

FCC PART 15 CLASS B TEST REPORT

For

Shenzhen CE and IT Limited

#602 A Block, Xinxin Bld, Hua Fu Road, Fu Tian District, Shenzhen, China

FCC ID: YG54C2D

Report Type: Original Report	Product Type: Mobile Phone
Test Engineer: Tiger Ye	<i>Tiger Ye</i>
Report Number: RSZ120814014-00A	
Report Date: 2012-09-11	
Reviewed By: RF Leader	<i>Alvin Huang</i>
Test Laboratory: Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn	

Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. This report **must not** be used by the customer to claim product certification, approval, or endorsement by NVLAP*, or any agency of the Federal Government.

* This report may contain data that are not covered by the NVLAP accreditation and shall be marked with an asterisk "★"

TABLE OF CONTENTS

GENERAL INFORMATION.....	3
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	3
OBJECTIVE	3
RELATED SUBMITTAL(S)/GRANT(S)	3
TEST FACILITY	3
SYSTEM TEST CONFIGURATION.....	5
DESCRIPTION OF TEST CONFIGURATION	5
EUT EXERCISE SOFTWARE	5
EQUIPMENT MODIFICATIONS	5
SUPPORT EQUIPMENT LIST AND DETAILS	5
EXTERNAL I/O CABLE.....	5
BLOCK DIAGRAM OF TEST SETUP	6
SUMMARY OF TEST RESULTS	7
FCC §15.107 – AC LINE CONDUCTED EMISSIONS.....	8
MEASUREMENT UNCERTAINTY	8
EUT SETUP	8
EMI TEST RECEIVER SETUP	9
TEST PROCEDURE	9
TEST EQUIPMENT LIST AND DETAILS.....	9
CORRECTED FACTOR & MARGIN CALCULATION	9
TEST RESULTS SUMMARY	10
TEST DATA	10
FCC §15.109 - RADIATED SPURIOUS EMISSIONS	15
MEASUREMENT UNCERTAINTY	15
EUT SETUP	15
EMI TEST RECEIVER SETUP	16
TEST PROCEDURE	16
TEST EQUIPMENT LIST AND DETAILS.....	16
CORRECTED AMPLITUDE & MARGIN CALCULATION	16
TEST RESULTS SUMMARY	16
TEST DATA	17
DECLARATION LETTER	19

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Shenzhen CE and IT Limited's* product, model number: *4C and 2D (FCC ID: YG54C2D)* or the "EUT" in this report was a *Mobile Phone*, which was measured approximately: 10.2 cm (L) x 4.5 cm (W) x 1.3 cm (H), rated input voltage: DC 3.7 V from battery or DC 5 V charging from adapter. The highest operating frequency is 78 MHz.

Note: the product Mobile phone, series model 4C and 2D are electrically identical, they have the same PCB layout and schematic, the difference between them was explained in the attached declaration letter.

Adapter information:

Model: 2D

Input: AC 110-220V 50/60 Hz, 150mA

Output: DC 5.0 V, 500 mA

** All measurement and test data in this report was gathered from production sample serial number: 1208064 (Assigned by Shenzhen BACL). The EUT supplied by the applicant was received on 2012-08-14.*

Objective

This test report is prepared on behalf of *Shenzhen CE and IT Limited* in accordance with Part 2-Subpart J, Part 15-Subparts A and B of the Federal Communication Commissions rules.

The objective of the manufacturer is to determine the compliance of the EUT with FCC Part 15 B.

Related Submittal(s)/Grant(s)

Part 22H/24E PCE submissions with FCC ID: YG54C2D

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on December 06, 2010. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 200707-0).



The current scope of accreditations can be found at <http://ts.nist.gov/Standards/scopes/2007070.htm>.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a manufacturer testing fashion.

Test Mode: Downloading (Data transmit with computer)

EUT Exercise Software

“winthrax” exercise software was used.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

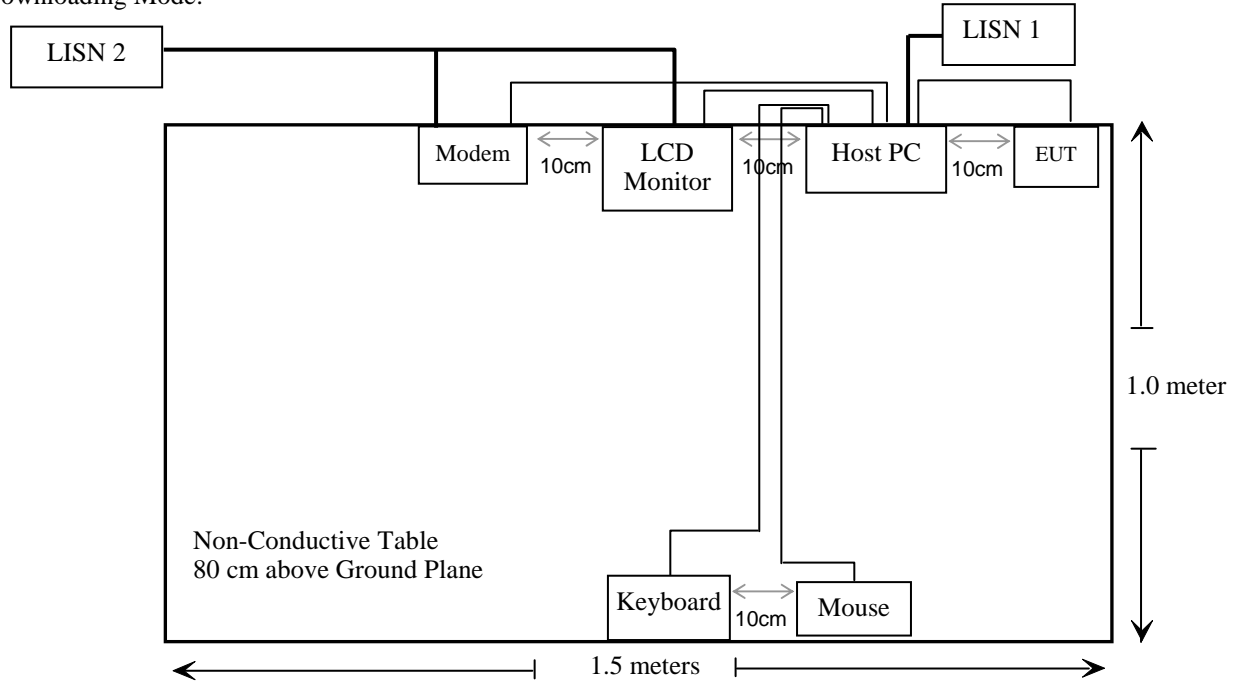
Manufacturer	Description	Model	Serial Number
DELL	PC	VOSTRO 220S	127BP2X
DELL	Keyboard	L100	CNORH656658907BL05DC
DELL	Mouse	MOC5UO	G1900NKD
DELL	LCD Monitor	E178WFPC	CN-OWY564-64180-7C4-2SQH
SAST	Modem	AEM-2100	0293

External I/O Cable

Cable Description	Length (m)	From/Port	To
Shielded Detachable USB Cable	1.5	Host PC	Mouse
Shielded Detachable Serial Cable	1.5	Host PC	Modem
Shielded Detachable K/B Cable	1.5	Host PC	Keyboard
Shielded Detachable VGA Cable	1.8	Host PC	LCD Monitor
Unshielded Detachable USB Cable	1.0	EUT	Host PC

Block Diagram of Test Setup

Downloading Mode:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§15.107	AC Line Conducted Emissions	Compliance
§15.109	Radiated Spurious Emissions	Compliance

