



FCC PART 15 CLASS B

TEST REPORT

For

Shenzhen Telacom Science & Technology Co., Ltd.

28/F Building B, The Pavilion Hotel, Huaqiangbei Road, Futian District, Shenzhen, Guangdong, China

FCC ID: A2DA8T171G

Report Type: Original Report	Product Type: GSM Mobile phone
Test Engineer: <u>Brown Lu</u>	
Report Number: <u>RSZ120321001-00B</u>	
Report Date: <u>2012-04-09</u>	
Reviewed By: Alvin Huang EMC Engineer	
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* This report contains data that are not covered by the NVLAP accreditation and are marked with an asterisk “★” (Rev.2)

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Shenzhen Telacom Science & Technology Co., Ltd.*'s product, model number: *T171 (FCC ID: A2DA8T171G)* or the "EUT" in this report was a *GSM Mobile phone*, which was measured approximately: 109 mm (L) x 47 mm (W) x 13 mm (H), rated input voltage: DC 3.7 V battery or DC 5V charging from adapter, the highest operating frequency is 104 MHz.

Adapter Information:

Model: CM-300

Input: AC 100-240V 50-60 Hz 0.2A

Output: DC 5.0V 600 mA

Note: The series product, model K1751A and T171 are electrically identical, they have the same PCB layout and schematic, the difference between them is just the model number, we select T171 for fully testing, which was explained in the attached declaration letter.

** All measurement and test data in this report was gathered from production sample serial number: 20113548680000158 (Assigned by the applicant). The EUT was received on 2012-03-21.*

Objective

This test report is prepared on behalf of *Shenzhen Telacom Science & Technology Co., Ltd.* 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 submission with FCC ID: A2DA8T171G

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 1: Charging from adapter

Test mode 2: Downloading

EUT Exercise Software

“Winthrax” exercise software was used.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

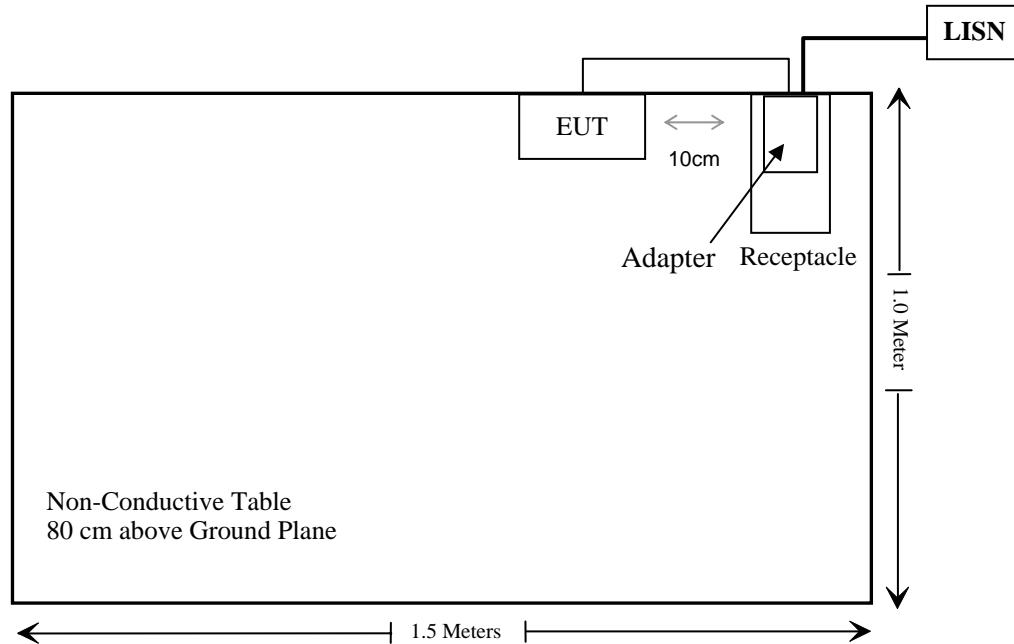
Manufacturer	Description	Model	Serial Number
DELL	PC	VOSTRO 220S	127BP2X
DELL	Keyboard	L100	CNORH656658907BL05DC
DELL	Mouse	MOC5UO	G1900NKD
DELL	LCD Monitor	E178WFPC	CN-OWY564-64180-7C4-2SQH
AST	Modem	AEM-2100	0293

