

FCC PART 15.249
EMI MEASUREMENT AND TEST REPORT

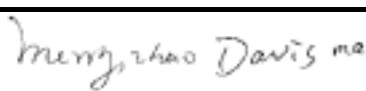
For

Shenzhen Lian Yi Da Science Co., Ltd.

#2009A, Saige Building, HuaQiang Road North Shenzhen, China

FCC ID: RAWLYD2G4CWAS

November 2, 2005

This Report Concerns: ☒ Original Report	Equipment Type: Transmitter, Wireless Camera
Test Engineer: Merry Zhao and Davis Ma 	
Report No.: RSZ05101001	
Test Date: October 20-27, 2005	
Reviewed By: Chris Zeng 	
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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 Shenzhen Lian Yi Da Science Co., Ltd. 's product, model number: 203CWAS or the "EUT" as referred to in this report is a Transmitter of Wireless Camera. The EUT is measured approximately 20cm L x 20cm W x 15cm H. rated input voltage: DC 8V battery.

Adaptor: manufacture: SxinGPU, model: XP20-080050, input: 100~240V-50/60Hz, output: 8V DC 500mA.

** The test data gathered are from production sample, serial number: 0510004 provided by the manufacturer, we received EUT on 2005-10-10.*

Objective

This Type approval report is prepared on behalf of *Shenzhen Lian Yi Da Science 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.

The objective is to determine compliance with FCC rules, sec 15.207, 15.209 and sec 15.249.

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 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>

SYSTEM TEST CONFIGURATION

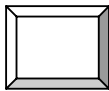
Justification

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

Equipment Modifications

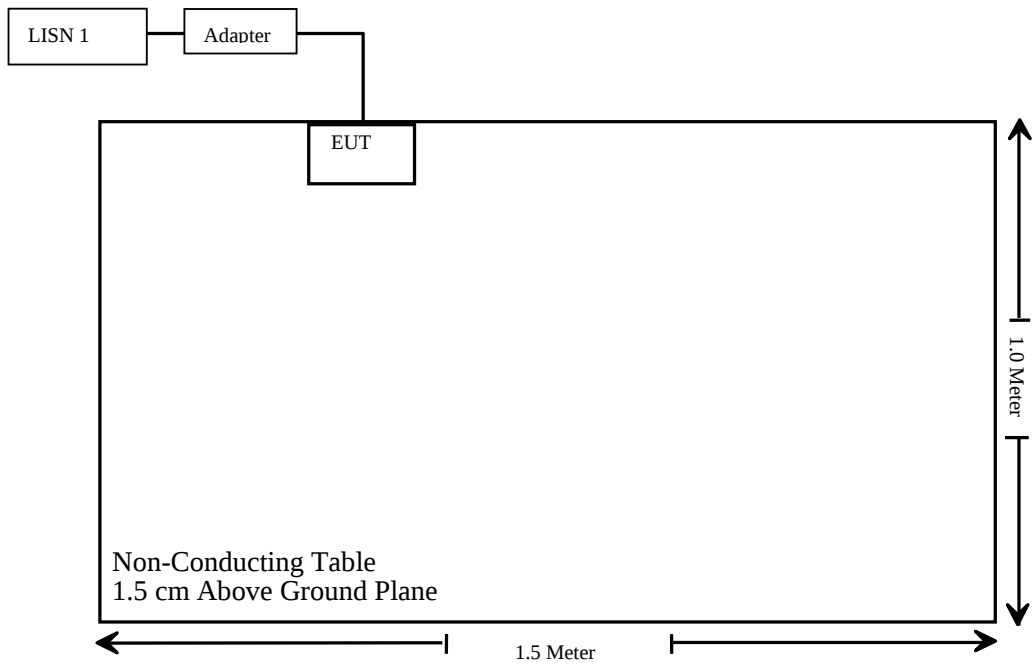
Bay Area Compliance Lab Corp. (ShenZhen) has not done any modification on the EUT.

Configuration of Test Setup



EUT

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)	Radiated Emission	Compliant*
§15.249(d)	Out of band emission	Compliant

* Within measurement uncertainty

§15.203 - ANTENNA APPLICATION

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.

Test Result: Pass

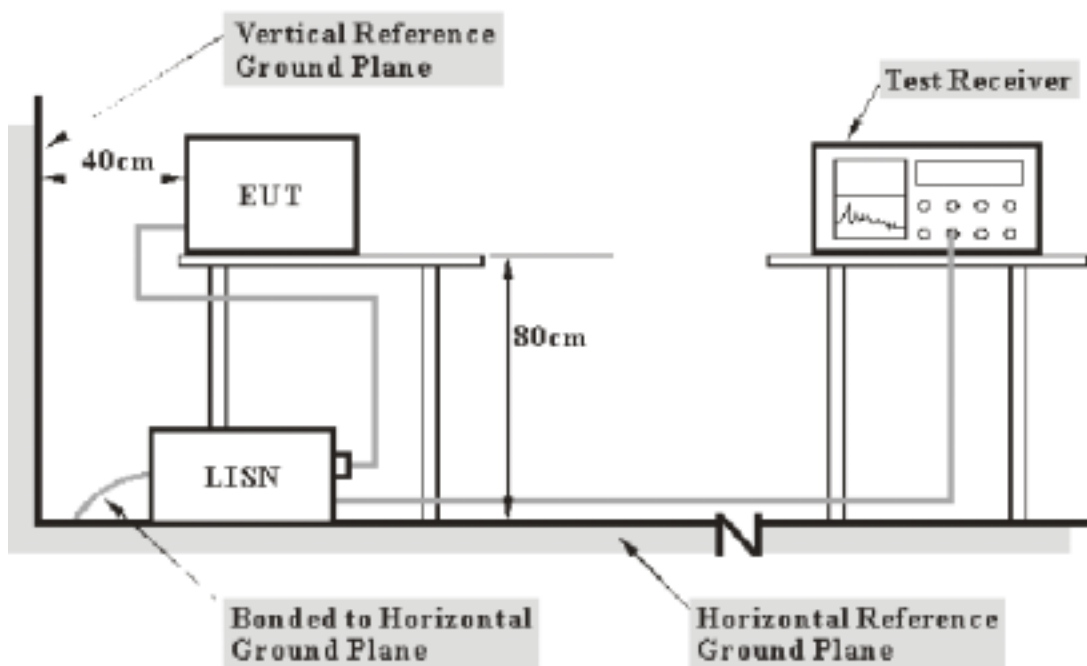
§15.207 - CONDUCTED EMISSION

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 Lab 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 adapter was connected to a 120 VAC/60 Hz power source.

Test Receiver Setup

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

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

<u>Frequency Range</u>	<u>IFBW</u>
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 adapter power cord was connected to the outlet of the 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:

Low channel: **-1.75 dB** at **0.400 MHz** in the **Line** conductor mode.
 Middle channel: **-1.05 dB** at **0.400 MHz** in the **Line** conductor mode.
 High channel: **-2.89 dB** at **0.460 MHz** in the **Line** conductor mode.

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	55%
ATM Pressure:	1000mbar

The testing was performed by Davis Ma on 2005-10-20.