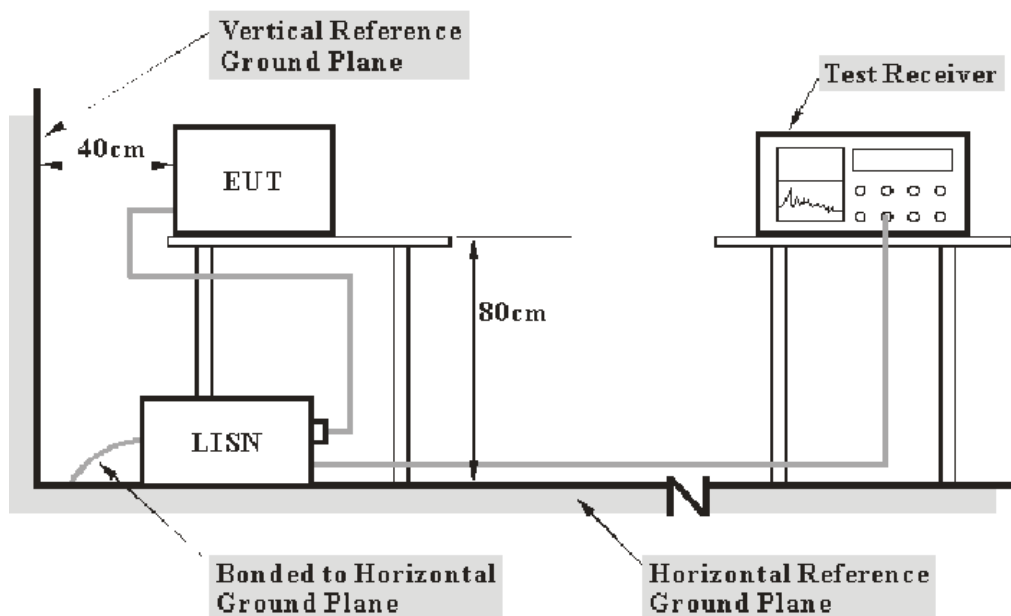
FCC §15.107 – AC LINE CONDUCTED EMISSIONS

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

Based on CISPR 16-4-2, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is 2.4 dB.(k=2, 95% level of confidence), and the uncertainty will not be taken into consideration for all the test data recorded in the report.

EUT Setup



- Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2009 measurement procedure. The specification used was with the FCC Part 15.107 Class B limits.

The spacing between the peripherals was 10 cm.

The host PC was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

<i>Frequency Range</i>	<i>IF B/W</i>
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the host PC was connected to the outlet of the first LISN, and the other relevant equipments were connected to the second LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCS30	100176	2011-11-24	2012-11-23
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2011-11-17	2012-11-16
Com-Power	L.I.S.N.	LI-200	12005	N/A	N/A
Com-Power	L.I.S.N.	LI-200	12208	N/A	N/A
Rohde & Schwarz	Pulse limiter	ESH3Z2	DE25985	2012-07-08	2013-07-07
BACL	CE Test software	BACL-CE	V1.0	-	-

* **Statement of Traceability:** Bay Area Compliance Laboratory Corp. attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Corrected Factor & Margin Calculation

The Corrected factor is calculated by adding LISN/ISN VDF (Voltage Division Factor), Cable Loss and Pulse Limiter Attenuation. The basic equation is as follows:

$$\text{Correction Factor} = \text{LISN VDF} + \text{Cable Loss} + \text{Pulse Limiter Attenuation}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Results Summary

According to the recorded data in following table, the worst margin reading of:

9.73 dB at 1.105 MHz in the Neutral conducted mode (Model: 2D)

Test Data

Environmental Conditions

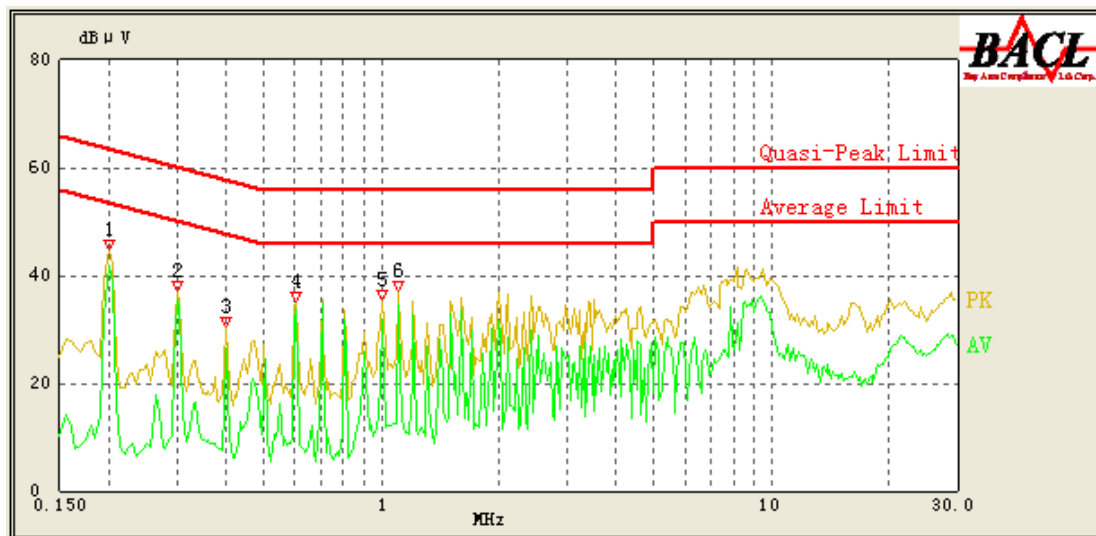
Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0 kPa

The testing was performed by Tiger Ye on 2012-09-07.

EUT Operation Mode: Downloading (data transmits with Computer)

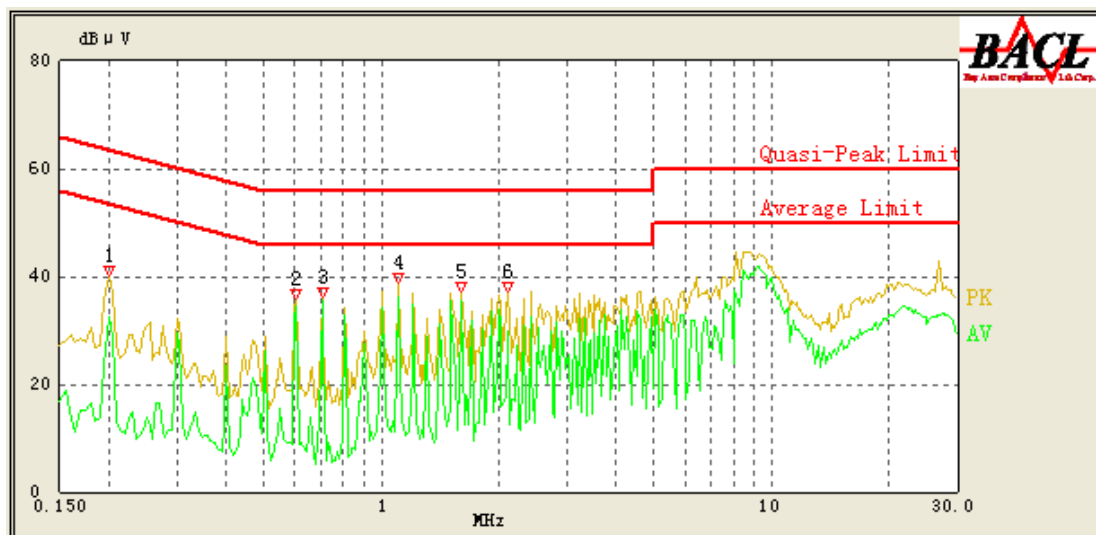
Model: 2D

AC 120V/60 Hz, Line

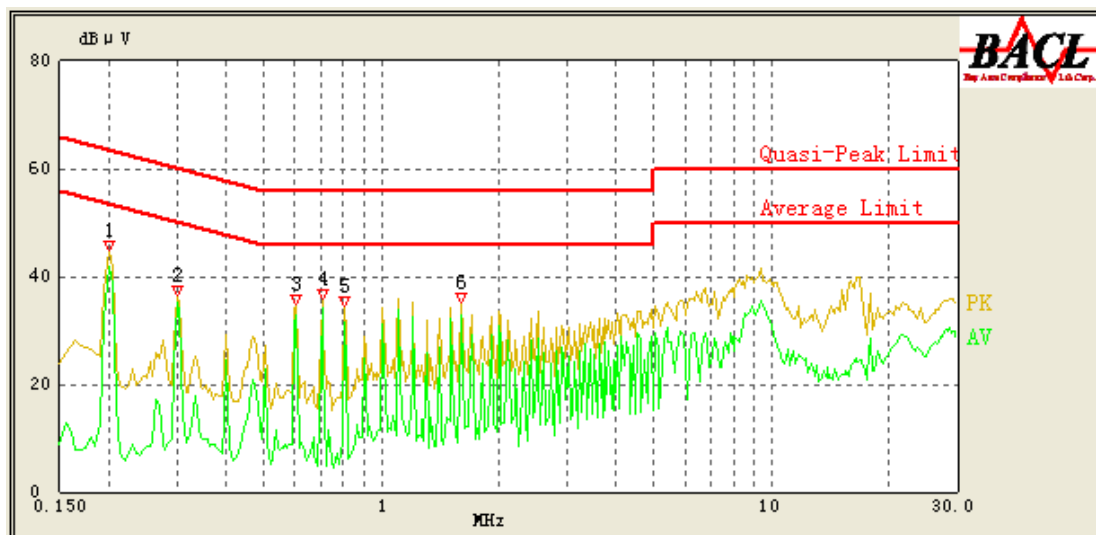


Frequency (MHz)	Corrected Amplitude (dBμV)	Correction Factor (dB)	Limit (dBμV)	Margin (dB)	Detector (PK/Ave./QP)
1.105	34.42	10.17	46.00	11.58	Ave.
0.605	33.86	10.23	46.00	12.14	Ave.
0.200	41.86	10.27	54.57	12.71	Ave.
1.005	31.85	10.17	46.00	14.15	Ave.
0.300	35.50	10.26	51.71	16.21	Ave.
1.105	35.17	10.17	56.00	20.83	QP
0.200	43.11	10.27	64.57	21.46	QP
0.605	34.18	10.23	56.00	21.82	QP
0.400	26.45	10.26	48.86	22.41	Ave.
1.005	33.34	10.17	56.00	22.66	QP
0.300	36.05	10.26	61.71	25.66	QP
0.400	28.13	10.26	58.86	30.73	QP

