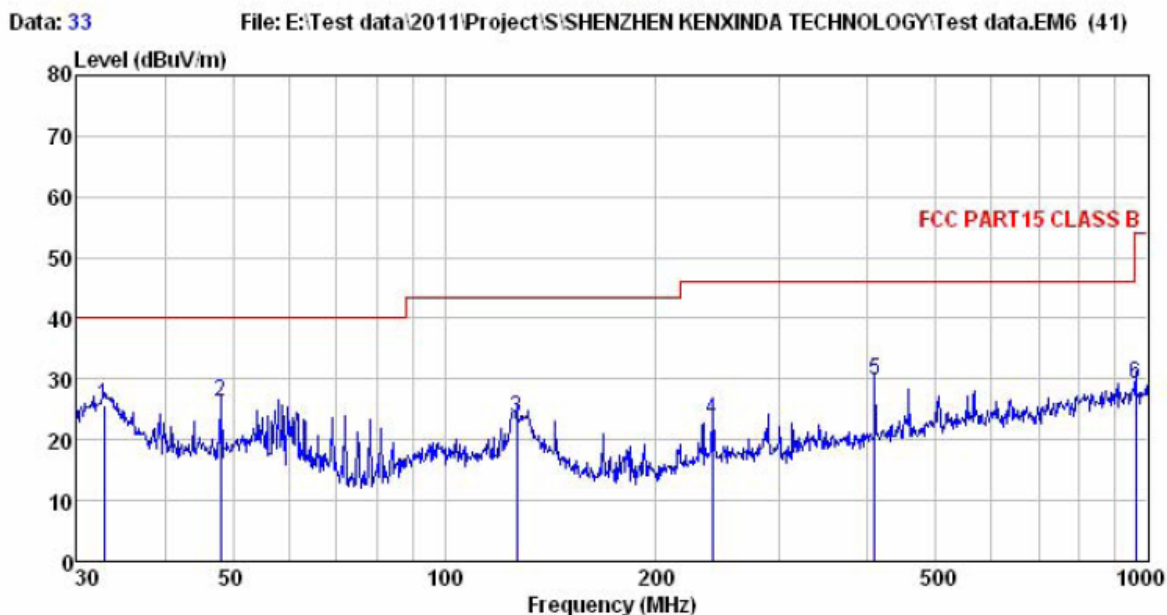
Horizontal:



Site : 3m chamber  
 Condition : FCC PART15 CLASS B 3m VULB9163 HORIZONTAL  
 Job No. : 885RF  
 Test mode : PC mode  
 Test Engineer: Collin

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	55.22	36.34	13.03	0.34	31.99	17.72	40.00	-22.28	QP
2	118.60	39.59	10.69	0.53	31.81	19.00	43.50	-24.50	QP
3	240.83	50.13	12.09	0.88	32.28	30.82	46.00	-15.18	QP
4	408.95	49.77	15.27	1.27	32.26	34.05	46.00	-11.95	QP
5	504.71	43.36	16.68	1.48	31.59	29.93	46.00	-16.07	QP
6	958.79	36.66	21.49	2.23	31.50	28.88	46.00	-17.12	QP

Vertical:

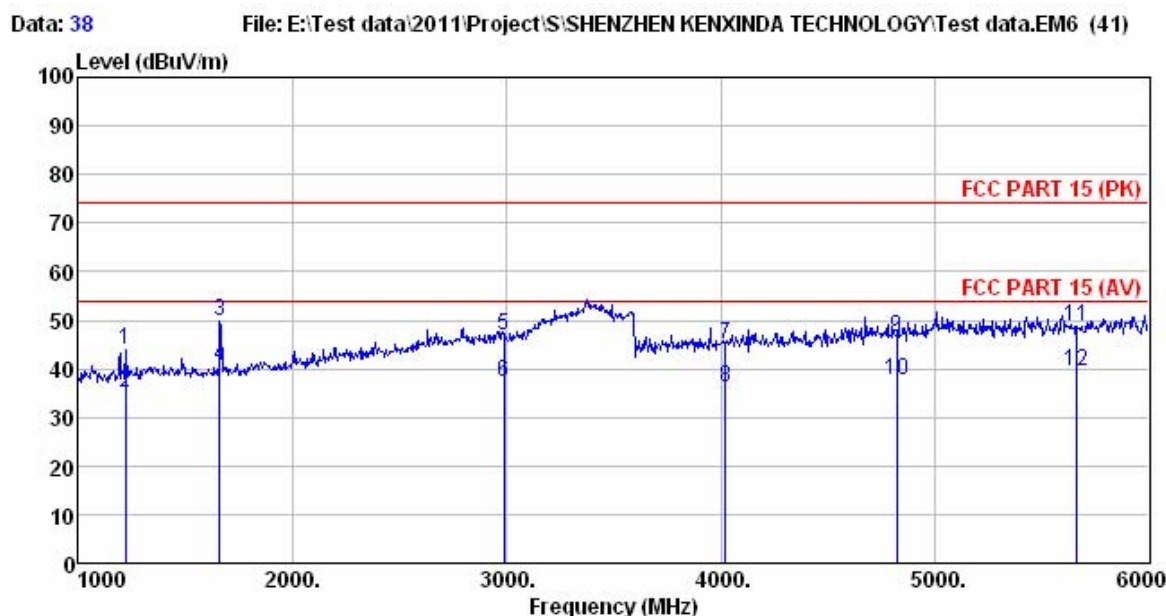


Site : 3m chamber  
 Condition : FCC PART15 CLASS B 3m VULB9163 VERTICAL  
 Job No. : 885RF  
 Test mode : PC mode  
 Test Engineer: Collin

	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	32.75	45.50	12.31	0.22	32.23	25.80	40.00	-14.20	QP
2	47.99	44.65	13.36	0.31	32.05	26.27	40.00	-13.73	QP
3	126.77	45.45	9.41	0.55	31.84	23.57	43.50	-19.93	QP
4	239.99	42.72	12.09	0.87	32.28	23.40	46.00	-22.60	QP
5	408.95	45.46	15.27	1.27	32.26	29.74	46.00	-16.26	QP
6	962.16	37.06	21.49	2.23	31.50	29.28	54.00	-24.72	QP

Above 1 G

Horizontal:

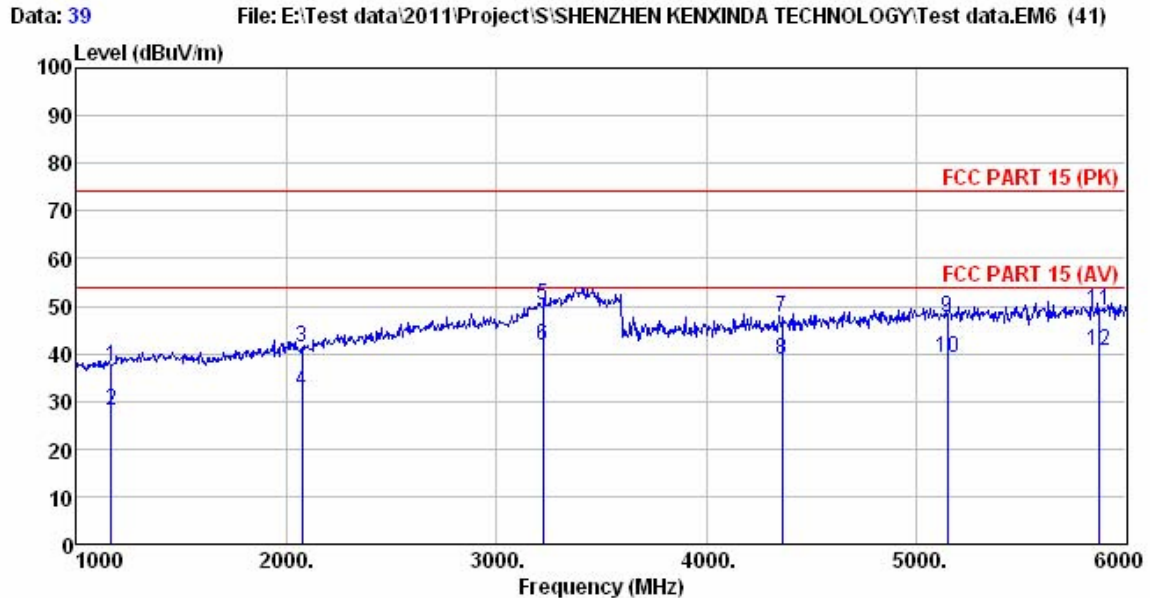


Site : 3m chamber  
 Condition : FCC PART 15 (PK) 3m BBHA9120(>1GHZ) HORIZONTAL  
 Job No. : 885RF  
 Test mode : PC mode  
 Test Engineer: Collin

	Read	Antenna	Cable	Preamp		Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1220.00	50.44	25.26	2.63	34.56	43.77	74.00	-30.23 Peak
2	1220.00	41.88	25.26	2.63	34.56	35.21	54.00	-18.79 Average
3	1660.00	56.24	24.90	3.18	34.65	49.67	74.00	-24.33 Peak
4	1660.00	47.19	24.90	3.18	34.65	40.62	54.00	-13.38 Average
5	2985.00	48.88	28.46	4.36	35.00	46.70	74.00	-27.30 Peak
6	2985.00	39.56	28.46	4.36	35.00	37.38	54.00	-16.62 Average
7	4020.00	45.25	29.89	5.32	35.30	45.16	74.00	-28.84 Peak
8	4020.00	36.28	29.89	5.32	35.30	36.19	54.00	-17.81 Average
9	4820.00	44.73	31.54	5.87	35.47	46.67	74.00	-27.33 Peak
10	4820.00	35.67	31.54	5.87	35.47	37.61	54.00	-16.39 Average
11	5660.00	45.53	32.16	6.37	35.50	48.56	74.00	-25.44 Peak
12	5660.00	36.49	32.16	6.37	35.50	39.52	54.00	-14.48 Average



Vertical:



Site : 3m chamber  
 Condition : FCC PART 15 (PK) 3m BBHA9120(>1GHZ) VERTICAL  
 Job No. : 885RF  
 Test mode : PC mode  
 Test Engineer: Collin

	Read	Antenna	Cable	Preamp	Limit	Over		
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
-----	-----	-----	-----	-----	-----	-----	-----	-----
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1165.00	44.49	24.75	2.56	34.54	37.26	74.00	-36.74 Peak
2	1165.00	35.18	24.75	2.56	34.54	27.95	54.00	-26.05 Average
3	2075.00	45.64	26.71	3.56	34.73	41.18	74.00	-32.82 Peak
4	2075.00	36.59	26.71	3.56	34.73	32.13	54.00	-21.87 Average
5	3220.00	52.02	28.62	4.60	35.08	50.16	74.00	-23.84 Peak
6	3220.00	43.67	28.62	4.60	35.08	41.81	54.00	-12.19 Average
7	4360.00	46.99	30.50	5.58	35.38	47.69	74.00	-26.31 Peak
8	4360.00	37.89	30.50	5.58	35.38	38.59	54.00	-15.41 Average
9	5150.00	45.01	32.07	6.08	35.47	47.69	74.00	-26.31 Peak
10	5150.00	36.49	32.07	6.08	35.47	39.17	54.00	-14.83 Average
11	5870.00	45.43	32.73	6.47	35.62	49.01	74.00	-24.99 Peak
12	5870.00	36.94	32.73	6.47	35.62	40.52	54.00	-13.48 Average

**Note:**

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

*Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor*