

FCC PART 15 CLASS B

EMI MEASUREMENT AND TEST REPORT

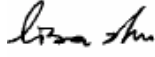
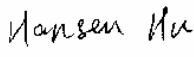

For

XIAMEN YEALINK NETWORK TECHNOLOGY CO., LTD.

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

Model: USB-P1K

September 26, 2005

This Report Concerns: <input checked="" type="checkbox"/> Original Report	Equipment Type: USB Phone
Test Engineer: Lisa Zhu  Hansen Hu 	
Report Number: RSZ05090701	
Test Date: September 12-22, 2005	
Reviewed By: Chris Zeng 	
Prepared By: Bay Area Compliance Lab Corp. (ShenZhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone, ShenZhen, Guangdong 518038, P.R.China Tel: +86-755-33320018 Fax: +86-755-33320008	

Note: The test report is specially limited to the above company and this particular sample only. It may not be duplicated without prior written consent of Bay Area Compliance Lab Corp. (ShenZhen). This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the US Government.

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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The XIAMEN YEALINK NETWORK TECHNOLOGY CO., LTD. 's product, model USB-P1K or the "EUT" as referred to in this report was a USB Phone which measures approximately 12.0 cm L x 4.3 cm W x 2.4 cm H, rated input voltage: DC 5V.

** The test data gathered are from production sample, serial number: 0509009, provided by the manufacturer.*

Objective

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

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

Related Submittal(s)/Grant(s)

No related submittal(s).

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 Lab 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 Lab Corp. (ShenZhen) to collect radiated and conducted emission measurement data is located in the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone, ShenZhen, Guangdong 518038, P.R.China.

Test site at Bay Area Compliance Lab 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 Lab 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
Intel	Motherboard	D865GKD	11S19R1949ZJ1WCB46J1J4	DoC
IBM	Power	HIPRO-A2307F3T	11S49P2191ZJ1TAR47D1PG	DoC
IBM	Hard Disk	IC35L090AW207-0	VNVC32G3GGS52T	DoC
ALPS	3.5' Floppy	06P5226	11S06P5226ZJ1W25328053	DoC
Hitachi-LG	DVD-Rom	LTN-489S	B4F511412	DoC
Intel	Ethernet	PRO 10/100 VE	N/A	DoC
ProMOS	Memory	V826616J24SATG-C0	BD070964H	DoC
Intel	CPU	Pentium4 2800MHz	N/A	DoC

Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number	FCC ID
IBM	PC	ThinkCentre A50	99Y5681	DoC
Logitech	Keyboard	Y-SM48	SY513U68933	DoC
Logitech	Mouse	M-SAW83A	HCA31707689	DoC
IBM	PC	ThinkCentre A50	99Y5681	DoC
HP	Laser Jet5L	C3941A	JPTVOB2337	DoC
SAST	Modem	AEM-2100	0293	DoC

External I/O Cable

Cable Description	Length (M)	From/Port	To
Shielded Detachable Keyboard Cable	1.50	Keyboard Port / Host	Keyboard
Shielded Detachable Mouse Cable	1.50	Mouse Port / Host	Mouse
Shielded Detachable Printer Cable	1.20	Parallel Port / Host	Printer
Shielded Detachable Serial Cable	1.20	Serial Port / Host	Modem
Shielded Detachable VGA Cable	1.50	VGA Port / Host	Monitor
Shielded Detachable USB Cable with two cores	2.00	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

The EUT exercising program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The software offered by Bay Area Compliance Lab Corp. (ShenZhen) can exercise the EUT as data transferring between the EUT and the host.

Special Accessories

The special Accessories were supplied by Manufacturer.