AC 120V/60 Hz, Neutral

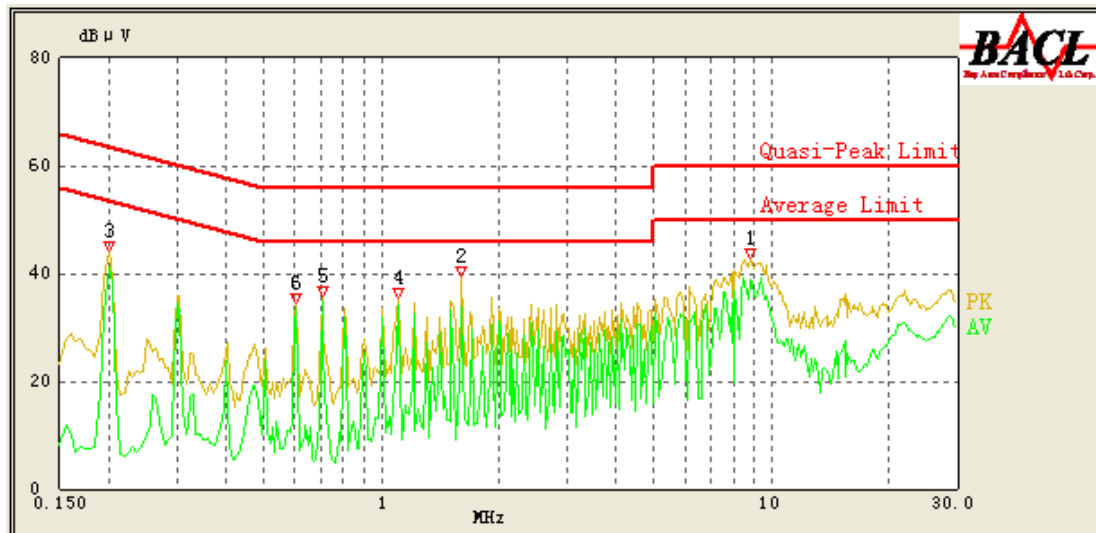


Frequency (MHz)	Corrected Amplitude (dB μ V)	Correction Factor (dB)	Limit (dB μ V)	Margin (dB)	Detector (PK/Ave./QP)
1.105	36.27	10.17	46.00	9.73	Ave.
1.610	35.51	10.19	46.00	10.49	Ave.
0.705	35.46	10.21	46.00	10.54	Ave.
0.605	34.51	10.23	46.00	11.49	Ave.
2.110	30.00	10.20	46.00	16.00	Ave.
0.705	37.74	10.21	56.00	18.26	QP
2.110	37.54	10.20	56.00	18.46	QP
1.105	36.76	10.17	56.00	19.24	QP
1.610	35.90	10.19	56.00	20.10	QP
0.605	35.04	10.23	56.00	20.96	QP
0.200	32.34	10.24	54.57	22.23	Ave.
0.200	37.01	10.24	64.57	27.56	QP

Model: 4C**AC 120V/60 Hz, Line**

Frequency (MHz)	Corrected Amplitude (dBμV)	Correction Factor (dB)	Limit (dBμV)	Margin (dB)	Detector (PK/Ave./QP)
0.705	34.15	10.22	46.00	11.85	Ave.
0.200	41.69	10.27	54.57	12.88	Ave.
0.605	32.93	10.23	46.00	13.07	Ave.
1.610	32.93	10.19	46.00	13.07	Ave.
0.805	31.44	10.20	46.00	14.56	Ave.
0.300	35.26	10.26	51.71	16.45	Ave.
0.200	43.29	10.27	64.57	21.28	QP
0.705	34.43	10.22	56.00	21.57	QP
0.605	33.71	10.23	56.00	22.29	QP
1.610	33.60	10.19	56.00	22.40	QP
0.805	32.57	10.20	56.00	23.43	QP
0.300	35.45	10.26	61.71	26.26	QP

AC 120V/60 Hz, Neutral



Frequency (MHz)	Corrected Amplitude (dBμV)	Correction Factor (dB)	Limit (dBμV)	Margin (dB)	Detector (PK/Ave./QP)
0.705	34.72	10.21	46.00	11.28	Ave.
8.850	38.67	10.44	50.00	11.33	Ave.
1.105	34.21	10.17	46.00	11.79	Ave.
1.610	33.90	10.19	46.00	12.10	Ave.
0.605	33.57	10.23	46.00	12.43	Ave.
0.200	41.24	10.24	54.57	13.33	Ave.
1.610	37.37	10.19	56.00	18.63	QP
0.705	35.67	10.21	56.00	20.33	QP
8.850	39.57	10.44	60.00	20.43	QP
1.105	35.01	10.17	56.00	20.99	QP
0.200	42.59	10.24	64.57	21.98	QP
0.605	33.74	10.23	56.00	22.26	QP

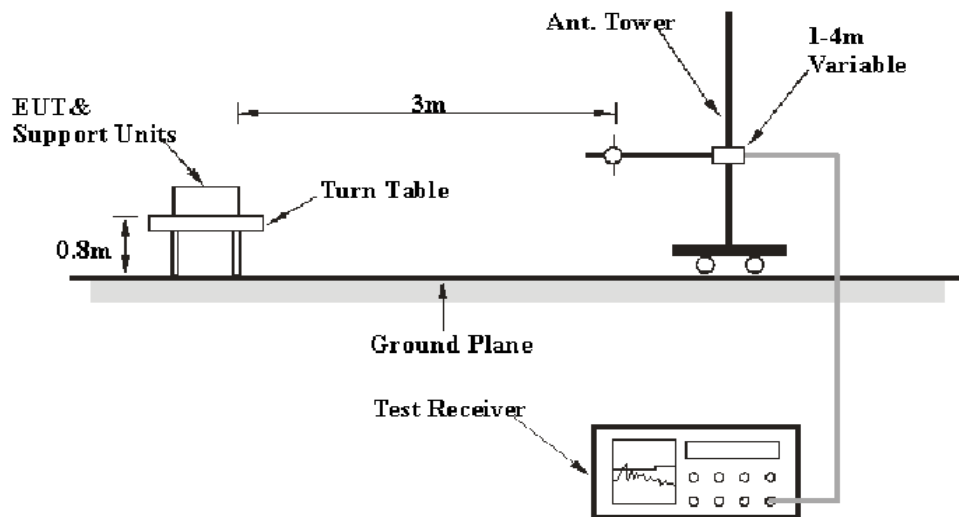
FCC §15.109 - RADIATED SPURIOUS EMISSIONS

