

**FCC PART 15.249**  
**EMI MEASUREMENT AND TEST REPORT**

For

**Shanghai Super Electronic Technology Co. Ltd**

333 Hongqiao Road Jiaotong University High Technology Center Suite 608

**FCC ID: UNOSPD300A**

<b>This Report Concerns:</b> <input checked="" type="checkbox"/> Original Report	<b>Equipment Type:</b> Reader
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<b>Report No.:</b> RSC06092554	
<b>Test Date:</b> 2006-11-10	
<b>Report Date:</b> 2006-11-14	
<b>Reviewed By:</b> EMC Manager: Boni Baniqued <i>Boni Baniqued</i>	
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## GENERAL INFORMATION

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### Product Description for Equipment under Test (EUT)

The *Shanghai Super Electronic Technology Co. Ltd*'s product, model number: *SP-D300A* or the "EUT" as referred to in this report is a *Reader*. The EUT is measured approximately 26.0 cm L x 26.0 cm W x 7.0 cm H, rated input voltage: DC 12V.

Adapter: Manufacturer: MEAN WELL  
Model: NES-25-12  
Input: 100-240V 0.7A 50/60 Hz  
Output: +12V 2.1A

*\* The test data gathered are from production sample, serial number: 0601126 provided by the manufacturer, we received EUT on 2006-9-25.*

### Objective

This Type approval report is prepared on behalf of *Shanghai Super Electronic 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 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 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>

## External I/O Cable

Cable Description	Length (M)	From/Port	To
Power Cable with a core	1.0	EUT	Adapter

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## **SYSTEM TEST CONFIGURATION**

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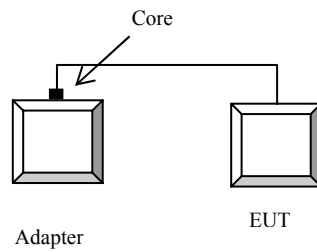
### **Justification**

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

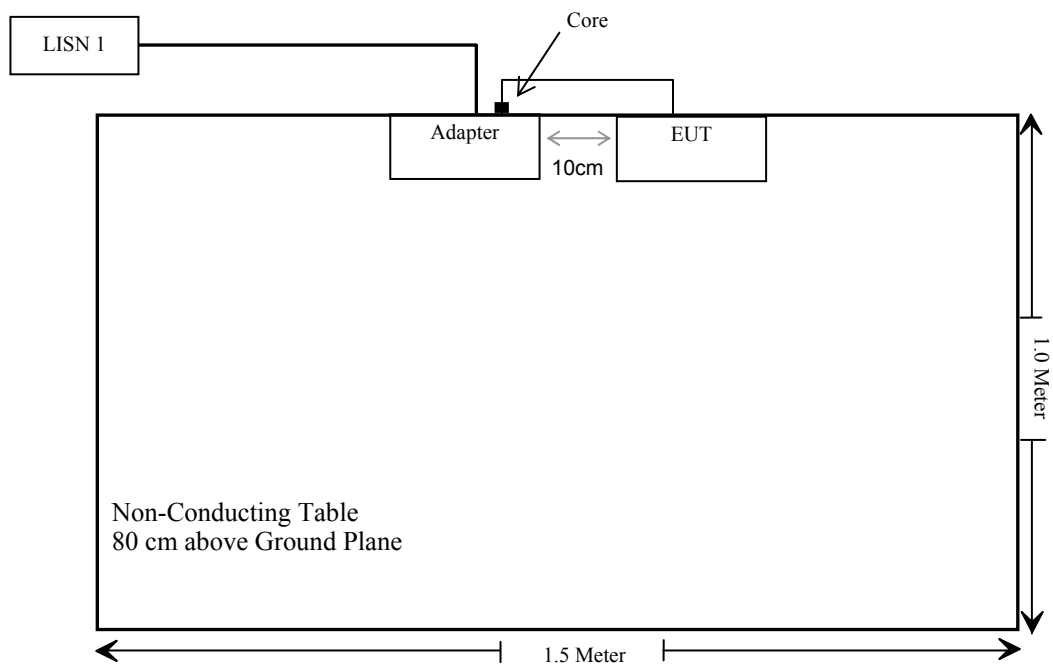
### **Equipment Modifications**

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

## Configuration of Test Setup



## Block Diagram of Test Setup



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**SUMMARY OF TEST RESULTS**

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

## **§15.203 - ANTENNA REQUIREMENT**

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### **Standard Applicable**

For intentional device, according to §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used.

