



NVLAP LAB CODE 200707-0



FCC PART 15.249

EMI MEASUREMENT AND TEST REPORT

For

XIAMEN YEALINK NETWORK TECHNOLOGY CO., LTD.

7/F HuaLian Electronic BLDG., No.580 JiaHe Road, XiaMen, China

FCC ID: T2CUSBW0002

This Report Concerns: <input checked="" type="checkbox"/> Original Report		Equipment Type: USB Wireless Phone	
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Report No.:	RSZ07013004		
Test Date:	2007-02-06 to 2007-03-20		
Report Date:	2007-03-21		
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Note: This test report is for the customer shown above and their specific product only. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratory Corp. (Shenzhen). This report **must not** be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the Federal Government.

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The XIAMEN YEALINK NETWORK TECHNOLOGY CO., LTD.'s product, model number: USB-W1DL or the "EUT" as referred to in this report is a USB Wireless Phone, the EUT was composed of two parts, one is a Handset which measures approximately 4.60cmL x 2.70cmW x 14.00cmH, and the other is a Base which measures approximately 14.00cmL x 11.50cm W x 5.50cmH, rated input voltage: DC5V for Base unit of EUT and 3.7 V Battery for Handset unit of EUT.

** The test data gathered are from production sample, serial number: 0701030 provided by the manufacturer, we received EUT on 2007-01-30.*

Objective

This Type approval report is prepared on behalf of XIAMEN YEALINK NETWORK TECHNOLOGY CO., LTD. in accordance with Part 2, Subpart J, and Part 15, Subparts A, B and C of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.249 rules.

Related Submittal(s)/Grant(s)

No Related Submittals.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All radiated and conducted emissions measurement was performed at Bay Area Compliance Laboratory Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The Test site used by Bay Area Compliance Laboratory Corp. (Shenzhen) to collect test data is located in 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 Laboratory 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 November 04, 2004. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

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 Laboratory Corp. (Shenzhen) is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200707-0). The current scope of accreditations can be found at <http://ts.nist.gov/ts/htdocs/210/214/scopes/2007070.htm>.

Host System Configuration List and Details

Manufacturer	Description	Model	Serial Number	FCC ID
DELL	Motherboard	OWC297	CN-OWC297-70821-566-02BR	DoC
DELL	Power	NPS-250KB D	CN-0H2678-17972-56E8NBM	DoC
Seagate	Hard Disk	ST340014A	5JXK3NAD	DoC
DELL	3.5' Floppy	N/A	CN-0N8893-69802-54Q-02OZ	DoC
Lite-ON	CD-Rom	LTN-489S	N/A	DoC
Intel	Ethernet	PRO 10/100 VE	N/A	DoC
Intel	CPU	Celeron D-2533	N/A	DoC
ProMOS	Memory	V826632K24SATG-C0	0525-K1933700	DoC

Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number	FCC ID
DELL	PC	DELL 170L	CN-0TC670-70821-560-F4WQ	DoC
DELL	Keyboard	SK-8110	CN07N244-71616-56I-1I00	DoC
DELL	Mouse	M071KC	519046820	DoC
DELL	LCD Monitor	1505FP	Y4287-7168-574-GBSH	DoC
HP	Laser Jet5L	C3941A	JPTVOB2337	DoC
SAST	Modem	AEM-2100	293	DoC

External I/O Cable

Cable Description	Length (M)	From/Port	To
Shielded Detachable Keyboard Cable	1.5	Keyboard Port / Host	Keyboard
Shielded Detachable Mouse Cable	1.5	PS/2 Port / Host	Mouse
Shielded Detachable Printer Cable	1.2	Parallel Port / Host	Printer
Shielded Detachable Serial Cable	1.2	Serial Port / Host	Modem
Shielded Detachable VGA Cable	1.5	VGA Port / Host	Monitor
USB Cable	1.8	EUT	PC

SYSTEM TEST CONFIGURATION

Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

EUT Exercise Software

N/A

Special Accessories

The special accessories were provided by Bay Area Compliance Laboratory Corp. (Shenzhen).

Block Diagram/Schematics

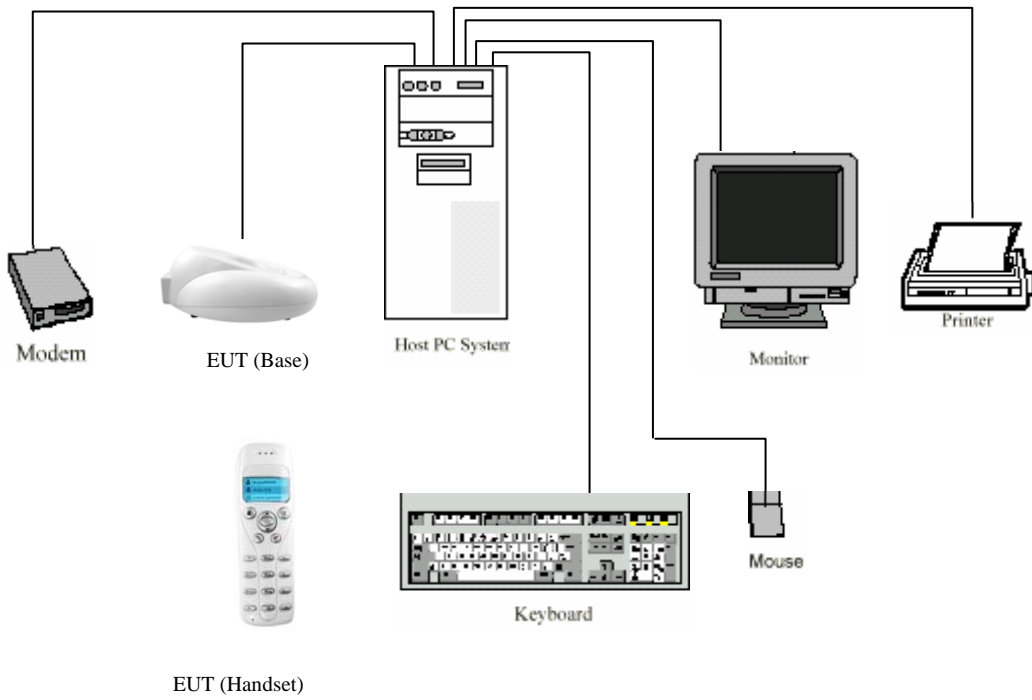
Please refer to the tech.