Test Data

Test mode: Transmitting

LINE CONDUCTED EMISSIONS				FCC PART 15 .207	
Frequency MHz	Amplitude dBμV	Detector QP/AV	Phase Line/Neutral	Limit dBμV	Margin dB
Low Channel					
0.400	46.10	AV	Line	47.85	-1.75 *
0.460	44.10	AV	Line	46.69	-2.59
0.400	54.00	QP	Line	57.85	-3.85
0.460	52.60	QP	Line	57.85	-5.25
1.375	39.10	AV	Line	46.00	-6.90
0.345	42.00	AV	Line	49.08	-7.08
0.400	40.00	AV	Neutral	47.85	-7.85
1.375	48.60	QP	Line	56.69	-8.09
0.455	48.50	QP	Neutral	56.78	-8.28
0.455	38.00	AV	Neutral	46.78	-8.78
0.345	50.20	QP	Line	59.08	-8.88
0.400	48.90	QP	Neutral	57.85	-8.95
2.345	36.80	AV	Line	46.00	-9.20
2.345	45.60	QP	Line	56.00	-10.40
1.490	44.40	QP	Neutral	56.00	-11.60
0.345	46.20	QP	Neutral	59.08	-12.88
0.345	36.00	AV	Neutral	49.08	-13.08
1.490	32.50	AV	Neutral	46.00	-13.50
2.405	41.60	QP	Neutral	56.00	-14.40
0.230	37.20	AV	Line	52.45	-15.25
0.230	30.70	AV	Neutral	46.00	-15.30
2.405	30.20	AV	Neutral	46.00	-15.80
0.230	45.20	QP	Line	62.45	-17.25
0.230	42.00	QP	Neutral	62.45	-20.45

LINE CONDUCTED EMISSIONS				FCC PART 15 .207	
Frequency MHz	Amplitude dB μ V	Detector QP/AV	Phase Line/Neutral	Limit dB μ V	Margin dB
Middle Channel					
0.400	46.80	AV	Line	47.85	-1.05 *
0.460	44.30	AV	Line	46.69	-2.39 *
0.400	54.00	QP	Line	57.85	-3.85
0.460	52.80	QP	Line	57.85	-5.05
1.430	39.80	AV	Line	46.00	-6.20
0.345	41.90	AV	Line	49.08	-7.18
0.400	39.70	AV	Neutral	47.85	-8.15
1.430	48.40	QP	Line	56.69	-8.29
0.345	50.30	QP	Line	59.08	-8.78
0.460	37.90	AV	Neutral	46.69	-8.79
0.460	47.30	QP	Neutral	56.69	-9.39
2.290	36.20	AV	Line	46.00	-9.80
0.400	48.00	QP	Neutral	57.85	-9.85
2.290	45.90	QP	Line	56.00	-10.10
1.545	33.50	AV	Neutral	46.00	-12.50
1.545	43.30	QP	Neutral	56.00	-12.70
0.345	36.10	AV	Neutral	49.08	-12.98
0.345	45.20	QP	Neutral	59.08	-13.88
2.520	41.80	QP	Neutral	56.00	-14.20
0.230	31.20	AV	Neutral	46.00	-14.80
0.170	37.70	AV	Line	54.96	-17.26
2.520	28.20	AV	Neutral	46.00	-17.80
0.170	45.00	QP	Line	64.96	-19.96
0.230	41.40	QP	Neutral	62.45	-21.05

LINE CONDUCTED EMISSIONS				FCC PART 15 .207	
Frequency MHz	Amplitude dB μ V	Detector QP/AV	Phase Line/Neutral	Limit dB μ V	Margin dB
High Channel					
0.460	43.80	AV	Line	46.69	-2.89
0.400	44.80	AV	Line	47.85	-3.05
0.400	53.90	QP	Line	57.85	-3.95
0.460	52.70	QP	Line	57.85	-5.15
1.375	39.00	AV	Line	46.00	-7.00
0.345	42.00	AV	Line	49.08	-7.08
1.375	48.10	QP	Line	56.69	-8.59
0.400	39.20	AV	Neutral	47.85	-8.65
0.455	47.90	QP	Neutral	56.78	-8.88
0.455	37.90	AV	Neutral	46.78	-8.88
0.345	49.80	QP	Line	59.08	-9.28
0.400	48.40	QP	Neutral	57.85	-9.45
2.290	35.60	AV	Line	46.00	-10.40
2.290	45.50	QP	Line	56.00	-10.50
0.685	44.70	QP	Neutral	56.00	-11.30
1.545	43.80	QP	Neutral	56.00	-12.20
0.685	33.70	AV	Neutral	46.00	-12.30
0.345	36.20	AV	Neutral	49.08	-12.88
1.545	33.00	AV	Neutral	46.00	-13.00
0.345	46.00	QP	Neutral	59.08	-13.08
0.230	31.10	AV	Neutral	46.00	-14.90
0.170	37.00	AV	Line	54.96	-17.96
0.170	44.70	QP	Line	64.96	-20.26
0.230	41.60	QP	Neutral	62.45	-20.85

* Within measurement uncertainty

Plot(s) of Test Data

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

Conducted Emission Test FCC Part 15

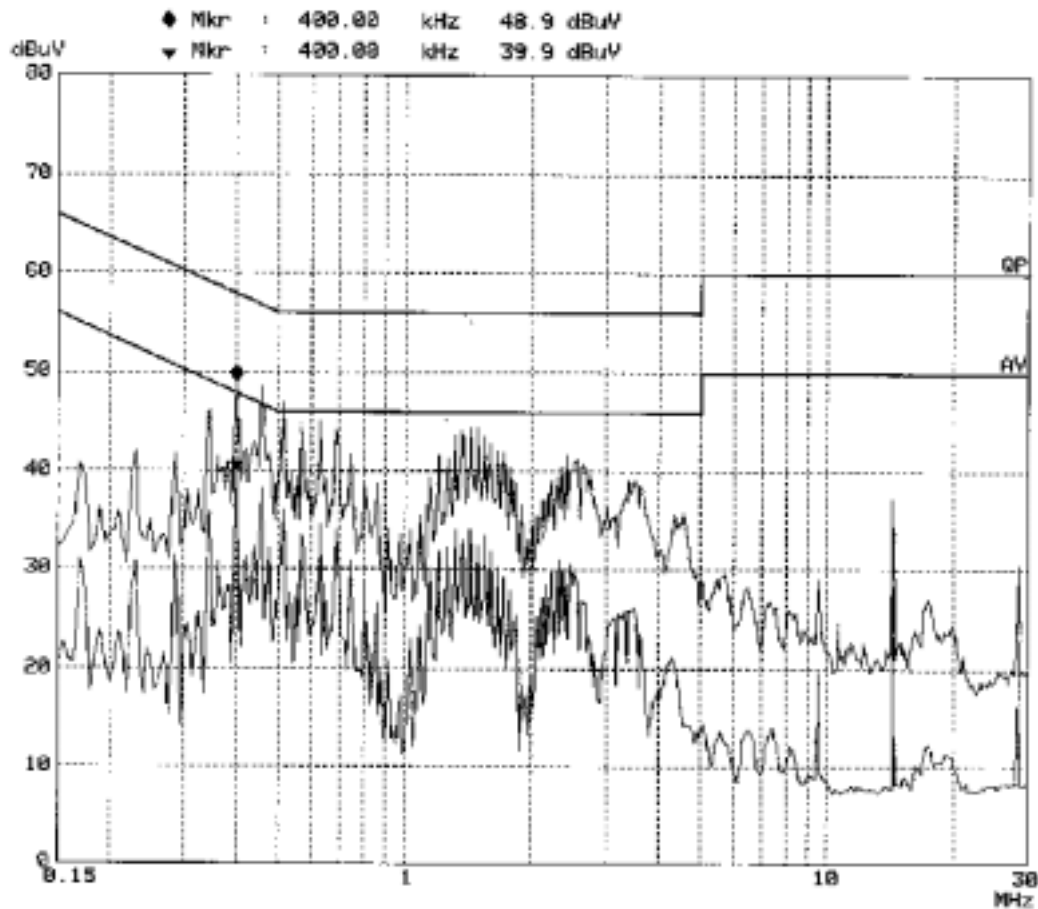
EUT: Wireless Camera M/N:203CWAS
Manuf: lianyida
Op Cond: Transmit (Low)
Operator: Davis
Test Spec: AC 120V/60HZ N
Comment: Temp:25
Humi:55%
Date: 20. Oct 05 18:33