### **Antenna Connector Construction**

The EUT has a permanently attached antenna, which in accordance to section 15.203, is considered sufficient to comply with the provisions of this section.



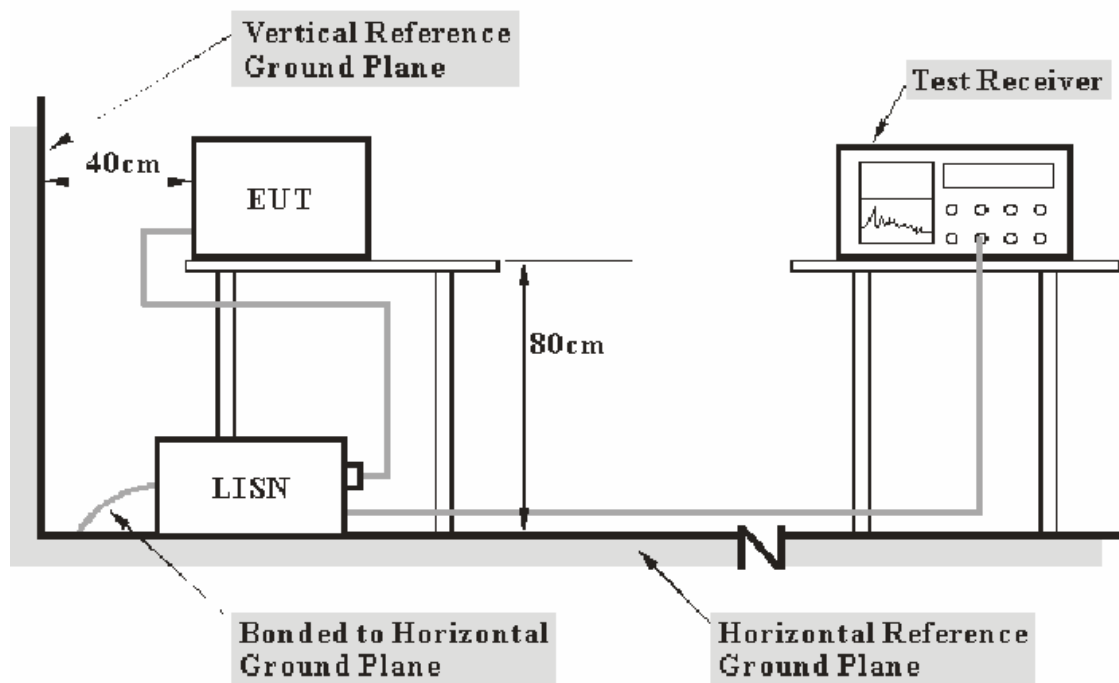
## §15.207 - CONDUCTED EMISSION

### 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  $\pm 2.4$  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 adapter was connected to a 120 VAC/60 Hz power source.

## EMI Test Receiver Setup

The 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><b>Frequency Range</b></i>	<i><b>IFBW</b></i>
150 kHz – 30 MHz	9 kHz

## Test Equipment List and Details

<b>Manufacturer</b>	<b>Description</b>	<b>Model</b>	<b>Serial Number</b>	<b>Calibration Date</b>	<b>Calibration Due Date</b>
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	DE25330 or 830245/006	2006-1-26	2007-1-26
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2006-3-1	2007-3-1

\* 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 adapter 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:

*Transmitting (Low Channel): -13.20 dB at 15.420 MHz in the **Neutral** conductor mode.*  
*Transmitting (Middle Channel): -13.10 dB at 17.300 MHz in the **Neutral** conductor mode.*  
*Transmitting (High Channel): -17.40 dB at 17.120 MHz in the **Live** conductor mode.*