Equipment Modifications

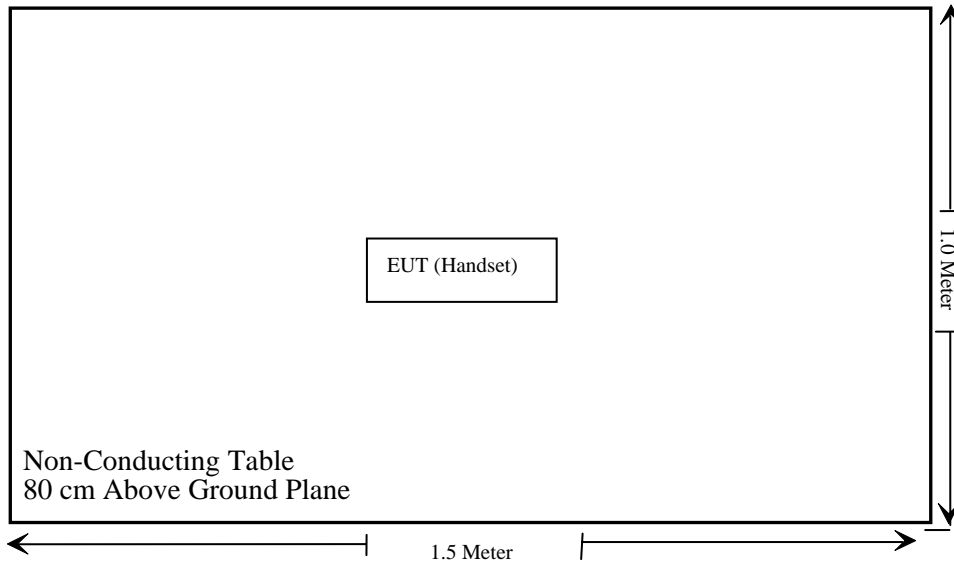
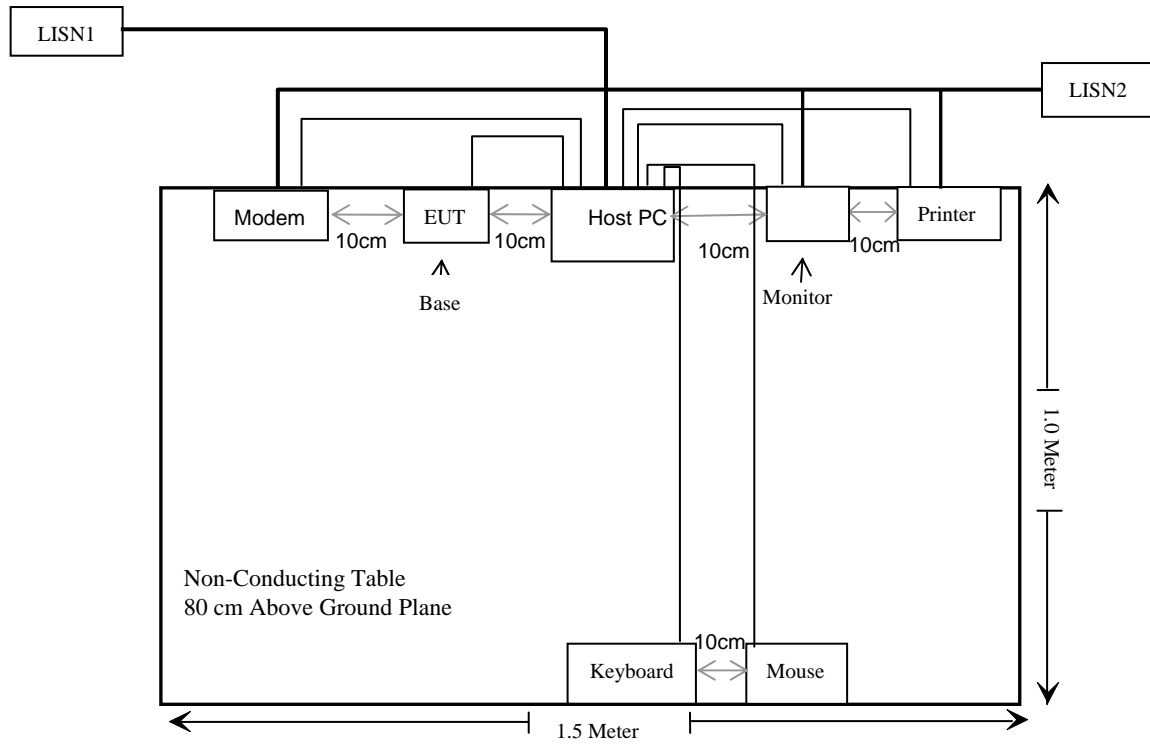
Bay Area Compliance Laboratory Corp. (Shenzhen) has not done any modification on the EUT.

Configuration of Test Setup

Test Mode: Transmitting



Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.203	Antenna Requirement	Compliant
§15.205	Restricted Bands of Operation	Compliant
§15.207(a)	Conduction Emission	Compliant
§15.209(a), §15.249(a), §15.249(c)	Radiated Emission	Compliant*
§15.249(d)	Out of band emission	Compliant

* Within the measurement uncertainty

§15.203 - ANTENNA REQUIREMENT

Standard Applicable

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 shall be considered sufficient to comply with the provisions of this section.

This product has a permanent antenna, fulfill the requirement of this section.

Result: Compliance.

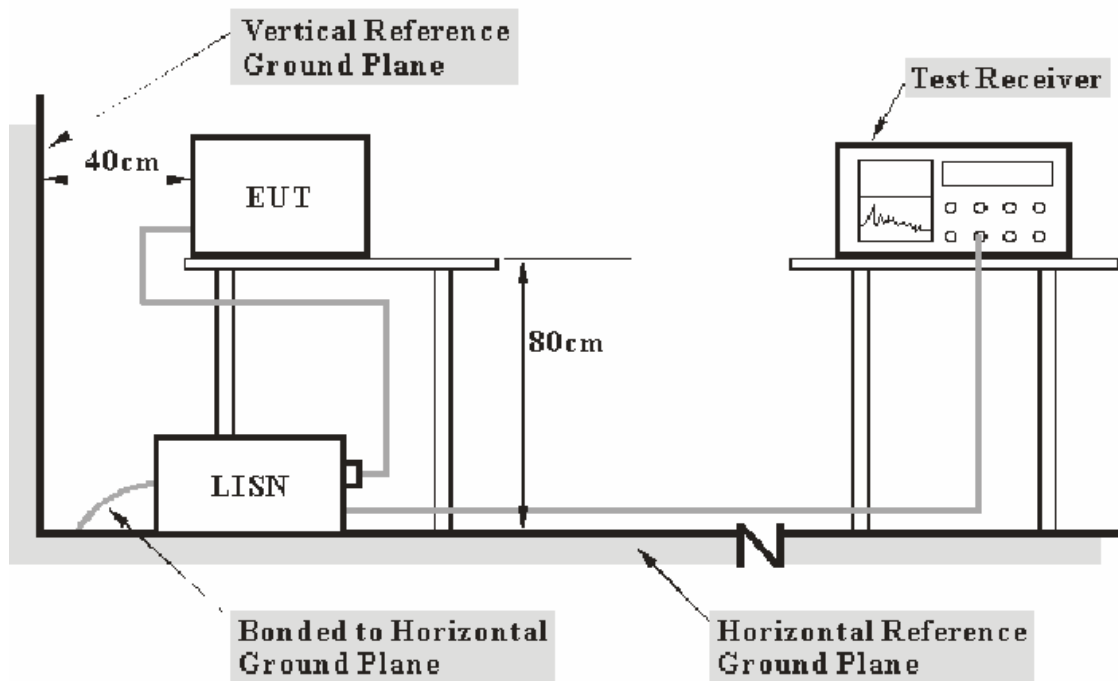
§15.207 - CONDUCTED EMISSION

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 NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at Bay Area Compliance Laboratory Corp. (Shenzhen) is ± 2.4 dB.

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 C63.4-2003 measurement procedure. The specification used was with the FCC Part 15 .207 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 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>IFBW</i>
150 kHz – 30 MHz	9 kHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCS30	DE25330	2006-03-20	2007-03-19
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2007-03-01	2008-03-01

* Com-Power’s LISN were used as the supporting equipment.

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

Test Procedure

During the conducted emission test, the host PC power system cord was connected to 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 Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207, with the worst margin reading of:

2.70 dB at **0.730 MHz** in the **Neutral** conductor mode, running mode
3.40 dB at **16.460 MHz** in the **Neutral** conductor mode, charging mode

Test Data

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	65%
ATM Pressure:	1000mbar

The testing was performed by Jack Wang and Hansen Hu on 2007-03-15., 2007-03-20.

Test mode: Running

Line Conducted Emissions				FCC PART 15 .207	
Frequency (MHz)	Amplitude (dBµV)	Detector (QP/AV)	Phase (Live/Neutral)	Limit (dBµV)	Margin (dB)
0.730	53.30	QP	Neutral	56.00	2.70
0.730	53.20	QP	Live	56.00	2.80
0.730	42.80	AV	Live	46.00	3.20
0.730	42.70	AV	Neutral	46.00	3.30
3.085	50.20	QP	Live	56.00	5.80
1.205	39.80	AV	Neutral	46.00	6.20
1.205	39.60	AV	Live	46.00	6.40
3.080	49.50	QP	Neutral	56.00	6.50
1.205	49.40	QP	Neutral	56.00	6.60
1.205	49.30	QP	Live	56.00	6.70
3.085	38.80	AV	Live	46.00	7.20
3.080	38.10	AV	Neutral	46.00	7.90
5.865	48.10	QP	Live	60.00	11.90
0.500	33.70	AV	Live	46.00	12.30
0.455	33.30	AV	Neutral	46.78	13.48
5.955	46.10	QP	Neutral	60.00	13.90
0.180	39.50	AV	Neutral	54.49	14.99
0.500	39.00	QP	Live	56.00	17.00
0.455	38.70	QP	Neutral	56.78	18.08
0.180	35.30	AV	Live	54.49	19.19
0.180	41.80	QP	Neutral	64.49	22.69
5.865	27.00	AV	Live	50.00	23.00
5.955	26.50	AV	Neutral	50.00	23.50
0.180	38.50	QP	Live	64.49	25.99

Test mode: Charging

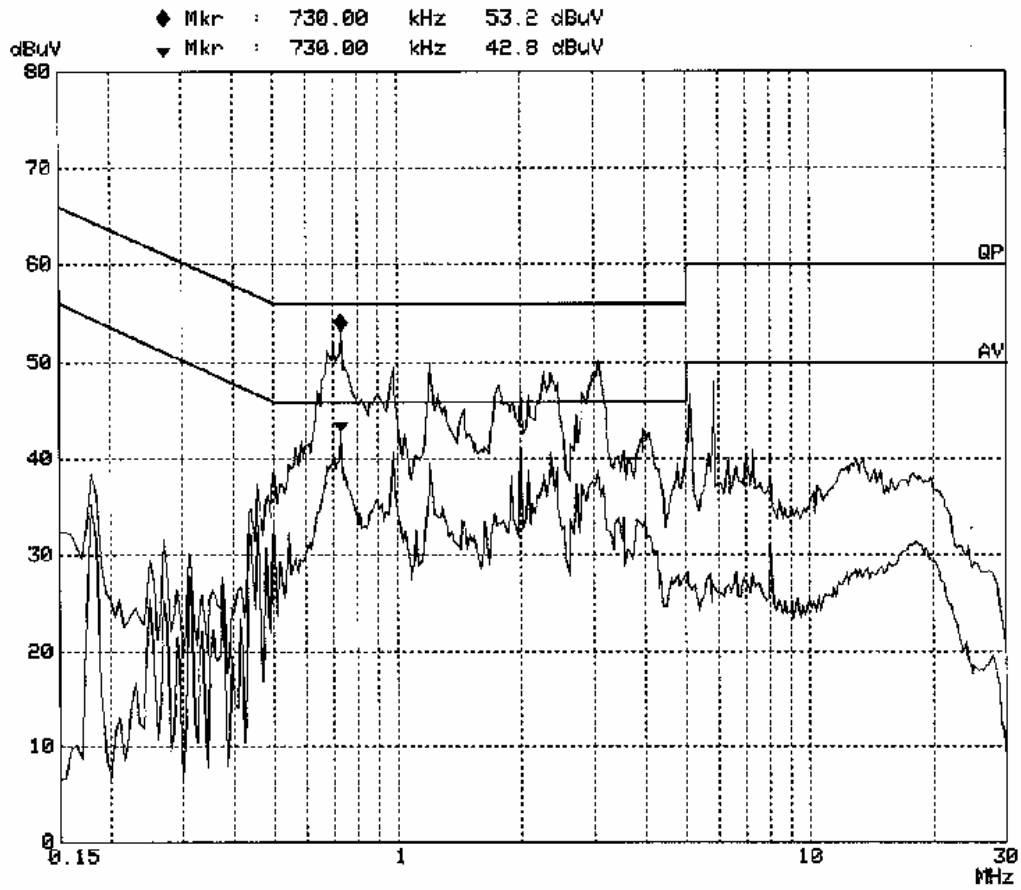
Line Conducted Emissions				FCC PART 15 .207	
Frequency (MHz)	Amplitude (dBµV)	Frequency (MHz)	Amplitude (dBµV)	Frequency (MHz)	Amplitude (dBµV)
16.460	56.60	QP	Neutral	60.00	3.40
16.410	55.20	QP	Live	60.00	4.80
2.070	37.70	AV	Live	46.00	8.30
17.060	51.10	QP	Neutral	60.00	8.90
2.350	36.00	AV	Neutral	46.00	10.00
0.580	35.60	AV	Live	46.00	10.40
3.160	35.40	AV	Neutral	46.00	10.60
0.580	35.00	AV	Neutral	46.00	11.00
17.060	37.60	AV	Neutral	50.00	12.40
0.580	42.90	QP	Live	56.00	13.10
2.070	41.60	QP	Live	56.00	14.40
0.580	41.40	QP	Neutral	56.00	14.60
0.180	39.60	AV	Live	54.49	14.89
3.160	40.70	QP	Neutral	56.00	15.30
16.700	34.40	AV	Neutral	50.00	15.60
16.410	33.90	AV	Live	50.00	16.10
2.350	39.70	QP	Neutral	56.00	16.30
0.180	35.10	AV	Neutral	54.49	19.39
8.790	40.40	QP	Live	60.00	19.60
0.270	31.50	AV	Live	51.12	19.62
0.180	41.40	QP	Live	64.49	23.09
0.270	35.90	QP	Live	61.12	25.22
0.180	38.40	QP	Neutral	64.49	26.09
8.790	17.10	AV	Live	50.00	32.90

Plot(s) of Test Data

Plot(s) of Test Data is presented hereinafter as reference.

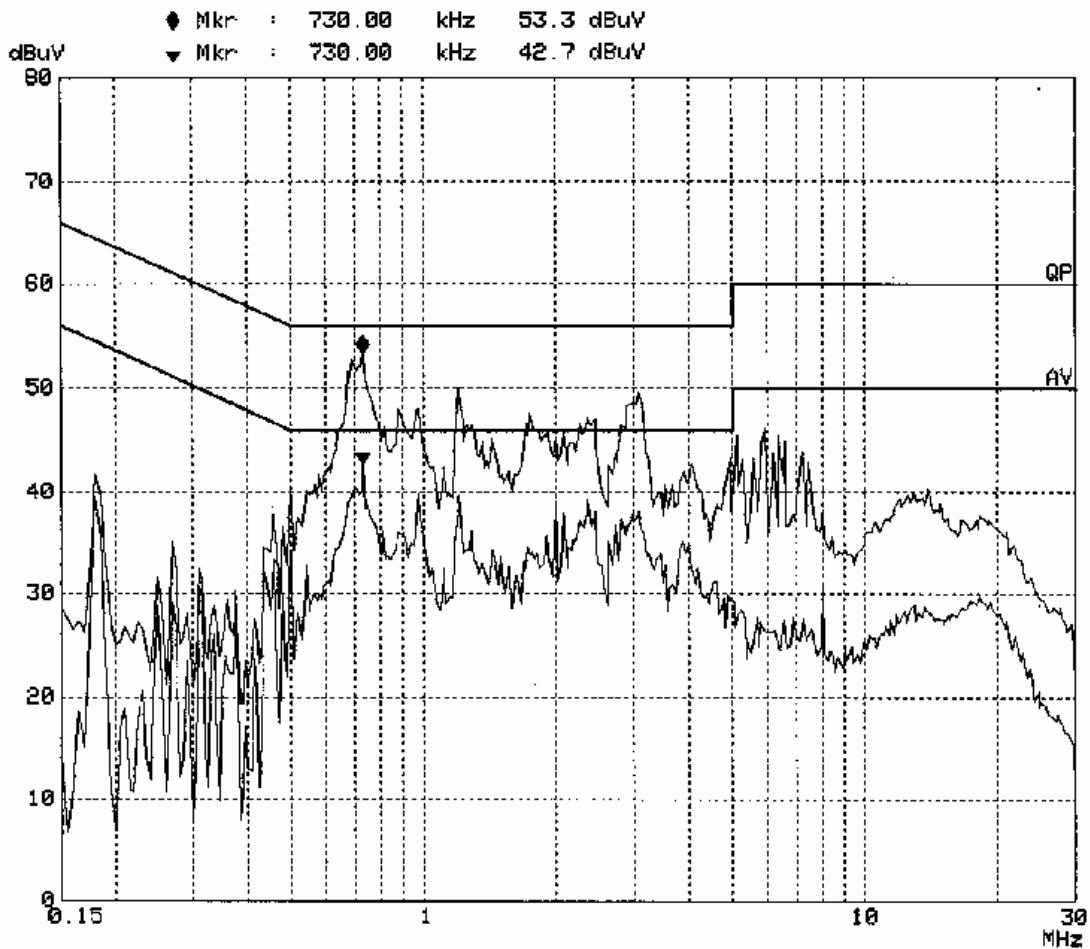
Conduction Emission Test FCC Part 15

EUT: USB WIRELESS PHONE M/N:USB-W1DL
Manuf: YEALINK
Op Cond: Running
Operator: JACK.WANG
Test Spec: AC120V/60Hz L
Comment: Temp:25'C Humi:56%
Date: 15. Mar 07 11:48



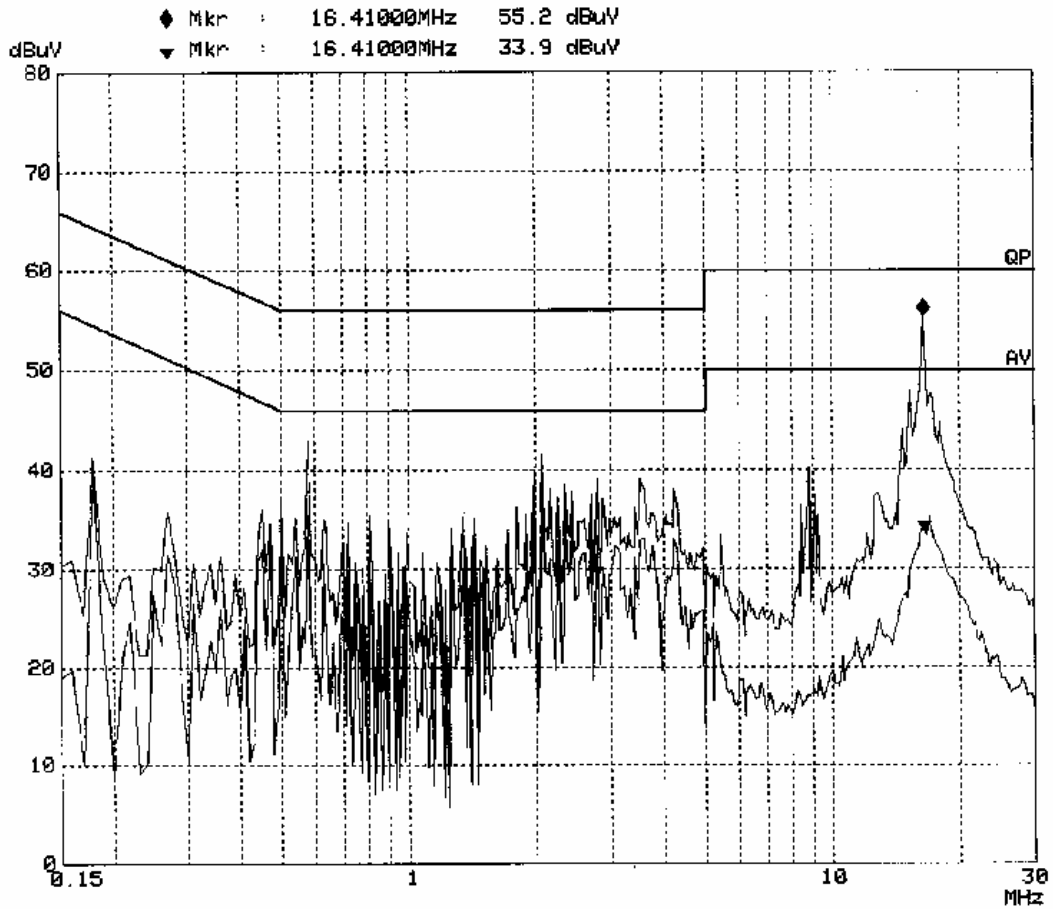
Conduction Emission Test FCC Part 15

EUT: USB WIRELESS PHONE M/N:USB-WIDL
Manuf: YEALINK
Op Cond: Running
Operator: JACK.WANG
Test Spec: AC120V/60Hz N
Comment: Temp:25'C Humi:56%
Date: 15. Mar 07 11:25



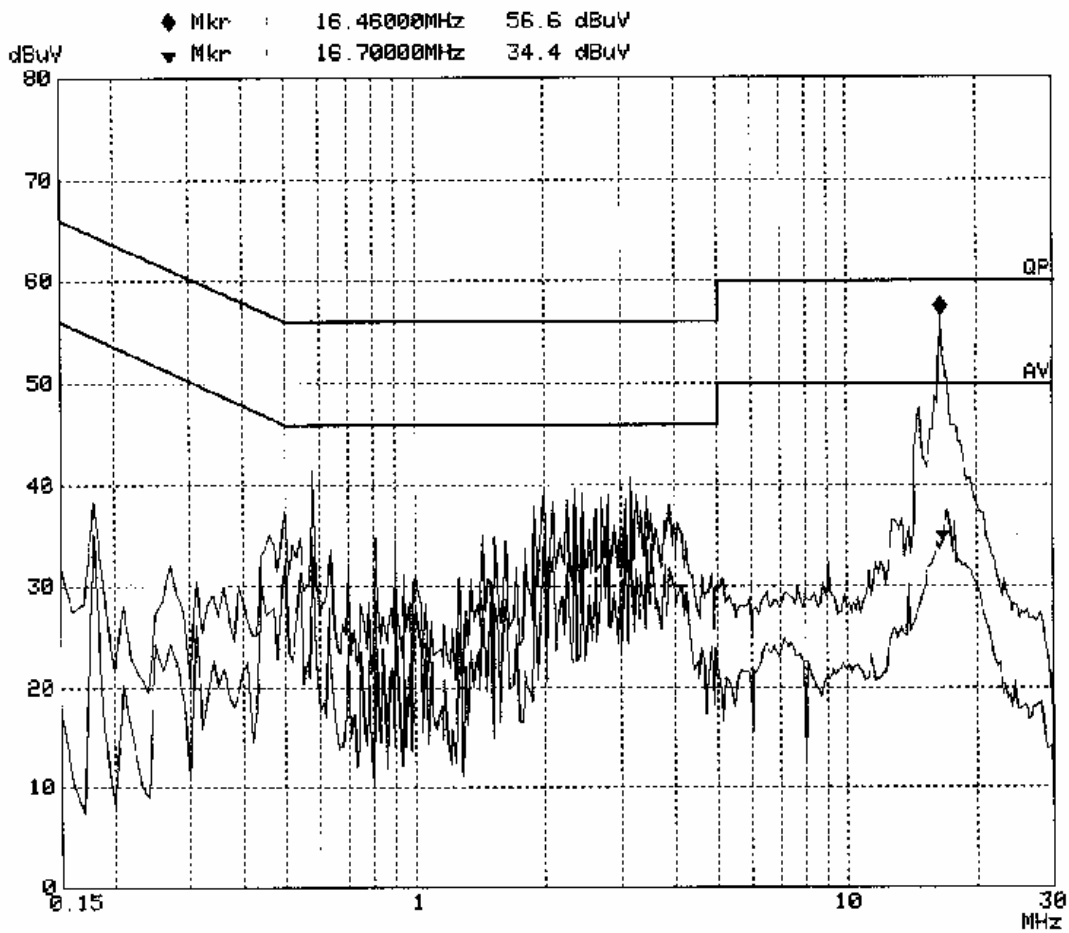
Conduction Emission Test FCC Part 15

EUT: USB WIRELESS M/N:USB-WIDL
Manuf: YEALINK
Op Cond: Charging
Operator: hansen
Test Spec: AC 230V/50Hz L
Comment: Temp:25'C Humi:56%
Date: 20. Mar 07 17:40



Conduction Emission Test FCC Part 15

EUT: USB WIRELESS M/N:USB-WIDL
Manuf: YEALINK
Op Cond: Charging
Operator: hansen
Test Spec: AC 230V/50Hz N
Comment: Temp:25°C Humi:56%
Date: 20. Mar 07 17:49



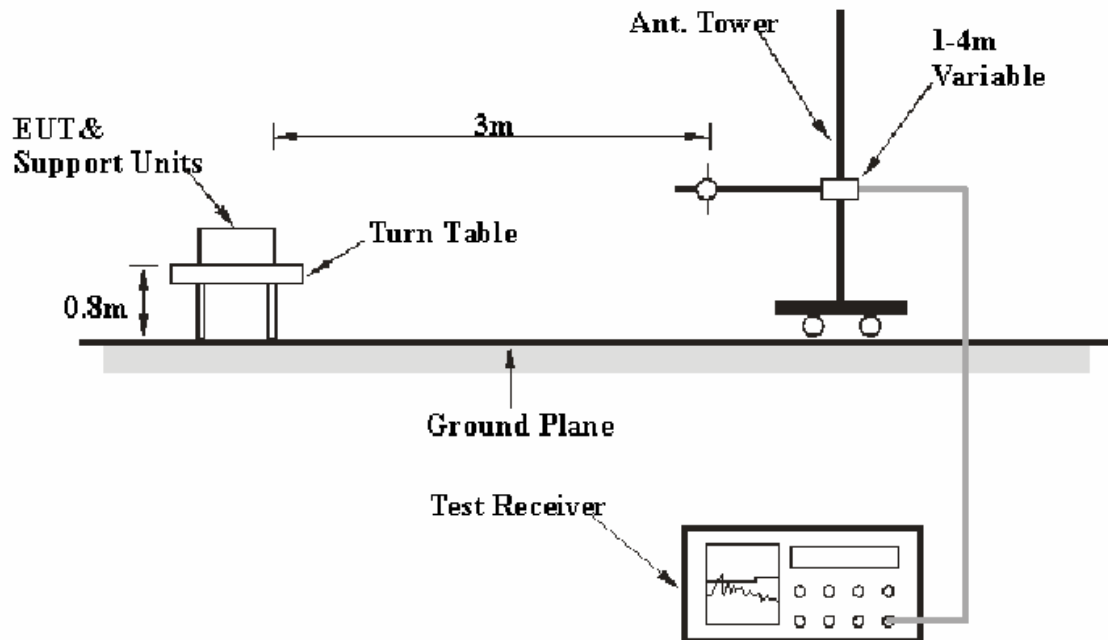
§15.205 §15.209(a) §15.249(a) - RADIATED EMISSION

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 NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at Bay Area Compliance Laboratory Corp. (Shenzhen) is ± 4.0 dB.

EUT Setup



The radiated emission tests were performed in the 3-meter Chamber B, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC 15.209 and FCC 15.249 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 25 GHz.

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>
30 – 1000 MHz	100 kHz	300 kHz
1000 MHz – 25000 MHz	1MHz	3 MHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	Spectrum Analyzer	8564E	3943A01781	2006-11-21	2007-11-21
Com-Power	Dipole Antenna	AD-100	041000	2006-09-25	2007-09-25
HP	Amplifier	8447D	2944A09795	2006-11-15	2007-11-15
HP	Amplifier	8449B	3008A00277	2006-09-29	2007-09-29
Rohde & Schwarz	EMI Test Receiver	ESCS30	DE25330	2006-03-20	2007-03-19
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2006-08-14	2007-08-14
Sunol Sciences	Horn Antenna	DRH-118	A052604	2006-09-25	2007-09-25
Sunol Sciences	Horn Antenna	SAS-200/571	135	2006-05-17	2007-05-17

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

Test Procedure

For the radiated emissions test, the host PC power cords were connected to the AC floor outlet.

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.

Corrected Amplitude & Margin Calculation

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

$$\text{Corr. Ampl.} = \text{Meter Reading} + \text{Antenna Loss} + \text{Cable Loss} - \text{Amplifier Gain}$$

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

$$\text{Margin} = \text{Limit} - \text{Corr. Ampl.}$$

Test Results Summary

According to the data in the following table, the EUT complied with the FCC Part 15.249, with the worst margin reading of:

Base:

- 19.73 dB at 39.27 MHz** in the **Horizontal** polarization, 30 -1000MHz
- 2.24 dB at 4804 MHz** in the **Horizontal** polarization, 1-25 GHz, Low channel
- 2.49 dB at 48820 MHz** in the **Horizontal** polarization, 1-25 GHz, Middle channel
- 2.37 dB at 2480 MHz** in the **Vertical** polarization, 1-25 GHz, High channel

Handset:

- 15.68 dB at 31.25 MHz** in the **Horizontal** polarization, 30 -1000MHz
- 3.58 dB at 4804 MHz** in the **Vertical** polarization, 1-25 GHz, Low channel
- 3.35 dB at 4882 MHz** in the **Vertical** polarization 1-25 GHz, Middle channel
- 4.51 dB at 4960 MHz** in the **Vertical** polarization 1-25 GHz, High channel

Test Data

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	53%
ATM Pressure:	1000mbar

The testing was performed by William Chan on 2007-02-06, 2007-02-07.

Test mode: Transmitting

Base:

30 MHz-1000MHz:

Frequency (MHz)	Meter Reading (dBuV)	Detector PK/QP/AV	Direction Degree	Height (m)	Polar H / V	Antenna Factor (dB/m)	Cable loss (dB)	Amplifier Gain (dB)	Corr. Amp. (dBuV/m)	FCC Part 15.209	
										Limit dBuV/m	Margin dB
39.27	31.30	QP	60	1.0	H	16.9	0.7	28.63	20.27	40.0	19.73
130.25	32.87	QP	60	1.2	H	12.2	1.5	28.40	18.17	43.5	25.33
212.71	36.22	QP	60	1.0	H	9.3	2.0	27.90	19.62	43.5	23.88
37.27	34.22	QP	45	1.2	V	16.9	0.7	28.63	23.17	40.0	16.83
134.11	37.36	QP	270	1.0	V	12.2	1.5	28.40	22.66	43.5	20.84
251.22	39.61	QP	90	1.2	V	9.9	2.4	27.70	24.21	46.0	21.79
31.65	33.47	QP	180	1.2	H	20.4	0.6	28.62	25.86	40.0	14.14
34.85	31.23	QP	90	1.0	H	20.4	0.6	28.62	23.62	40.0	16.38
146.75	40.82	QP	45	1.2	V	11.0	1.7	28.30	25.22	43.5	18.28
120.07	39.55	QP	60	1.2	V	12.2	1.4	28.20	24.95	43.5	18.55
39.48	31.48	QP	45	1.0	V	16.9	0.7	28.63	20.43	40.0	19.57
451.62	33.12	QP	45	1.2	H	14.8	3.5	28.62	22.78	46.0	23.22

1GHz-25GHz (Low Channel)

Frequency (MHz)	Meter Reading (dBuV)	Detector PK/QP/AV	Direction Degree	Height (m)	Polar H / V	Antenna Factor (dB/m)	Cable loss (dB)	Amplifier Gain (dB)	Corr. Amp. (dBuV/m)	Part 15.249/209	
										Limit dBuV/m	Margin dB
4804	49.22	AV	95	1.0	H	31.3	4.64	33.4	51.76	54	2.24*
4804	49.18	AV	90	1.0	V	31.3	4.64	33.4	51.72	54	2.28*
2402	95.23	AV	45	1.0	V	27.4	3.61	35.0	91.24	94	2.76*
2402	94.68	AV	90	1.0	H	27.4	3.61	35.0	90.69	94	3.31*
7206	43.68	AV	275	1.2	V	35.4	4.51	33.7	49.89	54	4.11
7206	43.27	AV	180	1.0	H	35.4	4.51	33.7	49.48	54	4.52
9608	39.58	AV	285	1.0	V	37.6	5.35	34.1	48.43	54	5.57
9608	38.71	AV	180	1.2	H	37.6	5.35	34.1	47.56	54	6.44
4804	62.51	PK	210	1.0	V	31.3	4.64	33.4	65.05	74	8.95
4804	60.52	PK	185	1.0	H	31.3	4.64	33.4	63.06	74	10.94
7206	55.63	PK	150	1.0	V	35.4	4.51	33.7	61.84	74	12.16
9608	51.62	PK	180	1.0	V	37.6	5.35	34.1	60.47	74	13.53
7206	52.88	PK	125	1.0	H	35.4	4.51	33.7	59.09	74	14.91
9608	49.86	PK	270	1.0	H	37.6	5.35	34.1	58.71	74	15.29
2402	101.55	PK	145	1.0	V	27.4	3.61	35.0	97.56	114	16.44
2402	99.56	PK	175	1.0	H	27.4	3.61	35.0	95.57	114	18.43

1GHz-25GHz (Middle Channel)

Frequency (MHz)	Meter Reading (dBuV)	Detector PK/QP/AV	Direction Degree	Height (m)	Polar H / V	Antenna Factor (dB/m)	Cable loss (dB)	Amplifier Gain (dB)	Corr. Amp. (dBuV/m)	Part 15.249/209	
										Limit dBuV/m	Margin dB
4882	48.97	AV	95	1.0	H	31.3	4.64	33.4	51.51	54	2.49*
4882	48.77	AV	90	1.0	V	31.3	4.64	33.4	51.31	54	2.69*
2441	94.85	AV	45	1.0	V	27.4	3.61	35.0	90.86	94	3.14*
2441	93.61	AV	150	1.0	H	27.4	3.61	35.0	89.62	94	4.38
9764	40.12	AV	360	1.0	V	37.6	5.35	34.1	48.97	54	5.03
7323	42.65	AV	45	1.0	H	35.4	4.51	33.7	48.86	54	5.14
7323	42.49	AV	275	1.0	V	35.4	4.51	33.7	48.70	54	5.30
9764	37.87	AV	195	1.0	H	37.6	5.35	34.1	46.72	54	7.28
4882	62.57	PK	270	1.0	V	31.3	4.64	33.4	65.11	74	8.89
4882	60.87	PK	175	1.0	H	31.3	4.64	33.4	63.41	74	10.59
9764	52.91	PK	280	1.0	V	37.6	5.35	34.1	61.76	74	12.24
7323	54.69	PK	265	1.0	V	35.4	4.51	33.7	60.90	74	13.10
9764	49.52	PK	60	1.0	H	37.6	5.35	34.1	58.37	74	15.63
7323	51.64	PK	185	1.0	H	35.4	4.51	33.7	57.85	74	16.15
2441	100.94	PK	45	1.0	V	27.4	3.61	35.0	96.95	114	17.05
2441	98.95	PK	60	1.0	H	27.4	3.61	35.0	94.96	114	19.04

1GHz-25GHz (High Channel)

Frequency (MHz)	Meter Reading (dBuV)	Detector PK/QP/AV	Direction Degree	Height (m)	Polar H / V	Antenna Factor (dB/m)	Cable loss (dB)	Amplifier Gain (dB)	Corr. Amp. (dBuV/m)	Part 15.249/209	
										Limit dBuV/m	Margin dB
2480	95.62	AV	45	1.2	V	27.4	3.61	35.0	91.63	94	2.37*
4960	48.91	AV	90	1.0	V	31.3	4.64	33.4	51.45	54	2.55*
4960	47.58	AV	95	1.0	H	31.3	4.64	33.4	50.12	54	3.88*
2480	94.02	AV	0	1.0	H	27.4	3.61	35.0	90.03	94	3.97*
7440	43.68	AV	45	1.0	V	35.4	4.51	33.7	49.89	54	4.11
9920	40.51	AV	145	1.0	V	37.6	5.35	34.1	49.36	54	4.64
7440	42.17	AV	45	1.0	H	35.4	4.51	33.7	48.38	54	5.62
9920	38.17	AV	210	1.0	H	37.6	5.35	34.1	47.02	54	6.98
4960	62.95	PK	65	1.0	V	31.3	4.64	33.4	65.49	74	8.51
4960	59.89	PK	180	1.0	H	31.3	4.64	33.4	62.43	74	11.57
9920	52.77	PK	280	1.2	V	37.6	5.35	34.1	61.62	74	12.38
7440	54.82	PK	180	1.0	V	35.4	4.51	33.7	61.03	74	12.97
9920	50.69	PK	120	1.2	H	37.6	5.35	34.1	59.54	74	14.46
2480	101.84	PK	125	1.0	V	27.4	3.61	35.0	97.85	114	16.15
7440	51.35	PK	180	1.2	H	35.4	4.51	33.7	57.56	74	16.44
2480	99.85	PK	30	1.0	H	27.4	3.61	35.0	95.86	114	18.14

Handset:

30 MHz-1000MHz:

Frequency (MHz)	Meter Reading (dBuV)	Detector PK/QP/AV	Direction Degree	Height (m)	Polar H / V	Antenna Factor (dB/m)	Cable loss (dB)	Amplifier Gain (dB)	Corr. Amp. (dBuV/m)	FCC Part 15.209	
										Limit dBuV/m	Margin dB
31.25	31.94	QP	180	1.2	H	20.4	0.6	28.62	24.32	40.0	15.68
38.17	32.18	QP	45	1.2	V	16.9	0.7	28.63	21.13	40.0	18.87
36.24	32.10	QP	90	1.0	H	16.9	0.7	28.63	21.05	40.0	18.95
521.35	35.38	QP	90	1.2	V	15.9	3.8	28.75	26.37	46.0	19.63
506.42	35.60	QP	45	1.2	V	15.9	3.4	28.76	26.15	46.0	19.85
37.47	31.13	QP	60	1.0	H	16.9	0.7	28.63	20.08	40.0	19.92
210.07	40.54	QP	60	1.2	V	9.3	2.0	27.90	23.94	46.0	22.06
452.91	34.00	QP	45	1.2	H	14.8	3.5	28.62	23.66	46.0	22.34
48.25	35.43	QP	45	1.0	V	9.6	0.8	28.62	17.23	40.0	22.77
234.11	36.88	QP	270	1.0	V	9.7	2.2	27.70	21.08	46.0	24.92
132.51	32.68	QP	60	1.2	H	12.2	1.5	28.40	17.98	43.5	25.52
215.62	33.13	QP	60	1.0	H	9.4	2.1	27.90	16.73	43.5	26.77

1GHz-25GHz (Low Channel)