Scan Settings (1 Range)

----- Frequencies -----			----- Receiver Settings -----			
Start	Stop	Step	IF BW	Detector	M-Time	Atten Preamp
150k	30M	5k	9k	PK+AV	10ms 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 EMISSION Test FCC Part15

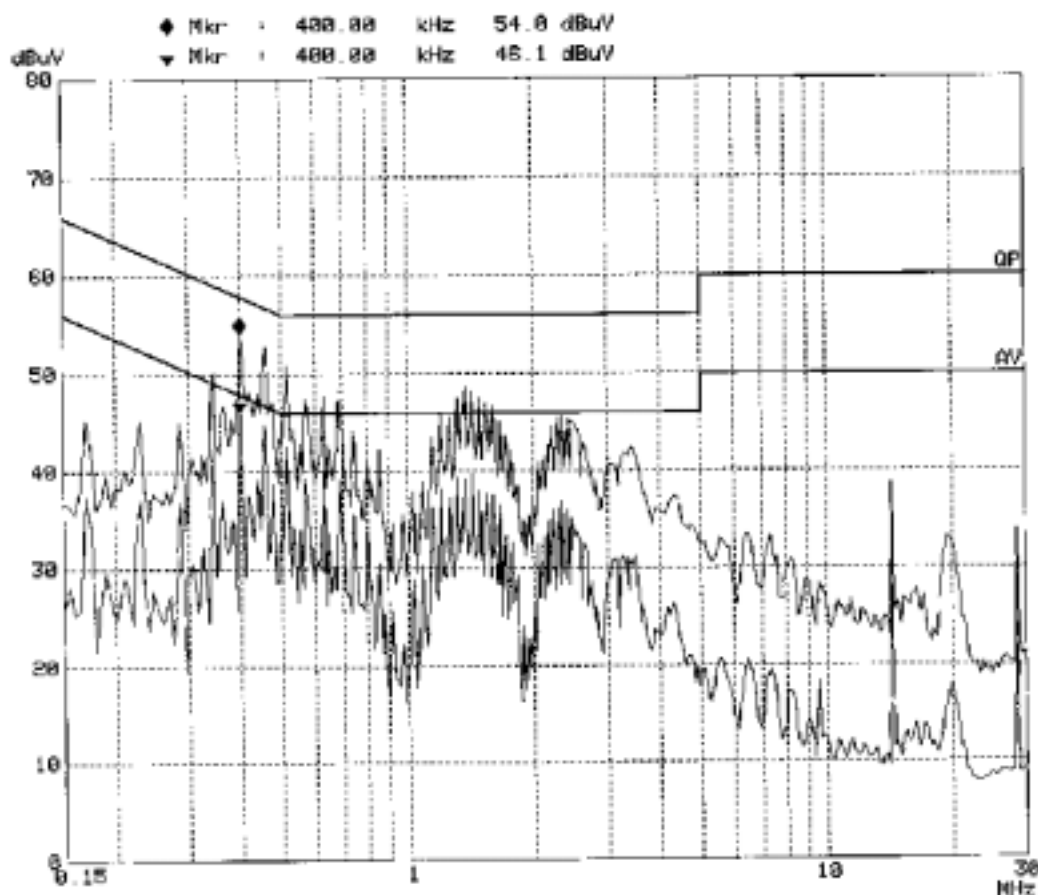
EUT: Wireless Camera M/N:203CNAS
Manuf: lianyida
Op Cond: Transmit (Low)
Operator: Davis
Test Spec: AC 120V/60HZ L
Comment: Temp:25
Humi:55%
Date: 20, Oct 05 18:46

Scan Settings (1 Range)

----- Frequencies -----			----- Receiver Settings -----			
Start	Stop	Step	IF BW	Detector	M-Time	Atten Preamp
150k	30M	5K	9k	PK+AV	10ms 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 Emission Test FCC Part 15

EUT: Wireless Camera M/N:203CWAS
Manuf: lianyida
Op Cond: Transmit (Middle)
Operator: Davis
Test Spec: AC 120V/60HZ N
Comment: Temp:25
Humi:55%
Date: 20. Oct 05 18:23

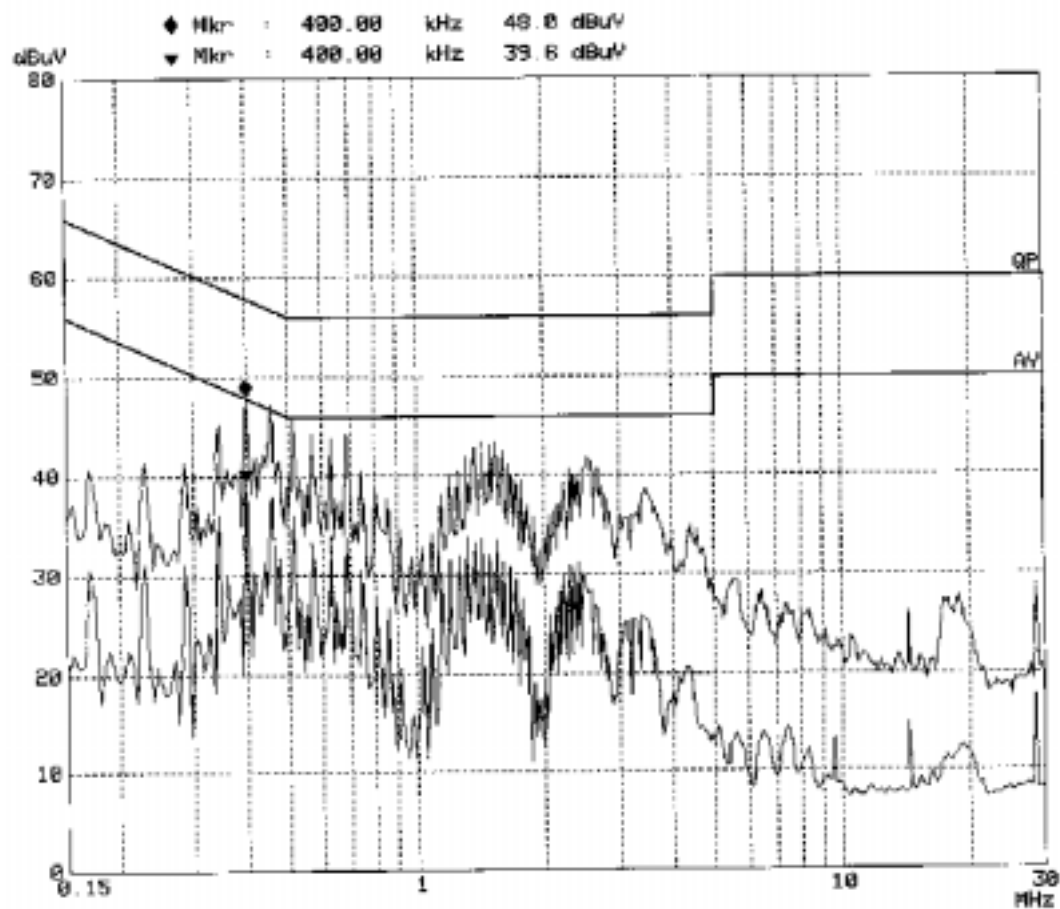
Scan Settings (1 Range)

Frequencies			Receiver Settings			
Start	Stop	Step	IF BW	Detector	M-Time	Atten Preamp
150K	30M	5K	9K	PK+AV	10ms 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 Emission Test FCC Part 15

EUT: Wireless Camera M/N:203CHAS
Manuf: lianyida
Op Cond: Transmit (Middle)
Operator: Davis
Test Spec: AC 120V/60HZ L
Comment: Temp:25
Humi:55%
Date: 20. Oct 05 18:10

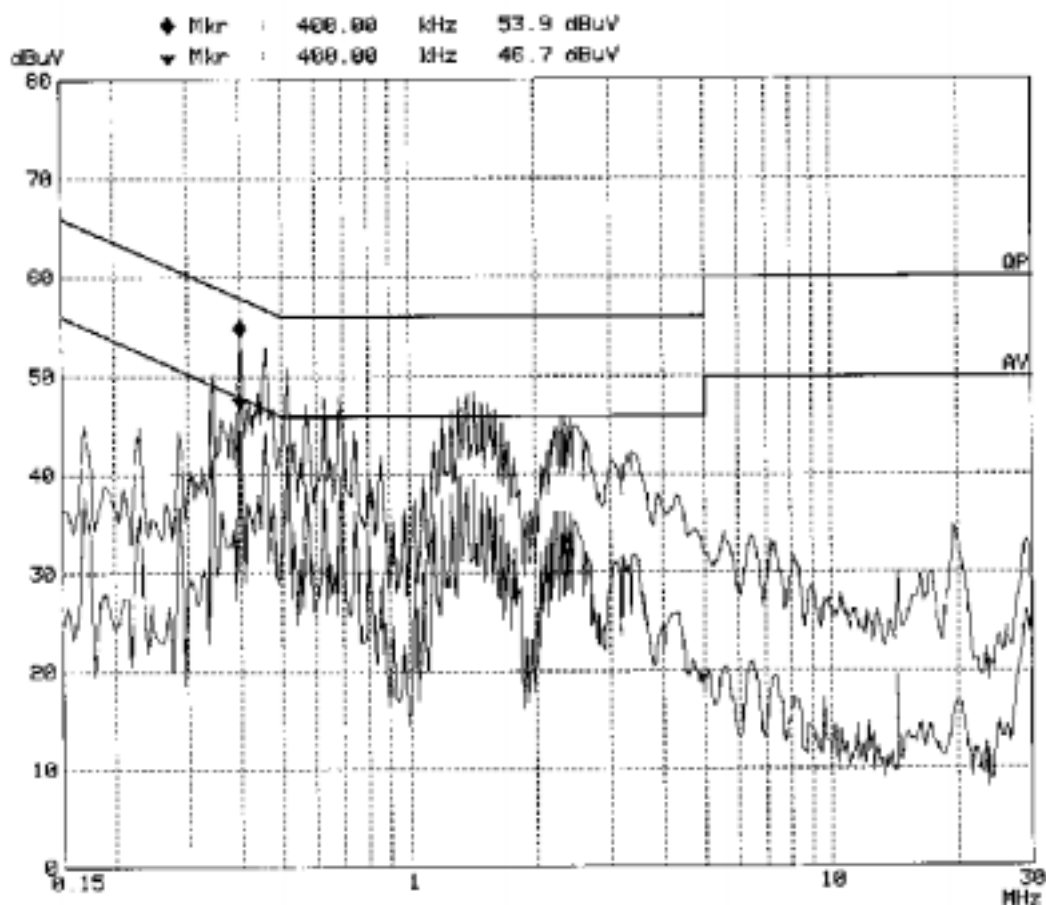
Scan Settings (1 Range)

----- Frequencies -----			----- Receiver Settings -----			
Start	Stop	Step	IF BW	Detector	M-Time	Atten Preamp
150k	30M	5k	9k	PK+AV	10ms 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 Emission Test FCC Part 15

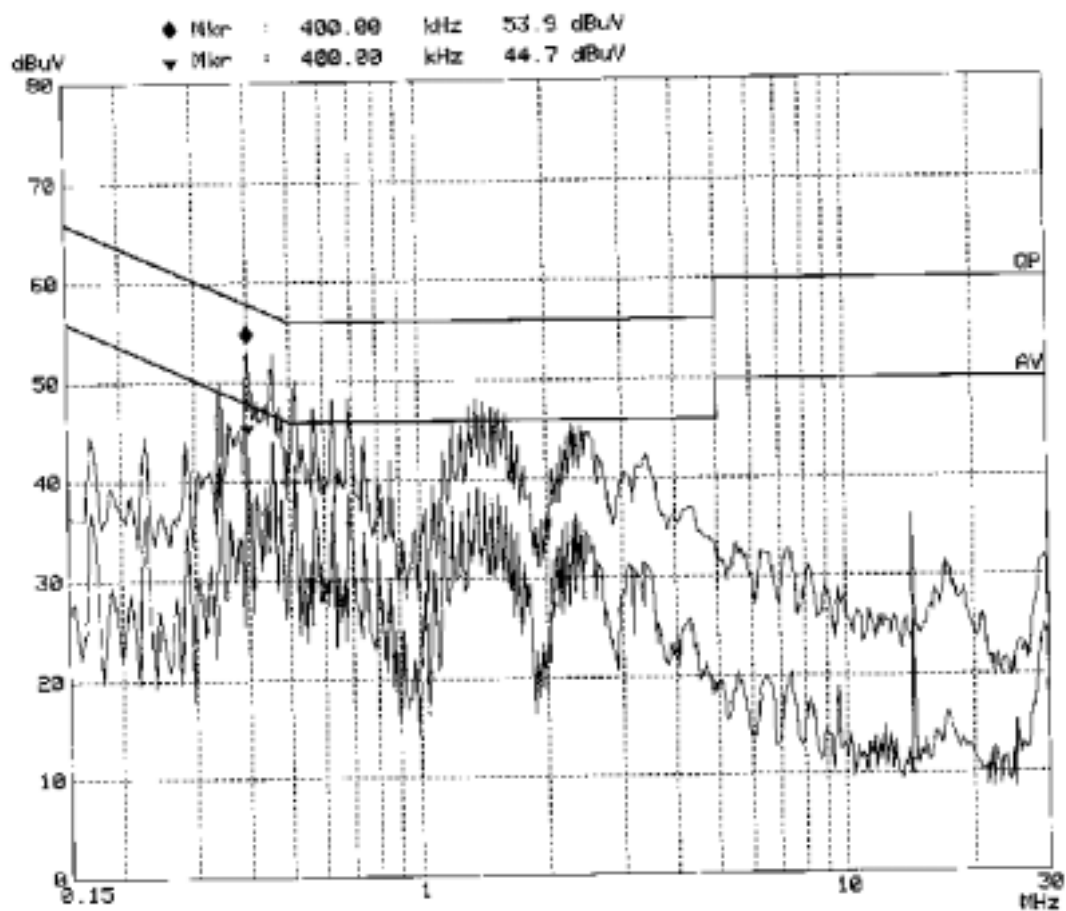
EUT: Wireless Camera M/N:203CWAS
Manuf: lianyida
Op Cond: Transmit (High)
Operator: Davis
Test Spec: AC 120V/60HZ L
Comment: Temp:25
Humi:55%
Date: 20. Oct 05 17:59