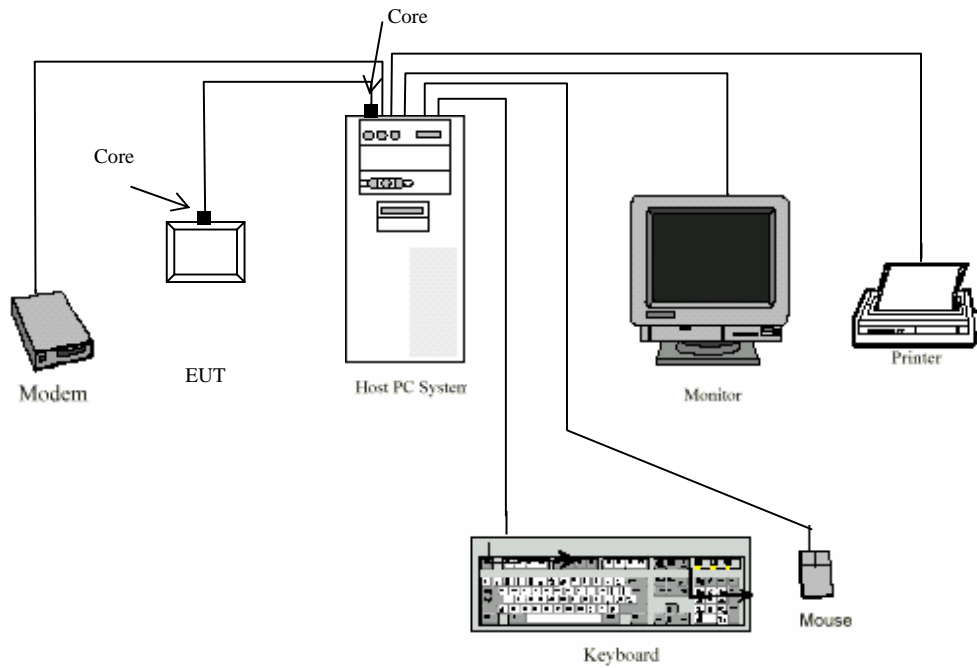
Block Diagram/Schematics

Please refer to the Exhibit C.

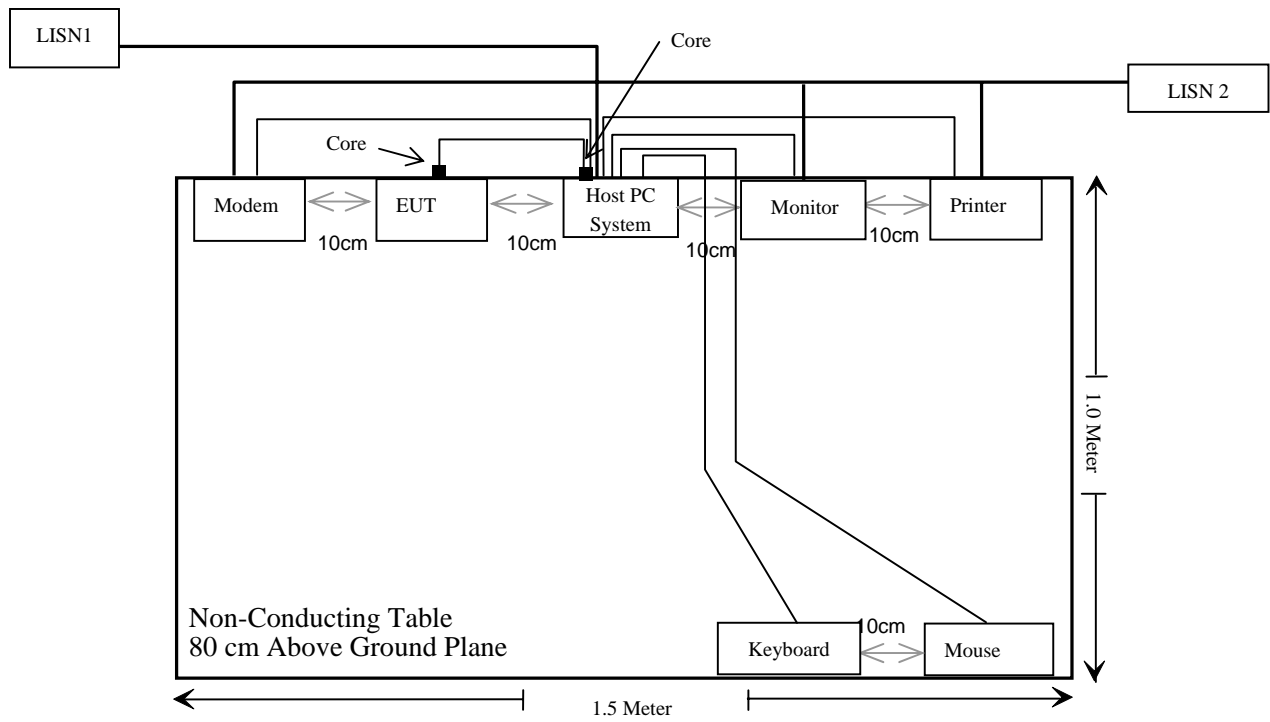
Equipment Modifications

Bay Area Compliance Lab Corp. (ShenZhen) has not done any modification on the EUT.

Configuration of Test Setup



Block Diagram of Test Setup



SUMMARY OF TEST REPORT

RULE	DESCRIPTION	RESULTS
§15.107	Conducted Emission	Compliant
§15.109	Radiated Emission	Compliant*
§15.33	Frequency of Investigation	Compliant, Note 1
§15.27	Special Accessories	Compliant

Note 1: The highest clocks of the EUT was 24.00 kHz.

* Within measurement uncertainty

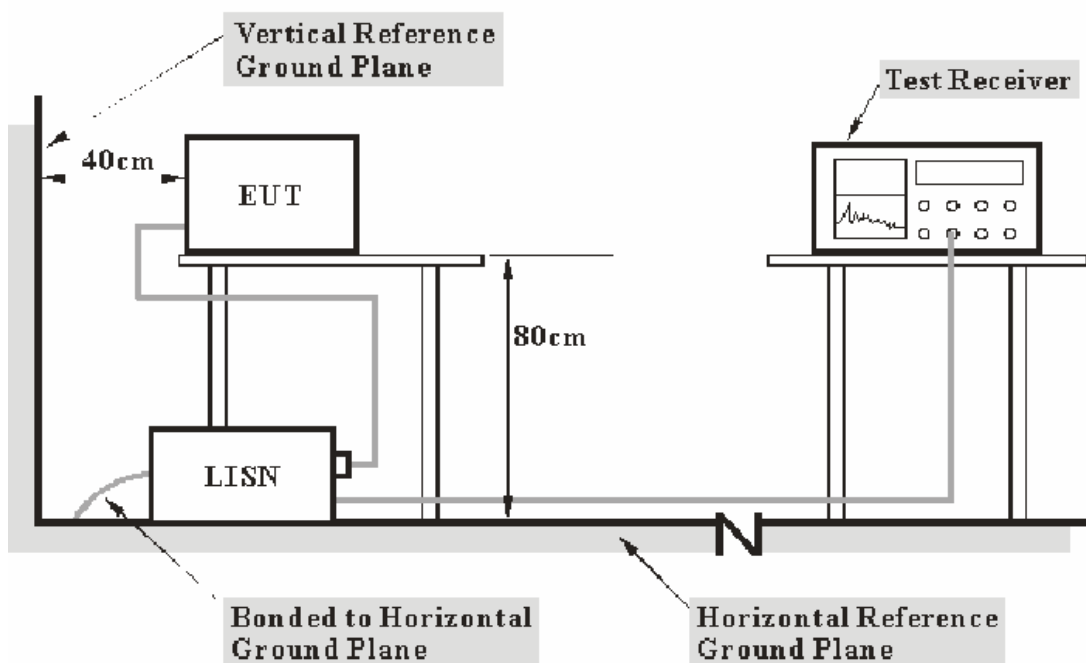
§15.107 - CONDUCTED EMISSION

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 Lab Corp. (ShenZhen) is ± 3.2 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 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 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
Com-Power	L.I.S.N.	LI-200	12005	N/A	N/A
Com-Power	L.I.S.N.	LI-200	12008	N/A	N/A
Rohde & Schwarz	EMI Test Receiver	ESCS30	830245/006	2005-1-26	2006-1-26
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2005-2-28	2006-2-28

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

* **Statement of Traceability:** Bay Area Compliance Lab 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 was connected to the outlet of the first LISN, the monitor and all other support equipment power cords were connected to the outlet of the second LISN.

Maximizing procedure were 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 Class B, with the worst margin reading of:

-16.80 dB at 11.385 MHz in the **Line** conductor mode.

Test Data

Environmental Conditions

Temperature:	27 ° C
Relative Humidity:	58%
ATM Pressure:	1000mbar

The testing was performed by Hansen Hu on 2005-9-12.

Test Mode: Running

LINE CONDUCTED EMISSIONS				FCC PART 15 CLASS B	
Frequency MHz	Amplitude dBµV	Detector QP/AV	Phase Line/Neutral	Limit dBµV	Margin dB
11.385	43.20	QP	Line	60.00	-16.80
10.950	42.90	QP	Neutral	60.00	-17.10
3.870	28.60	AV	Neutral	46.00	-17.40
0.985	35.90	QP	Line	56.00	-20.10
11.385	29.60	AV	Line	50.00	-20.40
0.985	35.00	QP	Neutral	56.00	-21.00
3.870	34.10	QP	Neutral	56.00	-21.90
1.275	34.00	QP	Line	56.00	-22.00
0.985	23.40	AV	Line	46.00	-22.60
0.985	23.30	AV	Neutral	46.00	-22.70
2.365	33.20	QP	Line	56.00	-22.80
1.865	33.10	QP	Neutral	56.00	-22.90
7.005	36.80	QP	Neutral	60.00	-23.20
6.630	36.00	QP	Line	60.00	-24.00
0.180	30.30	AV	Line	54.49	-24.19
1.275	21.50	AV	Line	46.00	-24.50
10.950	24.90	AV	Neutral	50.00	-25.10
0.175	29.00	AV	Neutral	54.72	-25.72
6.630	23.50	AV	Line	50.00	-26.50
1.865	19.40	AV	Neutral	46.00	-26.60
7.005	21.40	AV	Neutral	50.00	-28.60
0.180	35.50	QP	Line	64.49	-28.99
0.175	35.70	QP	Neutral	64.72	-29.02
2.365	16.20	AV	Line	46.00	-29.80

Plot(s) of Test Data

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

Conducted Disturbance Test FCC part 15

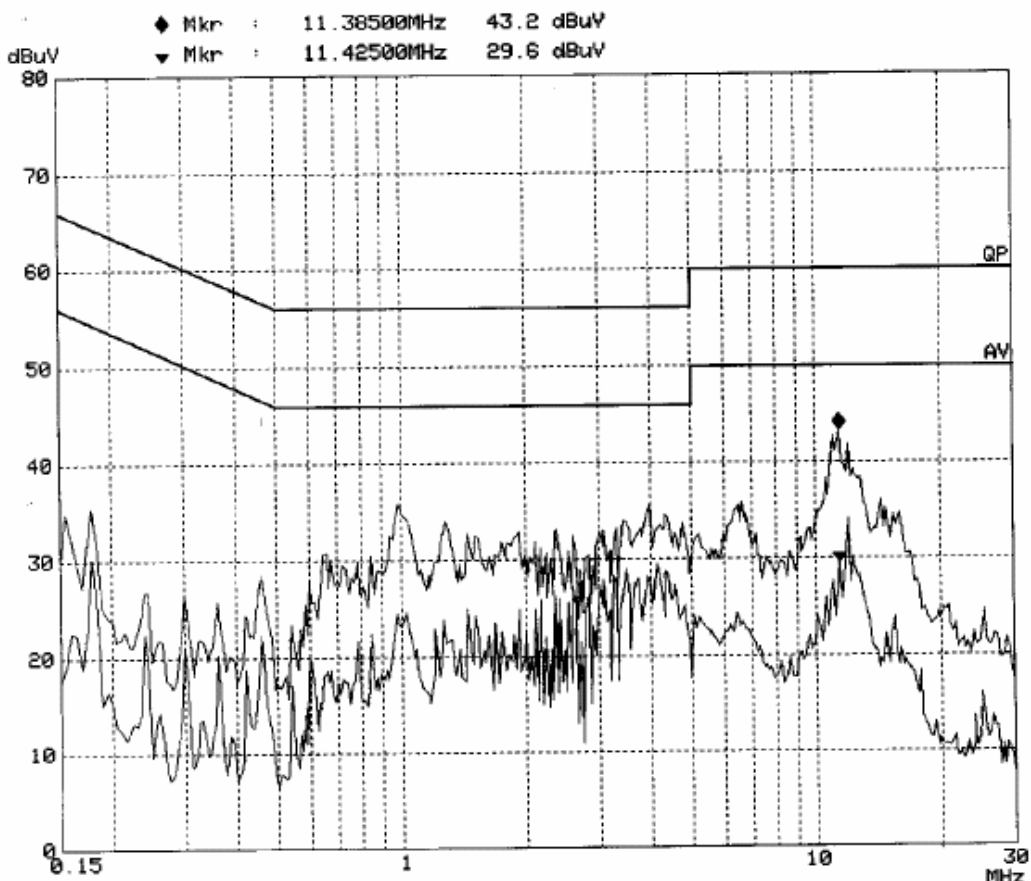
EUT: USB Phone M/N:USB-PIK
 Manuf: YEALINK
 Op Cond: Running
 Operator: Hansen
 Test Spec: AC 120V/60Hz L
 Comment: Temp:27
 Humi:58%
 Date: 12. Sep 05 15:23

Scan Settings (1 Range)

Frequencies			Receiver Settings			
Start	Stop	Step	IF BW	Detector	M-Time	Atten Preamp
150k	30M	5k	9k	PK+AV	20ms	AUTO LN OFF

Transducer No.	Start	Stop	Name
1	9k	30M	FACTOR

Final Measurement: x QP / + AV
 Meas Time: 1 s
 Subranges: 25
 Acc Margin: 6dB



Conducted Disturbance Test FCC part 15

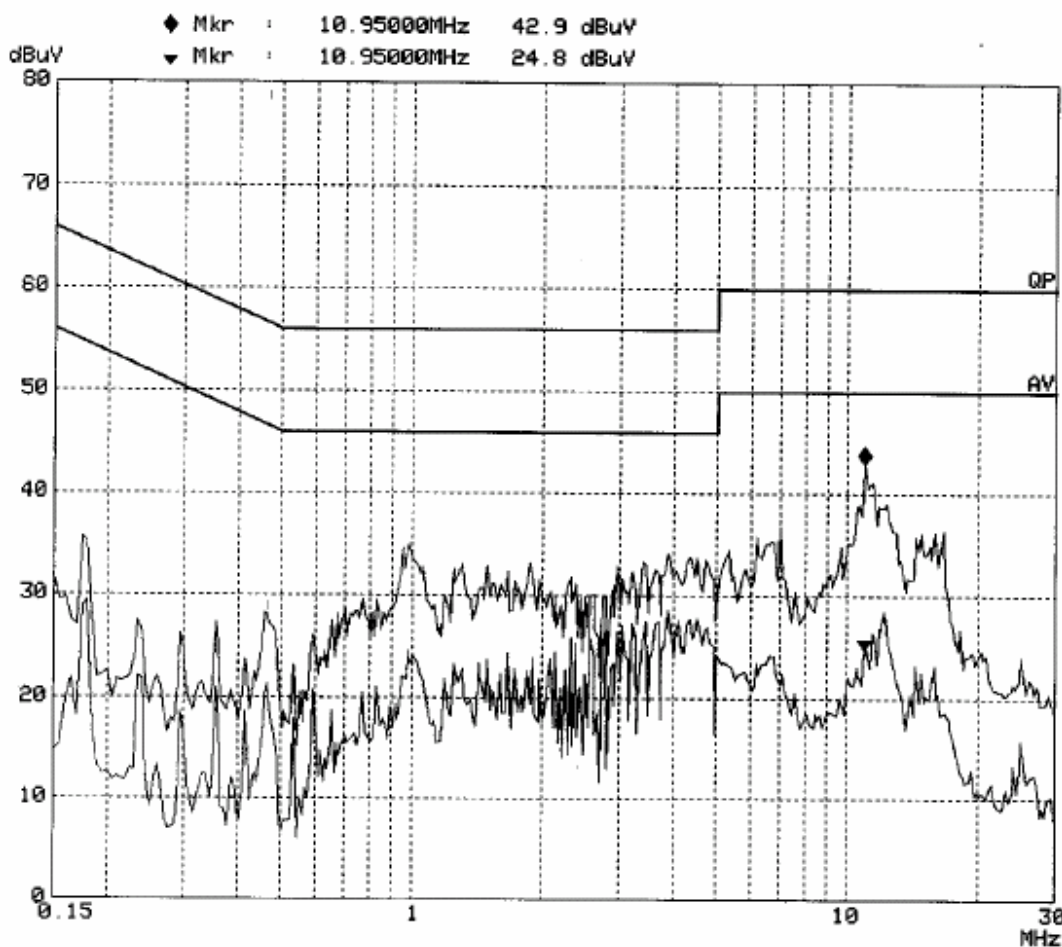
EUT: USB Phone M/N:USB-PIK
 Manuf: YEALINK
 Op Cond: Running
 Operator: Hansen
 Test Spec: AC 120V/60Hz N
 Comment: Temp:27
 Humi:58%
 Date: 12. Sep 05 14:53

Scan Settings (1 Range)

Frequencies			Receiver Settings			
Start	Stop	Step	IF BW	Detector	M-Time	Atten Preamp
150k	30M	5k	9k	PK+AV	20ms AUTO LN	OFF

Transducer No.	Start	Stop	Name
1	9k	30M	FACTOR

Final Measurement: x QP / + AV
 Meas Time: 1 s
 Subranges: 25
 Acc Margin: 6dB



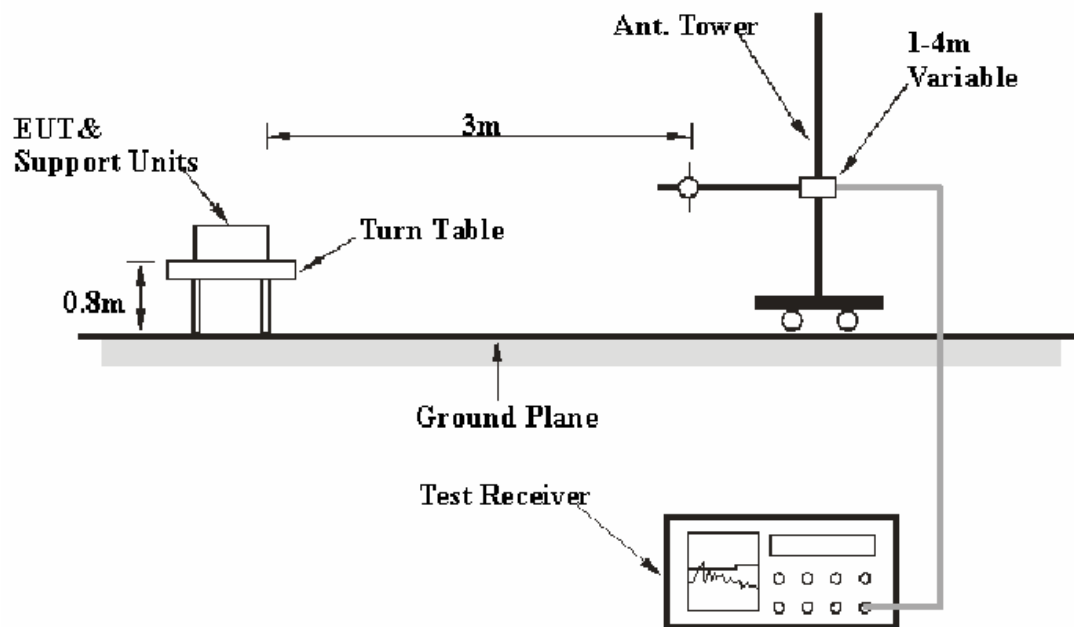
§15.109 - RADIATED EMISSION

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 Lab Corp. (ShenZhen) is ± 4.4 dB.

EUT Setup



The radiated emission tests were performed in the 3 meters chamber A test site, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC Part 15 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>IF B/W</i>
30 – 1000 MHz	100 kHz	100 kHz	120 kHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	8447E	1937A01046	2005-8-17	2006-8-17
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2005-8-17	2006-8-17
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2005-4-28	2006-4-28

* **Statement of Traceability:** Bay Area Compliance Lab 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 and all support equipment 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 for Class B. The equation for margin calculation is as follows:

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

Test Results Summary

According to the data in the following table, the EUT complied with the FCC Part 15 Class B, with the worst margin reading of:

-1.9 dB at 36.77 MHz in the Vertical polarization.

Test Data

Environmental Conditions

Temperature:	27 °C
Relative Humidity:	58 %
ATM Pressure:	1015 mbar

The testing was performed by Lisa Zhu on 2005-9-22.

Test mode: Running

INDICATED		TABLE	ANTENNA		CORRECTION FACTOR			CORRECTED AMPLITUDE	FCC PART 15		
Frequency	Meter Reading	Angle	Height	Polar	Antenna Loss	Cable Loss	Amp.	Corr. Ampl.	Limit	Margin	PK/AV/QP
MHz	dB	Degree	Meter	H/ V	dB	dB	dB	dBµV/m	dBµV/m	dB	
36.77	48.6	45	1.2	V	17.7	0.6	28.8	38.1	40.0	-1.9	QP
122.83	53.9	45	1.2	H	14.0	1.1	28.5	40.5	43.5	-3.0	PK
114.51	55.6	180	1.2	V	12.2	1.0	28.5	40.3	43.5	-3.2	PK
61.35	56.7	60	1.0	V	8.1	0.8	28.7	36.8	40.0	-3.2	PK
147.4	53.9	60	1.2	H	13.4	1.1	28.5	39.9	43.5	-3.6	PK
155.91	54.0	270	1.0	H	12.8	1.1	28.4	39.5	43.5	-4.0	PK
130.84	52.3	45	1.0	H	14.5	1.1	28.5	39.4	43.5	-4.1	PK
139.36	52.6	90	1.2	H	14.2	1.1	28.5	39.4	43.5	-4.1	PK
110.57	54.6	90	1.0	V	12.2	1.0	28.5	39.3	43.5	-4.2	PK
171.99	54.0	45	1.2	H	12.3	1.2	28.2	39.3	43.5	-4.2	PK
106.76	54.9	60	1.0	V	11.0	1.0	28.5	38.4	43.5	-5.1	PK
102.36	56.3	60	1.2	V	9.6	1.0	28.5	38.4	43.5	-5.1	PK

Plot(s) of Test Data

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



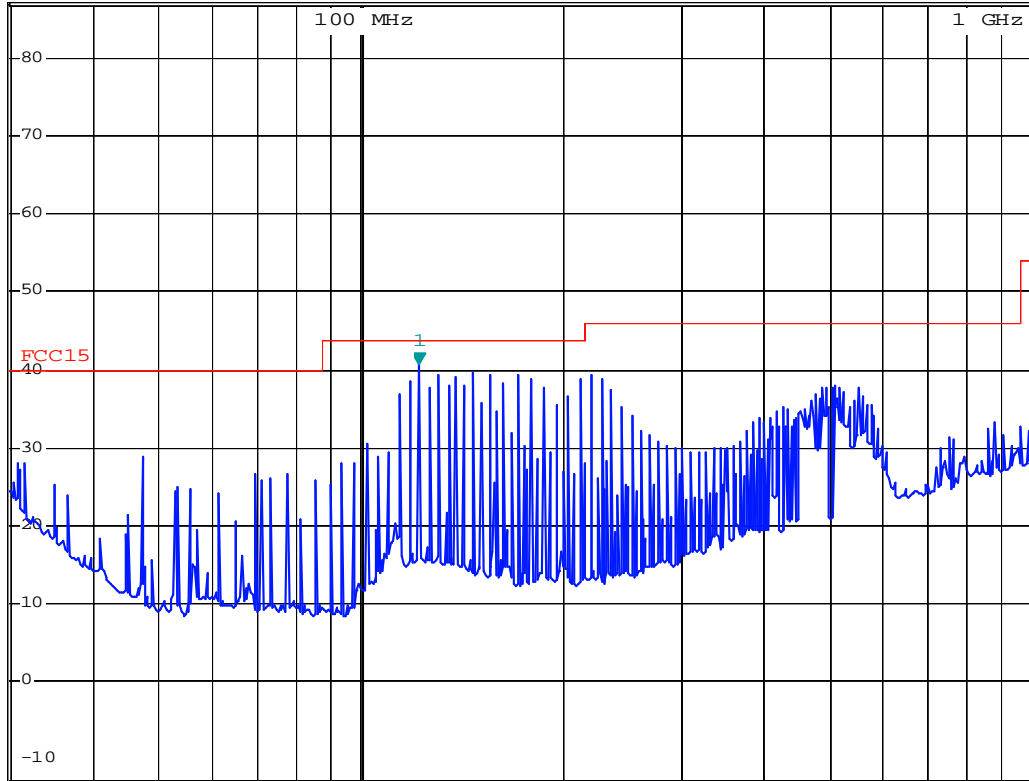
*RBW 100 kHz Marker 1 [T1]
*VBW 300 kHz 40.54 dBμV
*SWT 300 ms 122.833976174 MHz