External I/O Cable

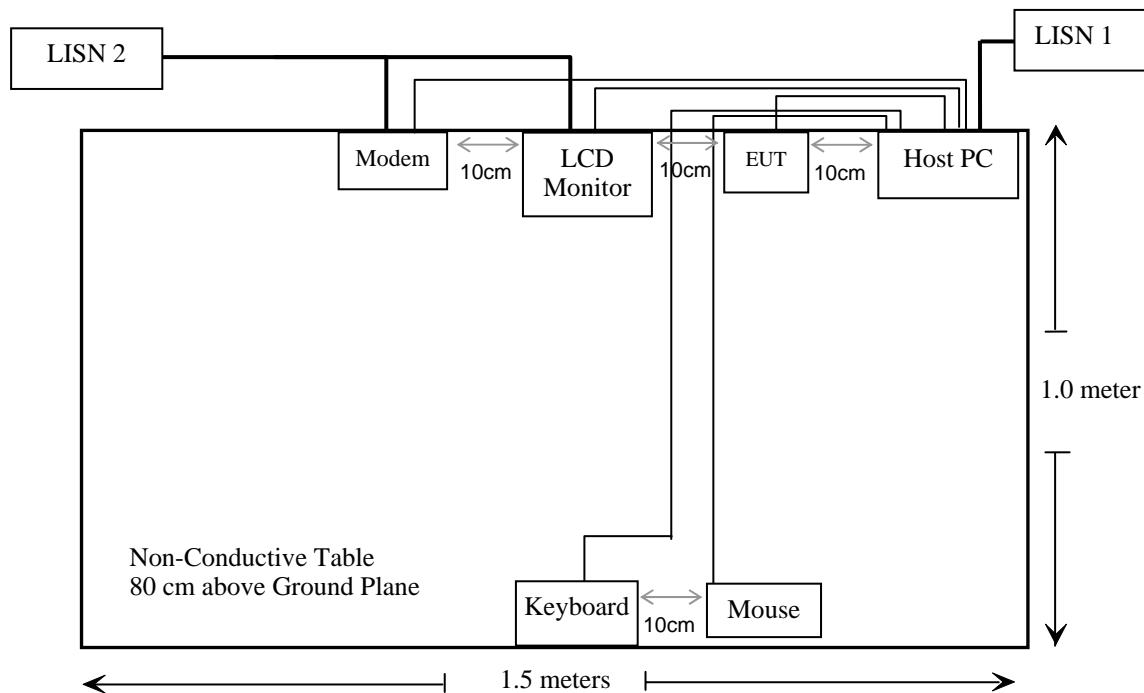
Cable Description	Length (m)	From/Port	To
Shielded Detachable USB Cable	1.5	Host PC	Mouse
Shielded Detachable Serial Cable	1.5	Host PC	Modem
Shielded Detachable K/B Cable	1.5	Host PC	Keyboard
Shielded Detachable VGA Cable	1.8	Host PC	LCD Monitor
Unshielded Detachable USB Cable	0.8	EUT	Host PC

Block Diagram of Test Setup

EUT Operation Mode 1: Charging from adapter:



EUT Operation Mode 2: Downloading



SUMMARY OF TEST RESULTS

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

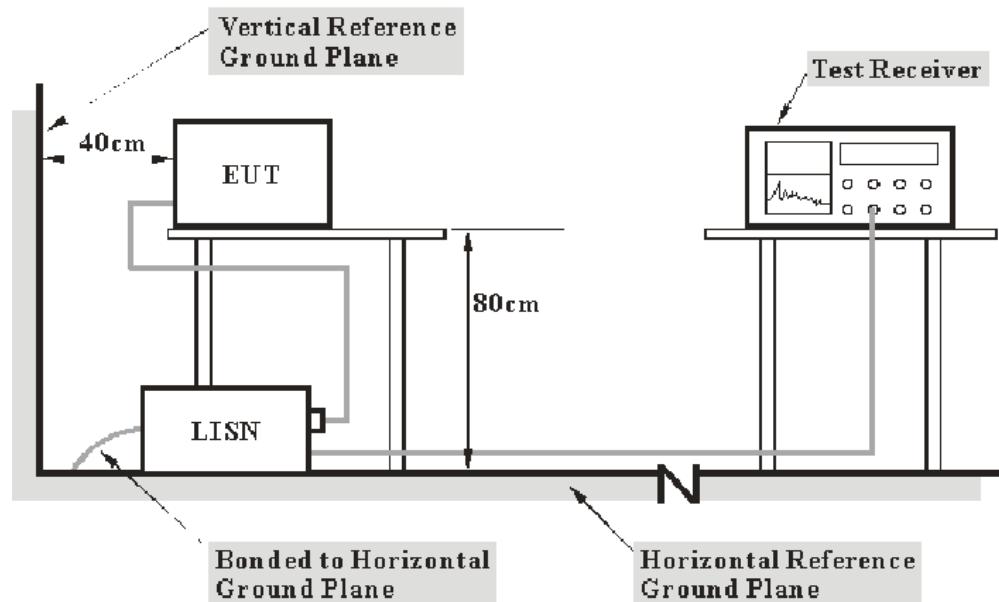
FCC §15.107 – AC LINE CONDUCTED EMISSIONS

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)

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 adapter was connected to a 120 VAC/60 Hz power source for charging mode

The host PC was connected to a 120 VAC/60 Hz power source for downloading mode

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:

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

Test Procedure

During the conducted emission test, for charging mode, the adapter was connected to the outlet of the first LISN, for downloading mode, 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	830245/006	2012-03-03	2013-03-02
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2012-03-09	2013-03-08
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	2011-07-08	2012-07-07

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

Test Results Summary

According to the recorded data in following table, the EUT complied with the [FCC Part 15.107](#), with the worst margin reading of:

5.17 dB at 8.845 MHz in the **Neutral** conducted mode

Test Data

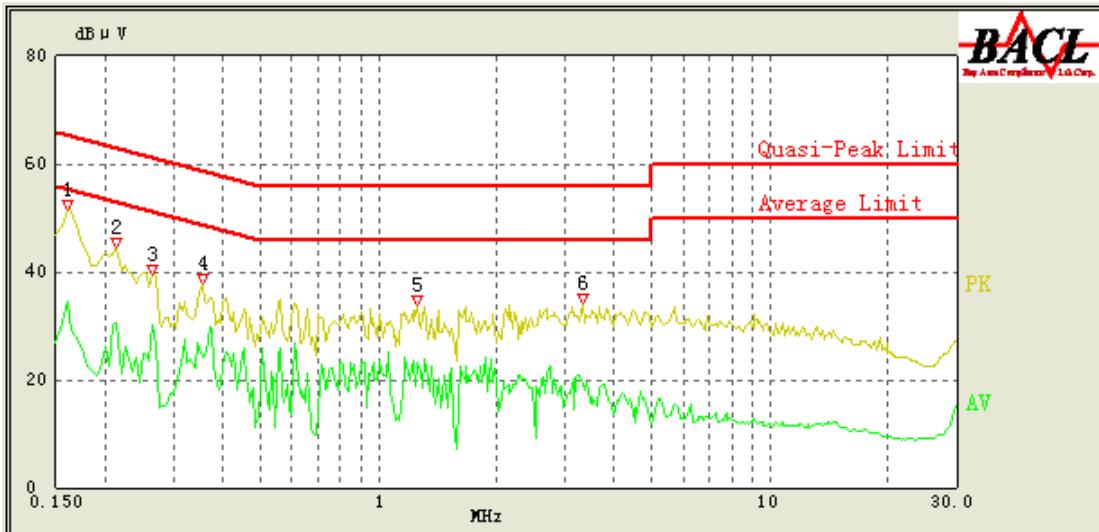
Environmental Conditions

Temperature:	25 °C
Relative Humidity:	48 %
ATM Pressure:	100.0 kPa

The testing was performed by Brown Lu on 2012-04-01

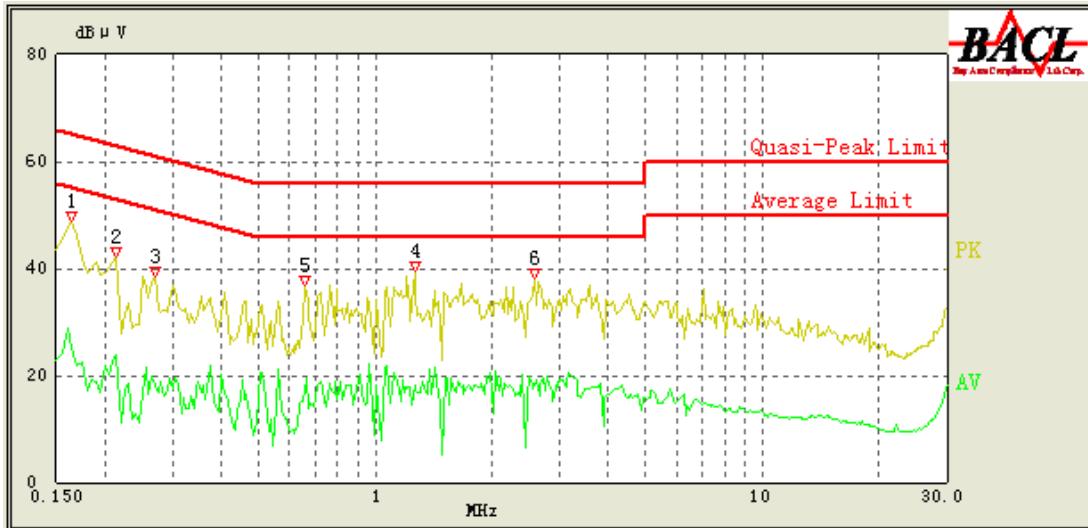
EUT Operation Mode: Charging

AC 120V/60 Hz, Line



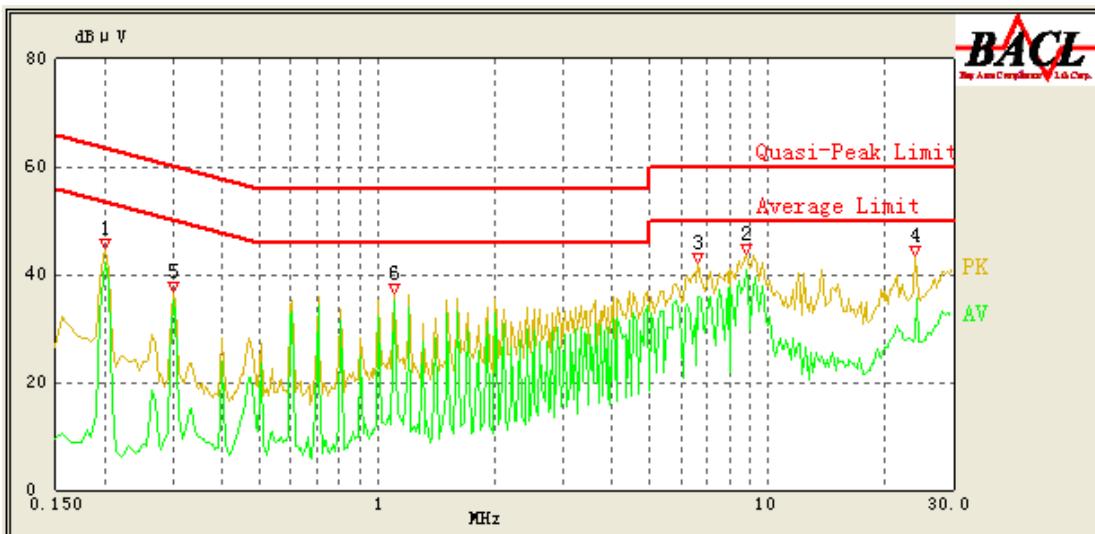
Frequency (MHz)	Corrected Amplitude (dB μ V)	Correction Factor (dB)	Limit (dB μ V)	Margin (dB)	Detector (PK/Ave./QP)
0.160	34.56	10.23	55.71	21.15	Ave.
0.160	44.41	10.23	65.71	21.30	QP
0.265	30.15	10.23	52.71	22.56	Ave.
1.260	23.11	10.26	46.00	22.89	Ave.
0.215	30.59	10.23	54.14	23.55	Ave.
0.215	38.97	10.23	64.14	25.17	QP
0.355	24.01	10.23	50.14	26.13	Ave.
3.315	19.21	10.45	46.00	26.79	Ave.
0.355	31.04	10.23	60.14	29.10	QP
0.265	33.20	10.23	62.71	29.51	QP
1.255	25.11	10.26	56.00	30.89	QP
3.315	23.06	10.45	56.00	32.94	QP