Scan Settings (1 Range)

----- Frequencies -----			----- Receiver Settings -----				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	30M	5k	9k	PK+AV	10ms	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 Emission Test FCC Part 15

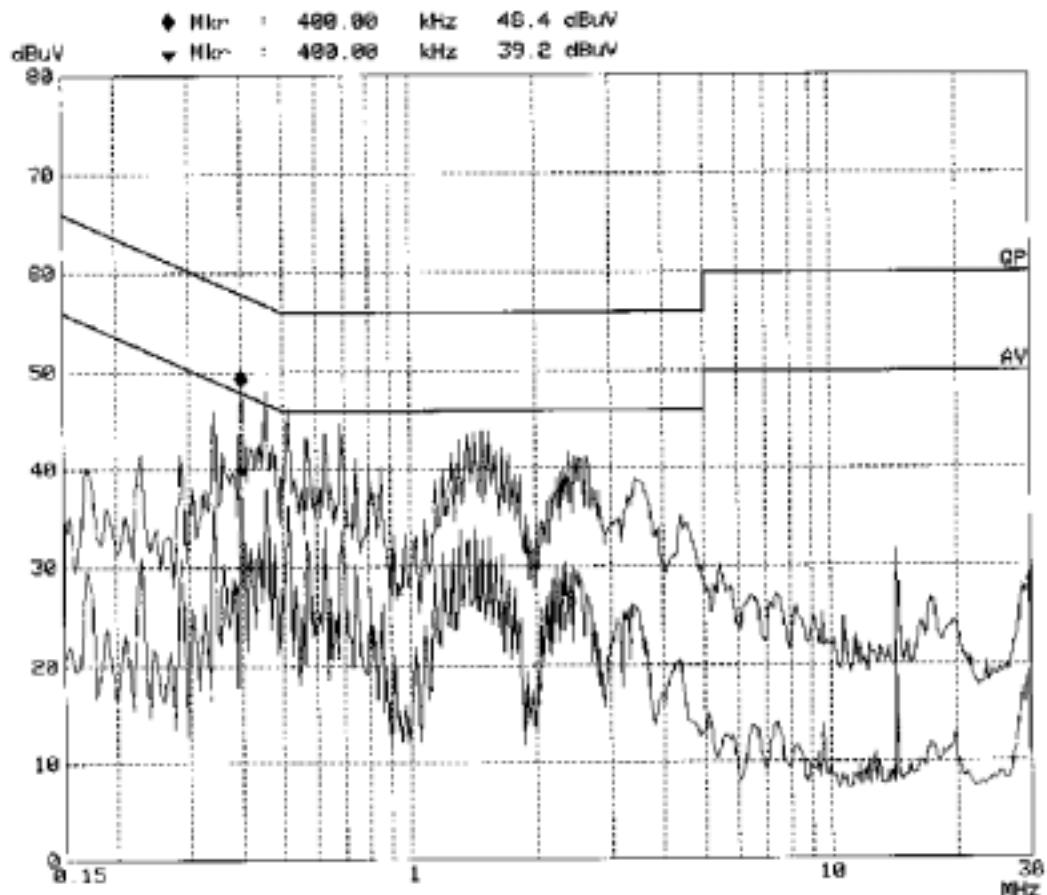
EUT: Wireless Camera M/N:203CMAS
Manuf: lianyida
Op Cond: Transmit (High)
Operator: DAVIS
Test Spec: AC 120V/60HZ N
Comment: Temp:25
Humi:55%
Date: 20. Oct 05 17:37

Scan Settings (1 Range)

----- Frequencies -----			----- Receiver Settings -----			
Start	Stop	Step	IF BW	Detector	M-Time	Atten Preamp
150k	30M	5k	9k	PK+AV	10ms AUTO	LN OFF

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

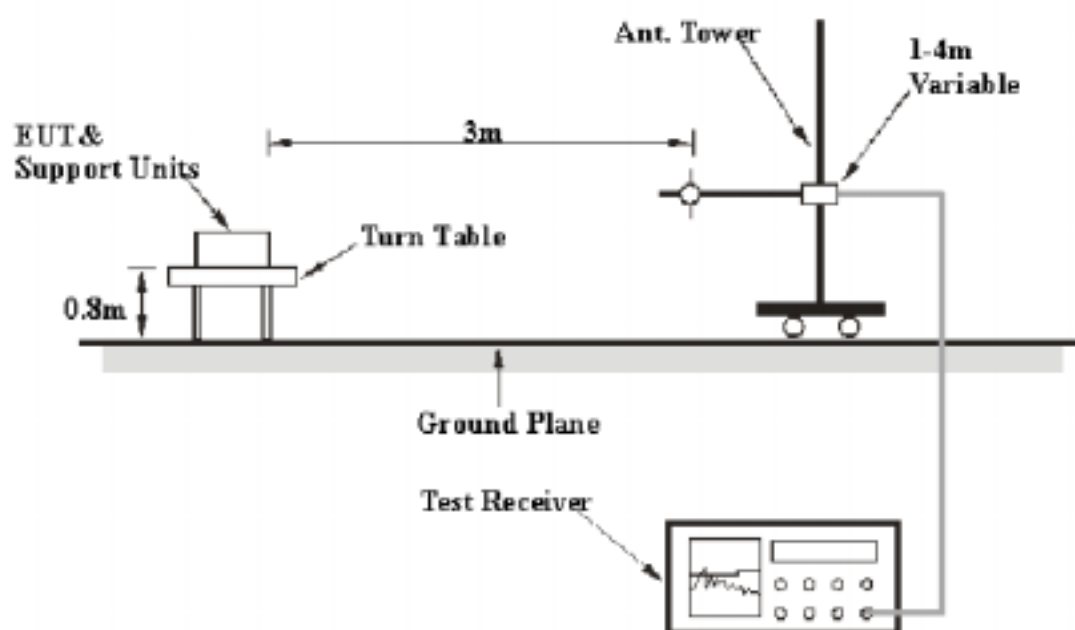
Final Measurement: x QP / + AV
Meas Time: 1 s
Subranges: 25
Acc Margin: 6dB



§15.205 §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 Lab Corp. (ShenZhen) is ± 4.0 dB.

EUT Setup

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

Test Receiver Setup

The system was investigated from 30 MHz to 25000 MHz.

During the radiated emission test, the 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
HP	Amplifier	8447D	2944A09795	2005-8-17	2006-8-17
Rohde & Schwarz	EMI Test Receiver	ESCI	100028	2005-8-17	2006-8-17
Sunol Sciences	Broadband Antenna	JB1	A040904-1	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 adapter 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:

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

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:

30-1000MHz (Low channel): **-9.5 dB** at **66.73 MHz** in the **Vertical** polarization.
 30-1000MHz (Middle channel): **-7.1 dB** at **912.87 MHz** in the **Vertical** polarization.
 30-1000MHz (High channel): **-6.4 dB** at **31.95 MHz** in the **Horizontal** polarization.
 1-25 GHz (Low channel): **-2.1 dB** at **7242 MHz** in the **Vertical** polarization.
 1-25 GHz (Middle channel): **-2.5 dB** at **4864 MHz** in the **Horizontal** polarization.
 1-25 GHz (High channel): **-3.1 dB** at **7404 MHz** in the **Vertical** polarization.

Test Data**Environmental Conditions**

Temperature:	27 ° C
Relative Humidity:	55%
ATM Pressure:	1032mbar

The testing was performed by Merry Zhao on 2005-10-27.

Test mode: Transmitting

Frequency	Meter Reading	Detector	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifer Gain	Corr. Ampl.	FCC Part 15.249		
MHz	dBuV/m	PK/QP/AV	Degree	Meter	H / V	dB	dB	dB	dBuV/m	Limit dBuV/m	Margin dB	Commend
30-1000MHz (Low Channel)												
66.73	47.2	PK	35	3.8	V	8.5	1.6	26.8	30.5	40.0	-9.5	Spurious
912.86	30.9	PK	45	1.0	H	22.8	6.7	26.5	33.8	46.0	-12.2	Spurious
31.95	29.3	PK	45	1.0	V	24.1	1.2	26.8	27.8	40.0	-12.2	Spurious
144.33	40.7	PK	289	1.0	H	13.8	2.0	26.6	29.9	43.5	-13.6	Spurious
42.90	37.4	PK	60	1.2	V	14.3	1.3	26.8	26.2	40.0	-13.8	Spurious
945.44	28.3	PK	90	1.2	V	23.4	6.8	26.5	32.0	46.0	-14.0	Spurious
413.27	35.5	PK	180	1.2	H	16.5	4.0	26.5	29.5	46.0	-16.5	Spurious
144.33	35.5	PK	45	1.2	V	13.8	2.0	26.6	24.7	43.5	-18.8	Spurious
147.40	33.6	PK	60	1.0	H	13.4	2.0	26.6	22.3	43.5	-21.2	Spurious
162.61	31.8	PK	45	1.2	H	12.7	2.1	26.6	20.0	43.5	-23.5	Spurious
96.10	33.9	PK	289	1.0	H	8.2	2.0	26.8	17.2	43.5	-26.3	Spurious

Frequency	Meter Reading	Detector	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier Gain	Corr. Ampl.	FCC Part 15.249		
										Limit	Margin	
MHz	dBuV/m	PK/QP/AV	Degree	Meter	H / V	dB	dB	dB	dBuV/m	dBuV/m	dB	Commend
30-1000MHz (Middle Channel)												
912.87	35.9	PK	90	1.2	V	22.8	6.7	26.5	38.9	46.0	-7.1	Spurious
912.86	35.2	PK	45	1.0	H	22.8	6.7	26.5	38.2	46.0	-7.8	Spurious
66.73	47.3	PK	35	3.8	V	8.5	1.6	26.8	30.6	40.0	-9.4	Spurious
57.19	47.2	PK	60	1.2	V	7.9	1.6	26.8	29.9	40.0	-10.1	Spurious
32.41	27.6	PK	289	1.0	H	24.1	1.2	26.8	26.1	40.0	-13.9	Spurious
33.09	27.6	PK	45	1.0	V	24.1	1.2	26.8	26.1	40.0	-13.9	Spurious
144.33	39.8	PK	60	1.0	H	13.8	2.0	26.6	29.0	43.5	-14.5	Spurious
162.61	38.9	PK	180	1.2	H	12.7	2.1	26.6	27.1	43.5	-16.4	Spurious
142.32	36.6	PK	35	3.8	V	13.8	2.0	26.6	25.8	43.5	-17.7	Spurious
159.23	36.2	PK	45	1.2	V	12.8	2.1	26.6	24.5	43.5	-19.0	Spurious
148.44	34.2	PK	45	1.2	H	13.4	2.0	26.6	23.0	43.5	-20.6	Spurious
96.10	34.7	PK	289	1.0	H	8.2	2.0	26.8	18.0	43.5	-25.5	Spurious
30-1000MHz (High Channel)												
31.95	35.1	PK	289	1.0	H	24.1	1.2	26.8	33.6	40.0	-6.4	Spurious
900.15	34.5	PK	90	1.2	V	22.9	6.6	26.5	37.5	46.0	-8.5	Spurious
57.19	48.6	PK	60	1.2	V	7.9	1.6	26.8	31.3	40.0	-8.7	Spurious
66.73	47.4	PK	35	3.8	V	8.5	1.6	26.8	30.7	40.0	-9.3	Spurious
945.44	31.9	PK	45	1.0	H	23.4	6.8	26.5	35.6	46.0	-10.4	Spurious
56.79	46.1	PK	60	1.0	H	7.9	1.6	26.8	28.8	40.0	-11.2	Spurious
47.66	40.0	PK	45	1.0	V	10.8	1.5	26.8	25.5	40.0	-14.5	Spurious
145.35	36.2	PK	35	3.8	V	13.4	2.0	26.6	25.0	43.5	-18.5	Spurious
140.34	34.7	PK	45	1.2	V	13.8	2.0	26.6	23.9	43.5	-19.6	Spurious
48.67	32.3	PK	289	1.0	H	10.8	1.5	26.8	17.8	40.0	-22.2	Spurious
99.53	37.5	PK	180	1.2	H	8.2	2.0	26.8	20.9	43.5	-22.7	Spurious
90.86	29.5	PK	45	1.2	H	7.7	1.9	26.8	12.3	43.5	-31.2	Spurious

Frequency	Meter Reading	Detector	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifer Gain	Corr. Ampl.	FCC Part 15.249		
MHz	dBuV/m	PK/QP/AV	Degree	Meter	H / V	dB	dB	dB	dBuV/m	Limit dBuV/m	Margin dB	Commend
1-25 GHz (Low Channel)												
7242	42.50	AV	180	1.2	V	36.8	6.1	33.50	51.9	54	-2.1*	Harmonics
4824	48.50	AV	45	1.2	H	33.8	2.2	33.00	51.5	54	-2.5*	Harmonics
6970	44.80	AV	180	1.2	H	37.8	7.1	38.40	51.3	54	-2.7*	Spurious
6925	43.80	AV	45	1.0	V	36.8	6.0	36.40	50.2	54	-3.8*	Spurious
4824	43.68	AV	180	1.2	V	33.8	5.2	33.00	49.7	54	-4.3	Harmonics
2414	88.90	AV	45	1.0	V	28.1	3.7	35.16	85.5	94	-8.5	Fundamental
2414	82.50	AV	60	1.0	H	28.1	3.7	35.16	79.1	94	-14.9	Fundamental
4824	52.80	PK	45	1.2	H	33.8	2.2	33.00	55.8	74	-18.2	Harmonics
2414	98.60	PK	45	1.0	V	28.1	3.7	35.16	95.2	114	-18.8	Fundamental
7242	45.10	PK	180	1.2	V	36.8	6.1	33.50	54.5	74	-19.5	Harmonics
6925	46.85	PK	45	1.0	V	36.8	6.0	36.40	53.3	74	-20.8	Spurious
4824	46.25	PK	180	1.2	V	33.8	5.2	33.00	52.3	74	-21.8	Harmonics
6970	45.60	PK	180	1.2	H	37.8	7.1	38.40	52.1	74	-21.9	Spurious
2414	84.30	PK	60	1.0	H	28.1	3.7	35.16	80.9	114	-33.1	Fundamental