**Test Data****Environmental Conditions**

Temperature:	25 ° C
Relative Humidity:	60%
ATM Pressure:	1002mbar

*The testing was performed by Deny Xiong on 2006-11-10.*

*Test mode: Transmitting (Low Channel)*

LINE CONDUCTED EMISSIONS				FCC PART 15 .207	
Frequency MHz	Amplitude dBμV	Detector QP/AV	Phase Live/Neutral	Limit dBμV	Margin dB
15.420	36.80	AV	Neutral	50.00	-13.20
18.010	36.70	AV	Live	50.00	-13.30
21.330	35.80	AV	Neutral	50.00	-14.20
23.270	33.30	AV	Live	50.00	-16.70
21.330	43.00	QP	Neutral	60.00	-17.00
0.450	27.00	AV	Live	46.88	-19.88
0.260	40.70	QP	Neutral	61.43	-20.73
0.260	40.30	QP	Live	61.43	-21.13
0.450	35.40	QP	Live	56.88	-21.48
15.420	38.10	QP	Neutral	60.00	-21.90
18.010	37.90	QP	Live	60.00	-22.10
0.260	28.20	AV	Neutral	51.43	-23.23
0.450	33.00	QP	Neutral	56.88	-23.88
0.190	39.80	QP	Neutral	64.04	-24.24
0.190	39.40	QP	Live	64.04	-24.64
0.390	33.10	QP	Neutral	58.06	-24.96
23.270	35.00	QP	Live	60.00	-25.00
0.260	26.40	AV	Live	51.43	-25.03
0.323	34.00	QP	Live	59.63	-25.63
0.450	21.00	AV	Neutral	46.88	-25.88
0.390	21.60	AV	Neutral	48.06	-26.46
0.190	26.60	AV	Neutral	54.04	-27.44
0.323	21.90	AV	Live	49.63	-27.73
0.190	23.00	AV	Live	54.04	-31.04

Test mode: Transmitting (Middle Channel)

LINE CONDUCTED EMISSIONS				FCC PART 15.207	
Frequency MHz	Amplitude dBμV	Detector QP/AV	Phase Live/Neutral	Limit dBμV	Margin dB
17.300	36.90	AV	Neutral	50.00	-13.10
16.660	36.30	AV	Live	50.00	-13.70
22.750	34.90	AV	Live	50.00	-15.10
22.330	34.60	AV	Neutral	50.00	-15.40
0.330	34.00	AV	Live	49.45	-15.45
0.260	45.40	QP	Live	61.43	-16.03
0.260	35.20	AV	Live	51.43	-16.23
0.330	43.20	QP	Live	59.45	-16.25
0.450	38.20	QP	Live	56.88	-18.68
22.750	41.20	QP	Live	60.00	-18.80
0.450	28.00	AV	Live	46.88	-18.88
17.300	39.00	QP	Neutral	60.00	-21.00
0.260	40.00	QP	Neutral	61.43	-21.43
0.190	42.30	QP	Live	64.04	-21.74
16.660	37.90	QP	Live	60.00	-22.10
22.330	37.80	QP	Neutral	60.00	-22.20
0.450	33.00	QP	Neutral	56.88	-23.88
0.260	27.50	AV	Neutral	51.43	-23.93
0.190	39.20	QP	Neutral	64.04	-24.84
0.190	28.70	AV	Live	54.04	-25.34
0.450	21.30	AV	Neutral	46.88	-25.58
0.320	33.60	QP	Neutral	59.71	-26.11
0.190	27.00	AV	Neutral	54.04	-27.04
0.320	21.80	AV	Neutral	49.71	-27.91

Test mode: Transmitting (High Channel)