AC 120V/60 Hz, Neutral



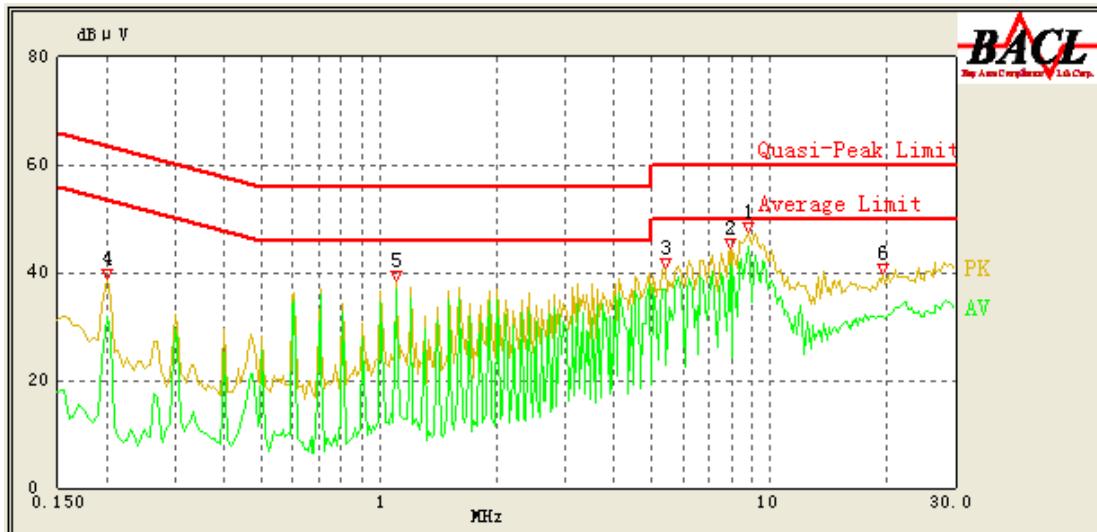
Frequency (MHz)	Corrected Amplitude (dB μ V)	Correction Factor (dB)	Limit (dB μ V)	Margin (dB)	Detector (PK/Ave./QP)
0.165	43.58	10.23	65.57	21.99	QP
0.215	37.67	10.23	64.14	26.47	QP
1.265	18.23	10.26	46.00	27.77	Ave.
1.265	27.68	10.26	56.00	28.32	QP
2.555	17.65	10.38	46.00	28.35	Ave.
0.655	17.15	10.24	46.00	28.85	Ave.
0.270	33.48	10.23	62.57	29.09	QP
0.660	26.24	10.24	56.00	29.76	QP
2.580	25.90	10.38	56.00	30.10	QP
0.215	23.75	10.23	54.14	30.39	Ave.
0.165	25.17	10.23	55.57	30.40	Ave.
0.270	18.27	10.23	52.57	34.30	Ave.

EUT Operation Mode: Downloading

AC 120V/60 Hz, Line

Frequency (MHz)	Corrected Amplitude (dB μ V)	Correction Factor (dB)	Limit (dB μ V)	Margin (dB)	Detector (PK/Ave./QP)
8.845	40.96	10.88	50.00	9.04	Ave.
1.105	35.17	10.25	46.00	10.83	Ave.
0.200	42.01	10.23	54.57	12.56	Ave.
6.635	35.72	10.72	50.00	14.28	Ave.
24.015	35.44	12.10	50.00	14.56	Ave.
0.300	35.19	10.23	51.71	16.52	Ave.
8.845	41.75	10.88	60.00	18.25	QP
1.105	35.33	10.25	56.00	20.67	QP
0.200	42.81	10.23	64.57	21.76	QP
6.635	36.57	10.72	60.00	23.43	QP
24.010	35.81	12.10	60.00	24.19	QP
0.300	35.52	10.23	61.71	26.19	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)
8.845	44.83	10.88	50.00	5.17	Ave.
7.940	41.52	10.81	50.00	8.48	Ave.
1.105	36.70	10.25	46.00	9.30	Ave.
5.430	36.89	10.63	50.00	13.11	Ave.
8.845	45.01	10.88	60.00	14.99	QP
7.935	42.98	10.81	60.00	17.02	QP
19.600	31.80	11.52	50.00	18.20	Ave.
1.105	37.16	10.25	56.00	18.84	QP
5.425	37.45	10.63	60.00	22.55	QP
0.200	31.97	10.23	54.57	22.60	Ave.
19.500	34.02	11.52	60.00	25.98	QP
0.200	36.09	10.23	64.57	28.48	QP

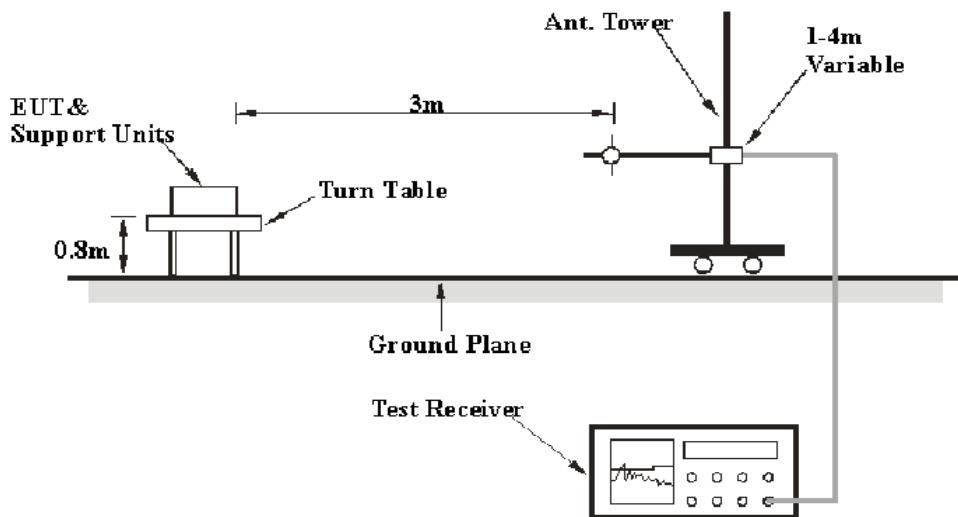
FCC §15.109 - RADIATED SPURIOUS EMISSIONS

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)

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</i>	<i>RB/W</i>	<i>VB/W</i>	<i>IF B/W</i>	<i>Detection</i>
30 MHz-1 GHz	100 kHz	300 kHz	120 kHz	Quasi-peak

Test Procedure

For the radiated emissions test, the adapter or 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 the 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
HP	Amplifier	HP8447E	1937A01046	2011-08-02	2012-08-02
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2011-11-11	2012-11-10
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2011-07-05	2012-07-04