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR 16-4-2, the Treatment of Uncertainty in EMC Measurements, the estimation of the uncertainty of radiation emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is 4.0 dB. (k=2, 95% level of confidence), and the uncertainty will not be taken into consideration for all the test data recorded in the report.

EUT Setup



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC Part 15.109 Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

The host PC was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 1000 MHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

<i>Frequency Range</i>	<i>RBW</i>	<i>Video B/W</i>	<i>Detector</i>
30MHz – 1000 MHz	100 kHz	300 kHz	QP

Test Procedure

For the radiated emissions test, the host PC and relevant equipments were connected to AC floor outlet for downloading mode.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the Quasi-peak detection mode from 30 MHz to 1 GHz.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	101122	2012-08-08	2013-08-07
HP	Amplifier	8447E	1937A01046	2011-11-24	2012-11-23
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2011-11-28	2012-11-27
R&S	Auto test Software	EMC32	V6.30	-	-

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Correction Factor} = \text{Antenna Loss} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Results Summary

According to the data in the following table, the worst margin reading is below:

1.3 dB at 857.969600 MHz in the Vertical polarization (model: 2D)

Test Data

Environmental Conditions

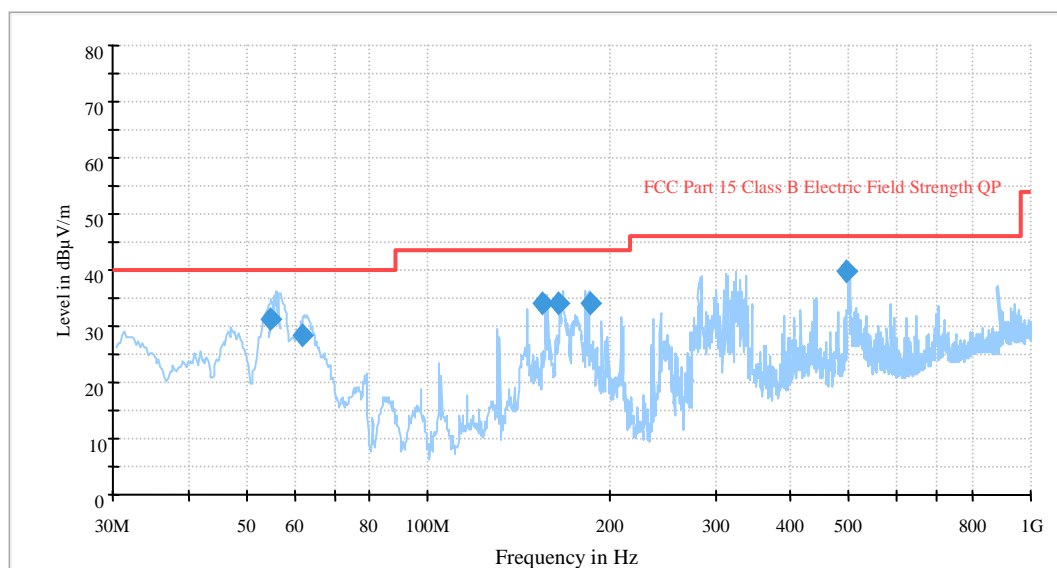
Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0 kPa

The testing was performed by Tiger Ye on 2012-09-06.