Ref 87 dBμV

*Att 10 dB

122.833976174 MHz

1 PK
MAXH



Start 30 MHz

Stop 1 GHz

YEALINK USB PHONE USB-P1K Running (Horizontal)

Date: 22.SEP.2005 11:30:42

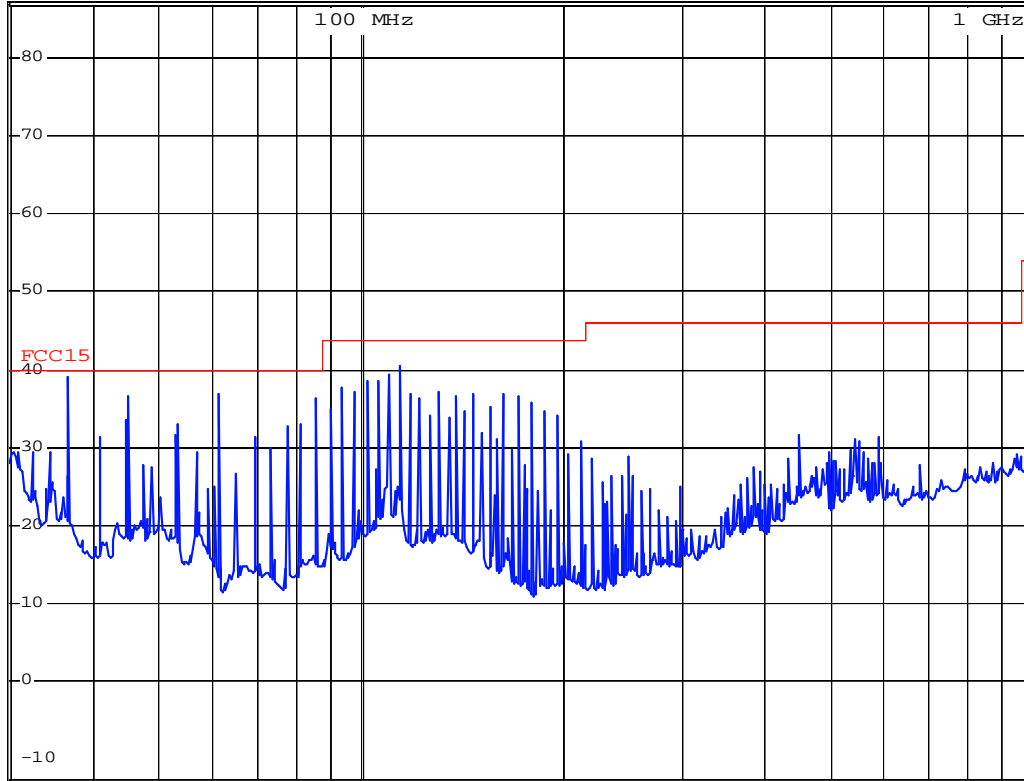


*RBW 100 kHz
*VBW 300 kHz
*SWT 300 ms

Ref 87 dBμV

*Att 10 dB

1 PK
MAXH



Center 173.2050808 MHz

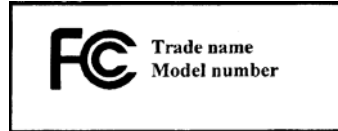
Span 970 MHz

YEALINK USB PHONE USB-P1K Running (Vertical)

Date: 22.SEP.2005 11:44:30

§15.19, §15.21, §15.27, §15.105 - FCC PRODUCT LABELING AND WARNING STATEMENT

Proposed FCC Label Format



Specifications: Text is Black or white in color and is left justified. Labels are printed in indelible ink on permanent adhesive backing or silk-screened onto the EUT or shall be affixed at a conspicuous location on the EUT.

Location of Label on EUT

FCC Label Location



FCC Warning Statement

The FCC labels should contain FCC statement in FCC 15 .19 paragraph (3). If the EUT is too small, the statement could contain in the product manual. A sample of the statement is presented hereinafter as reference.

“ This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

EXHIBIT A - EUT PHOTOGRAPHS

EUT-Front View



EUT-Rear View



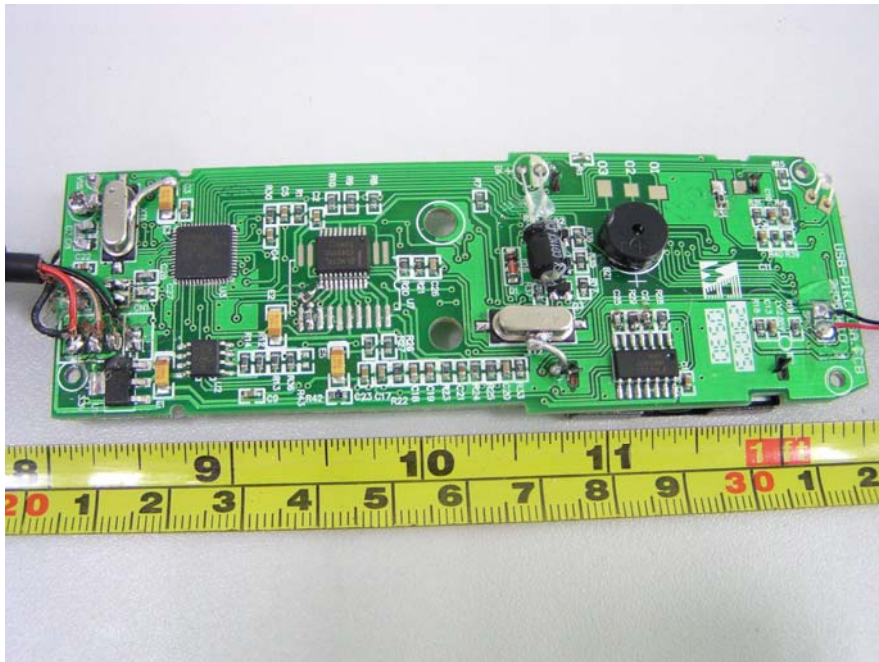
EUT-Uncovered View



EUT-Inside View



EUT- PCB Front View



EUT- PCB Rear View

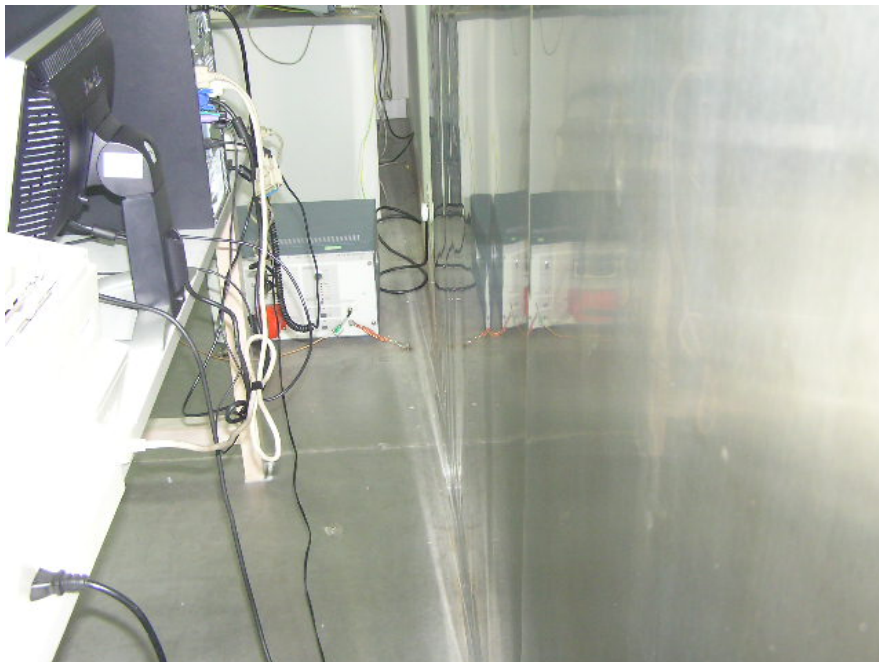


EXHIBIT B - TEST SETUP PHOTOGRAPHS

Conducted Emission-Front View



Conducted Emission-Side View



Radiated Emission - Front View



Radiated Emission – Rear View



EXHIBIT C –BLOCK DIAGRAM / SCHEMATICS

Not Available at Time of Test

EXHIBIT D – USER MANUAL

Not Available at Time of Test