* **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:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

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 EUT complied with the FCC §15.109 Class B, with the worst margin reading of:

2.5 dB at 30.246000 MHz in the Vertical polarization

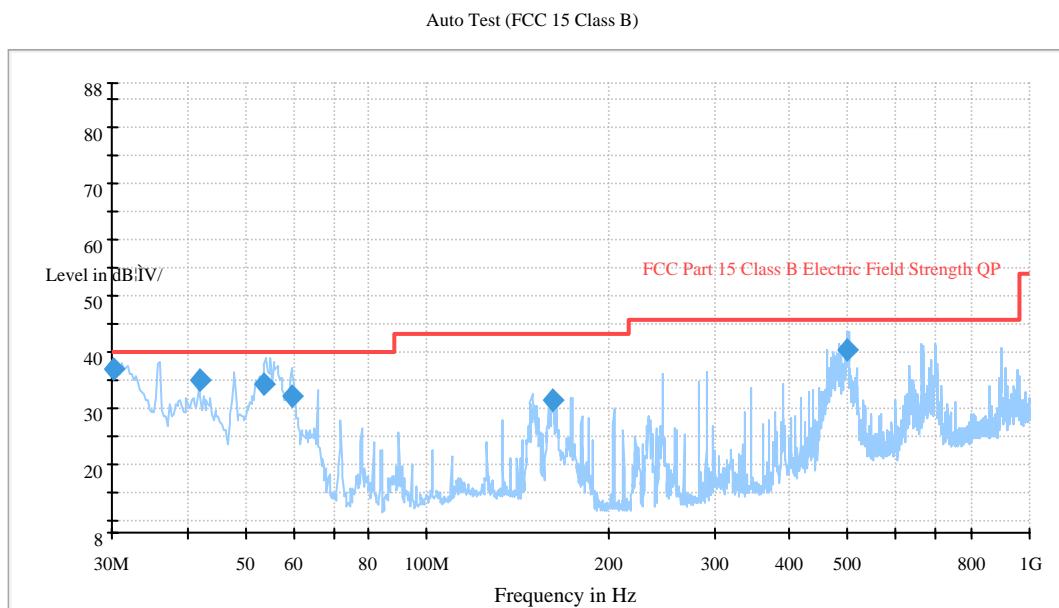
Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	48 %
ATM Pressure:	100.0 kPa

The testing was performed by Brown Lu on 2012-04-01

EUT Operation Mode: Downloading



Frequency (MHz)	Corrected Amplitude (dB μ V/m)	Antenna		Turntable Position (degree)	Correction Factor (dB)	Limit (dB μ V/m)	Margin (dB)
		Height (cm)	Polarity (H/V)				
30.246000	37.5	101.0	V	221.0	-5.6	40.0	2.5*
41.998750	35.3	124.0	V	135.0	-13.3	40.0	4.7
53.885750	34.5	102.0	V	5.0	-17.8	40.0	5.5
59.866500	32.4	102.0	V	309.0	-18.7	40.0	7.6
161.938250	31.4	153.0	H	273.0	-14.4	43.5	12.1
498.882750	40.5	189.0	V	271.0	-8.4	46.0	5.5

*Within measurement uncertainty.

PRODUCT SIMILARITY DECLARATION LETTER



Shenzhen Telacom Science & Technology Co., Ltd
Tel:0755-61683924 Fax:0755-61683970

Add: 28F, Building B, the pavilion hotel ,Huaqiang Rd, Futian district,
Shenzhen,Guangdong,China
Date: 2012-04-12

Product Similarity Declaration

To Whom It May Concern,

We, Shenzhen Telacom Science & Technology Co., Ltd., hereby declare that our Wireless Headset, Model Number: K1751A are electrically identical with the T171 that was certified by BACL. They are just different in model No. due to marketing purposes.

Please contact me if you have any question.

Signature: A handwritten signature in black ink, appearing to read 'Kun Qian'.

Kun Qian
Overseas Manager

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