Frequency (MHz)	Meter Reading (dBuV)	Detector PK/QP/AV	Direction Degree	Height (m)	Polar H / V	Antenna Factor (dB/m)	Cable loss (dB)	Amplifier Gain (dB)	Corr. Amp. (dBuV/m)	Part 15.249/209	
										Limit dBuV/m	Margin dB
4804	47.88	AV	90	1.0	V	31.3	4.64	33.4	50.42	54	3.58*
7206	42.65	AV	180	1.2	V	35.4	4.51	33.7	48.86	54	5.14
4804	46.25	AV	90	1.5	H	31.3	4.64	33.4	48.79	54	5.21
9608	39.78	AV	90	1.0	V	37.6	5.35	34.1	48.63	54	5.37
9608	39.24	AV	180	1.2	H	37.6	5.35	34.1	48.09	54	5.91
7206	40.86	AV	180	1.2	H	35.4	4.51	33.7	47.07	54	6.93
4804	59.87	PK	180	1.2	V	31.3	4.64	33.4	62.41	74	11.59
4804	58.97	PK	180	1.2	H	31.3	4.64	33.4	61.51	74	12.49
7206	53.86	PK	45	1.2	V	35.4	4.51	33.7	60.07	74	13.93
2402	82.65	AV	45	1.5	H	27.4	3.61	35.0	78.66	94	15.34
9608	49.58	PK	180	1.2	V	37.6	5.35	34.1	58.43	74	15.57
7206	50.85	PK	45	1.2	H	35.4	4.51	33.7	57.06	74	16.94
9608	47.68	PK	45	1.2	H	37.6	5.35	34.1	56.53	74	17.47
2402	88.27	PK	120	1.5	H	27.4	3.61	35.0	92.68	114	21.32
2402	90.28	PK	90	1.5	V	27.4	3.61	35.0	86.29	114	27.71
2402	54.82	AV	45	1.0	V	27.4	3.61	35.0	50.83	94	43.17

1GHz-25GHz (Middle Channel)

Frequency (MHz)	Meter Reading (dBuV)	Detector PK/QP/AV	Direction Degree	Height (m)	Polar H / V	Antenna Factor (dB/m)	Cable loss (dB)	Amplifier Gain (dB)	Corr. Amp. (dBuV/m)	Part 15.249/209	
										Limit dBuV/m	Margin dB
4882	48.11	AV	0	1.0	V	31.3	4.64	33.4	50.65	54	3.35*
7323	41.98	AV	360	1.0	V	35.4	4.51	33.7	48.19	54	5.81
9764	39.22	AV	270	1.0	V	37.6	5.35	34.1	48.07	54	5.93
7323	41.25	AV	270	1.0	H	35.4	4.51	33.7	47.46	54	6.54
4882	44.58	AV	125	1.0	H	31.3	4.64	33.4	47.12	54	6.88
9764	37.21	AV	90	1.2	H	37.6	5.35	34.1	46.06	54	7.94
4882	61.76	PK	180	1.2	V	31.3	4.64	33.4	64.30	74	9.70
4882	59.16	PK	85	1.2	H	31.3	4.64	33.4	61.70	74	12.30
2441	85.64	AV	180	1.0	V	27.4	3.61	35.0	81.65	94	12.35
7323	54.62	PK	45	1.2	V	35.4	4.51	33.7	60.83	74	13.17
9764	51.02	PK	180	1.0	V	37.6	5.35	34.1	59.87	74	14.13
2441	83.52	AV	90	1.0	H	27.4	3.61	35.0	79.53	94	14.47
7323	52.68	PK	160	1.0	H	35.4	4.51	33.7	58.89	74	15.11
9764	48.68	PK	45	1.0	H	37.6	5.35	34.1	57.53	74	16.47
2441	87.65	PK	215	1.0	H	27.4	3.61	35.0	92.68	114	21.32
2441	89.81	PK	90	1.0	V	27.4	3.61	35.0	85.82	114	28.18

1GHz-25GHz (High Channel)

Frequency (MHz)	Meter Reading (dBuV)	Detector PK/QP/AV	Direction Degree	Height (m)	Polar H / V	Antenna Factor (dB/m)	Cable loss (dB)	Amplifier Gain (dB)	Corr. Amp. (dBuV/m)	Part 15.249/209	
										Limit dBuV/m	Margin dB
4960	46.95	AV	45	1.2	V	31.3	4.64	33.4	49.49	54	4.51
4960	46.85	AV	125	1.0	H	31.3	4.64	33.4	49.39	54	4.61
7440	42.33	AV	270	1.0	H	35.4	4.51	33.7	48.54	54	5.46
7440	42.05	AV	180	1.0	V	35.4	4.51	33.7	48.26	54	5.74
9920	38.11	AV	90	1.2	H	37.6	5.35	34.1	46.96	54	7.04
9920	37.94	AV	45	1.0	V	37.6	5.35	34.1	46.79	54	7.21
4960	62.88	PK	270	1.2	V	31.3	4.64	33.4	65.42	74	8.58
4960	59.61	PK	160	1.2	H	31.3	4.64	33.4	62.15	74	11.85
2480	85.32	AV	45	1.0	V	27.4	3.61	35.0	81.33	94	12.67
2480	84.22	AV	90	1.2	H	27.4	3.61	35.0	80.23	94	13.77
7440	53.88	PK	45	1.2	V	35.4	4.51	33.7	60.09	74	13.91
9920	49.91	PK	45	1.0	H	37.6	5.35	34.1	58.76	74	15.24
9920	49.22	PK	180	1.0	V	37.6	5.35	34.1	58.07	74	15.93
7440	50.63	PK	160	1.0	H	35.4	4.51	33.7	56.84	74	17.16
2480	87.91	PK	135	1.0	H	27.4	3.61	35.0	92.68	114	21.32
2480	90.21	PK	90	1.0	V	27.4	3.61	35.0	86.22	114	27.78

* Within the measurement uncertainty

§15.249(d) – OUT OF BAND EMISSION

Standard Applicable

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 §15.209, whichever is the lesser attenuation.

Test Procedure

With the EUT’s antenna attached, the EUT’s radiated emission power was received by the test antenna which was connected to the spectrum analyzer with the START and STOP frequencies set to the EUT’s operation band.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	Spectrum analyzer	8564E	3943A01781	2006-11-22	2007-11-22
HP	Amplifier	HP8447E	1937A01046	2006-11-15	2007-11-15
HP	Preamplifier	8449B	3008A00277	2006-09-29	2007-09-29
SUNOL SCIENCES	Horn Antenna	DRH-118	A052604	2006-09-25	2007-09-25

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

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	55%
ATM Pressure:	1016mbar

The testing was performed by William Chan on 2007-03-16.

Base:

Frequency (MHz)	Emission (dBµV/m)	Limit (dBµV/m)
2483.6	44.93	54
2399.9	43.44	54

Handset:

Frequency (MHz)	Emission (dBµV/m)	Limit (dBµV/m)
2399.9	41.34	54
2483.6	45.97	54

Test Result: Pass