EUT Operation Mode: Downloading

Model: 4C

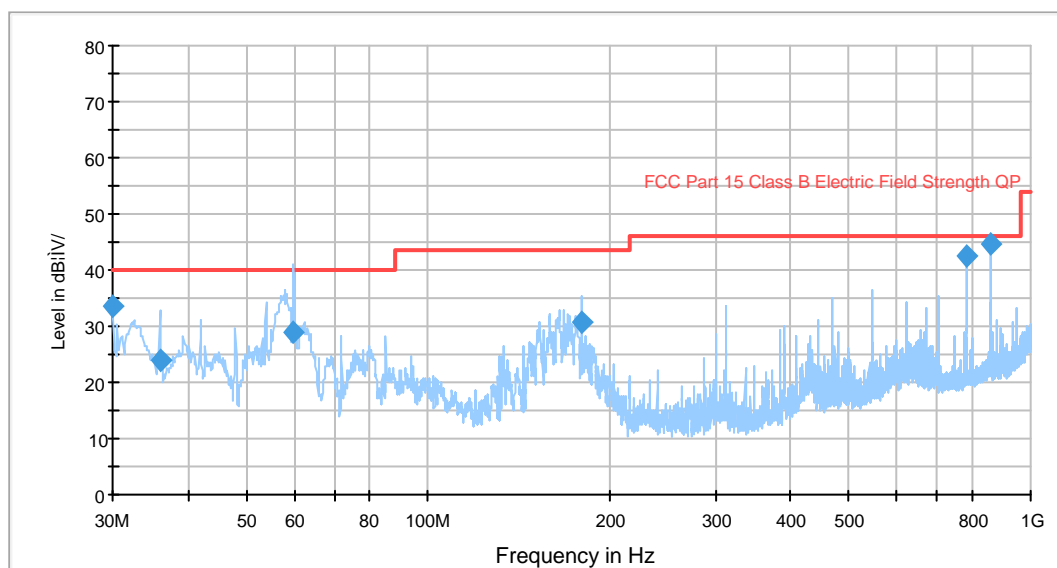
Auto Test (FCC 15 Class B)



Frequency (MHz)	Corrected Amplitude (dBμV/m)	Antenna		Turntable Position (degree)	Correction Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
		Height (cm)	Polarity (H/V)				
499.820000	38.8	100.0	H	358	-8.4	46.0	7.2
55.620500	30.1	100.0	V	25	-18.1	40.0	9.9
61.888000	28.9	100.0	V	321	-18.6	40.0	11.1
165.660000	31.1	225.0	H	273	-14.6	43.5	12.4
144.013000	30.6	194.0	H	244	-13.5	43.5	12.9
180.630000	30.3	206.0	H	290	-15.3	43.5	13.2

Model: 2D

Auto Test(FCC part 15 Class B)



Frequency (MHz)	Corrected Amplitude (dBμV/m)	Antenna		Turntable Position (degree)	Correction Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
		Height (cm)	Polarity (H/V)				
857.969600	44.7	110.0	V	176	-4.6	46.0	1.3*
779.988900	42.5	105.0	H	218	-5.6	46.0	3.5*
30.007350	33.5	102.0	V	236	-6.7	40.0	6.5
59.863400	28.9	105.0	V	12	-20.7	40.0	11.1
179.938550	30.7	206.0	H	87	-16.0	43.5	12.8
36.003950	23.8	131.0	V	157	-11.5	40.0	16.2

*Within measurement uncertainty!

DECLARATION LETTER



Shenzhen CE and IT Limited

#602 A Block, Xinxin Bld, Hua Fu Rd, Fu Tian District Shenzhen, China

Tel: 86-755-83689256

Fax: 86-755-83778726

2012-8-22

Product Similarity Declaration

To Whom It May Concern,

We, Shenzhen CE and IT Limited hereby declare that our Mobile phone, Model Number: 4C ,2D are electrically identical. They are just different in 2D does not support FM and have no camera, 4C support FM and have a camera due to marketing purposes.

Please contact me if you have any question.



Benjamin Dolgin-Gardner
Director

***** END OF REPORT *****