Frequency	Meter Reading	Detector	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifer Gain	Corr. Ampl.	FCC Part 15.249		
MHz	dBuV/m	PK/QP/AV	Degree	Meter	H / V	dB	dB	dB	dBuV/m	Limit dBuV/m	Margin dB	Commend
1-25 GHz (Middle Channel)												
4864	48.50	AV	45	1.2	H	33.8	2.2	33.00	51.5	54	-2.5*	Harmonics
7296	42.50	AV	180	1.2	V	33.8	3.7	29.00	51.0	54	-3.0*	Harmonics
7296	41.60	AV	180	1.2	V	35.8	7.1	33.50	51.0	54	-3.0*	Harmonics
6925	43.80	AV	45	1.0	V	36.8	6.0	36.40	50.2	54	-3.8*	Spurious
4864	41.90	AV	180	1.2	V	33.8	5.2	33.00	47.9	54	-6.1	Harmonics
2432	88.90	AV	45	1.0	V	28.1	3.7	35.16	85.5	94	-8.5	Fundamental
2432	82.50	AV	60	1.0	H	28.1	3.7	35.16	79.1	94	-14.9	Fundamental
4864	52.80	PK	45	1.2	H	33.8	2.2	33.00	55.8	74	-18.2	Harmonics
7296	45.30	PK	180	1.2	V	35.8	7.1	33.50	54.7	74	-19.3	Harmonics
7296	45.10	PK	180	1.2	V	33.8	3.7	29.00	53.6	74	-20.4	Harmonics
6925	46.50	PK	45	1.0	V	36.8	6.0	36.40	52.9	74	-21.1	Spurious
4864	45.80	PK	180	1.2	V	33.8	5.2	33.00	51.8	74	-22.2	Harmonics
2432	92.51	PK	45	1.0	V	28.1	3.7	35.16	89.2	114	-24.9	Fundamental
2432	85.30	PK	60	1.0	H	28.1	3.7	35.16	81.9	114	-32.1	Fundamental
1-25 GHz (High Channel)												
7404	42.50	AV	180	1.2	V	35.8	6.1	33.50	50.9	54	-3.1*	Harmonics
4936	43.35	AV	180	1.2	V	33.8	5.2	33.00	49.4	54	-4.6	Harmonics
9872	38.50	AV	45	1.0	V	37.6	7.3	34.50	48.9	54	-5.1	Harmonics
2468	81.60	AV	45	1.0	V	28.1	3.7	35.16	78.2	94	-15.8	Fundamental
7404	47.50	PK	180	1.2	V	35.8	6.1	33.50	55.9	74	-18.1	Harmonics
4936	45.60	PK	180	1.2	V	33.8	5.2	33.00	51.6	74	-22.4	Harmonics
2468	87.24	PK	45	1.0	V	28.1	3.7	35.16	83.9	114	-30.1	Fundamental
9872	41.80	PK	45	1.0	V	37.6	7.3	36.40	34.5	74	-39.5	Harmonics

* Within 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
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	Antenna	JB1	A040904-2	2005-4-28	2006-4-28
Sunol Sciences	System Controller	SC99V	033004-1	N/A	N/A
HP	Amplifier	8447D	2994A09795	2005-8-17	2006-8-17
Rohde & Schwarz	EMI Test Receiver	ESCI	100028	2005-8-17	2006-8-17
Sunol Sciences	Antenna	JB1	A040904-1	2005-4-28	2006-4-28

* **Statement of Traceability:** Bay Area Compliance Lab 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

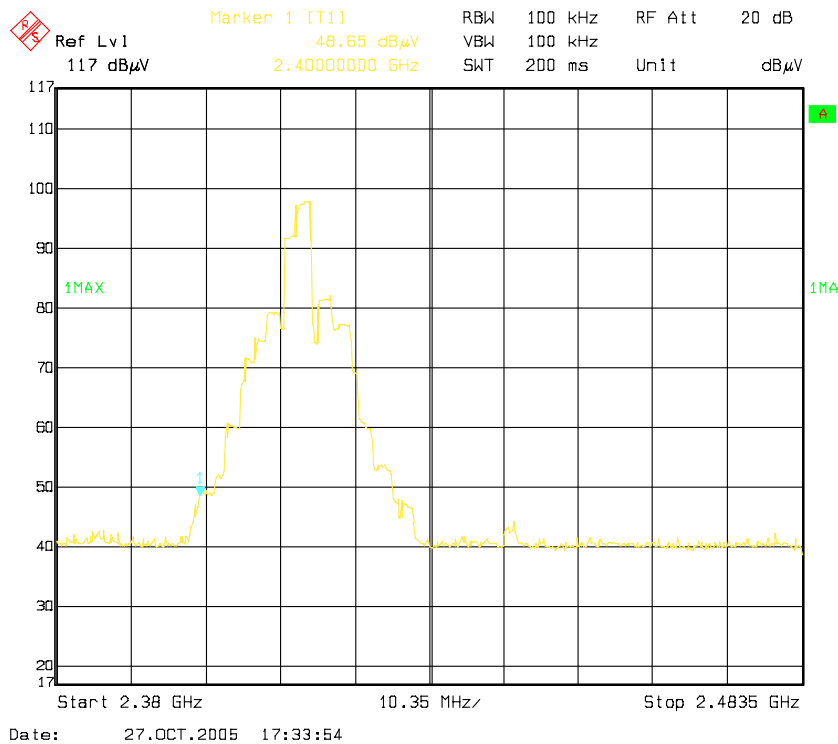
The testing was performed by Merry Zhao on 2005-10-27.

The result has been complied with the 15.249(d), see the following plot:

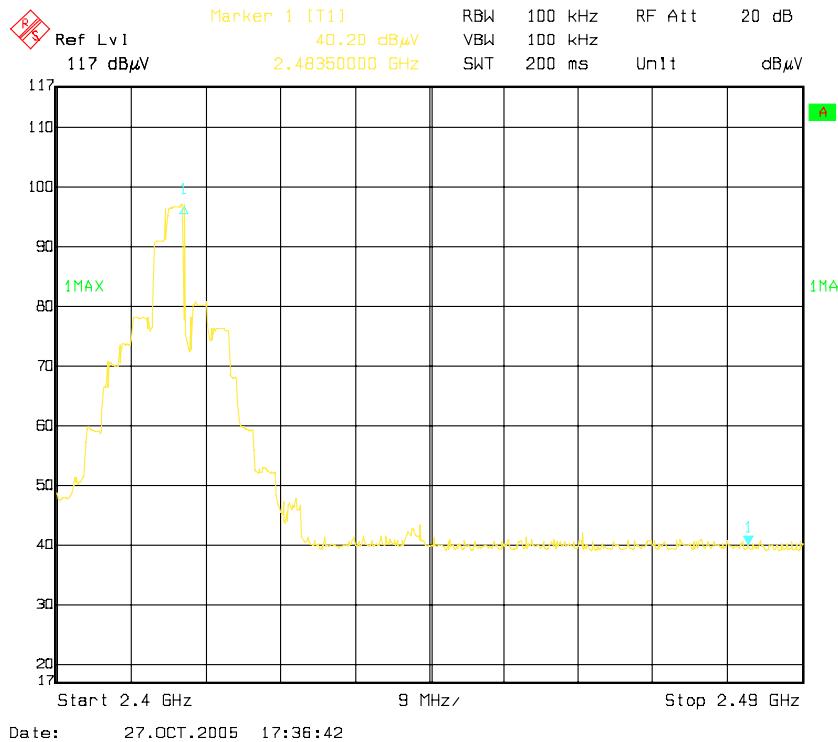
Channel Low/Middle/High	Frequency MHz	Emission dB μ V/m	Limit dB μ V/m
Low Channel	2400.0	48.65	54
High Channel	2483.5	39.88	54

Test Result: Pass

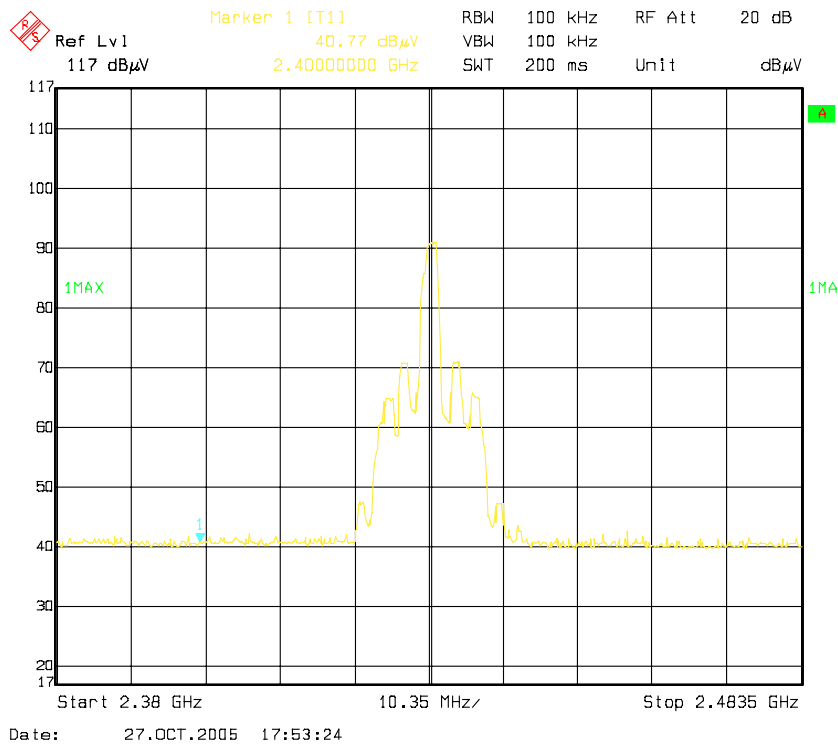
Low Channel (Left):



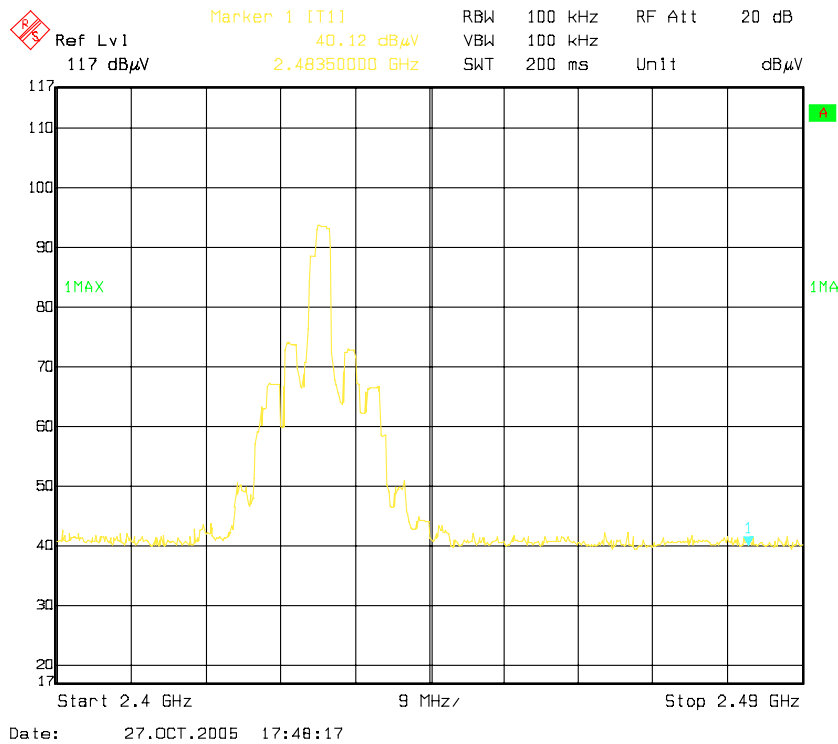
Low Channel (Right):



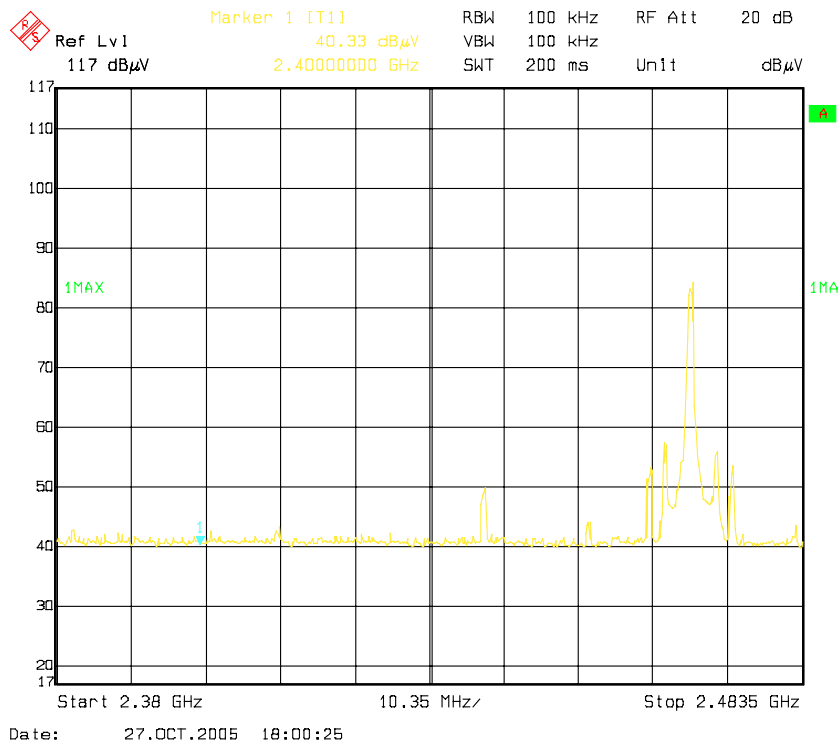
Middle Channel (Left):



Middle Channel (Right):



High Channel (Left):



High Channel (Right):