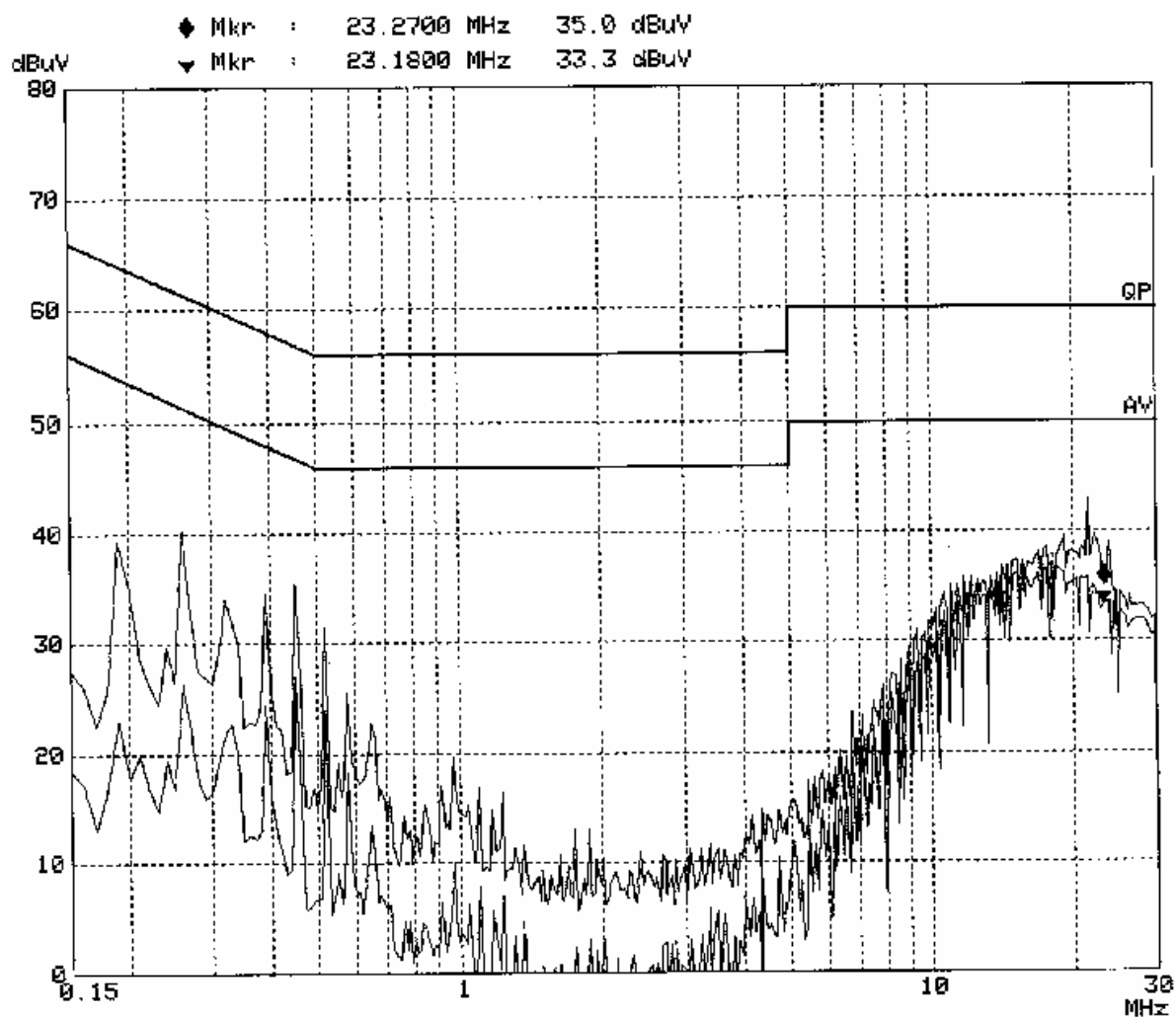
LINE CONDUCTED EMISSIONS				FCC PART 15.207	
Frequency MHz	Amplitude dBμV	Detector QP/AV	Phase Live/Neutral	Limit dBμV	Margin dB
17.120	32.60	AV	Live	50.00	-17.40
14.060	32.00	AV	Neutral	50.00	-18.00
22.000	31.60	AV	Neutral	50.00	-18.40
0.450	28.40	AV	Live	46.88	-18.48
22.800	30.80	AV	Live	50.00	-19.20
0.450	36.90	QP	Live	56.88	-19.98
22.800	39.90	QP	Live	60.00	-20.10
22.000	39.40	QP	Neutral	60.00	-20.60
0.260	40.80	QP	Live	61.43	-20.63
0.160	43.70	QP	Neutral	65.46	-21.76
0.390	25.20	AV	Live	48.06	-22.86
0.260	28.40	AV	Live	51.43	-23.03
0.390	34.60	QP	Live	58.06	-23.46
0.450	33.30	QP	Neutral	56.88	-23.58
0.260	27.40	AV	Neutral	51.43	-24.03
0.260	37.30	QP	Neutral	61.43	-24.13
0.190	39.80	QP	Neutral	64.04	-24.24
17.120	35.70	QP	Live	60.00	-24.30
0.190	39.10	QP	Live	64.04	-24.94
0.450	21.70	AV	Neutral	46.88	-25.18
14.060	33.90	QP	Neutral	60.00	-26.10
0.190	26.50	AV	Neutral	54.04	-27.54
0.190	23.80	AV	Live	54.04	-30.24
0.160	19.70	AV	Neutral	55.46	-35.76

### Plot(s) of Test Data

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

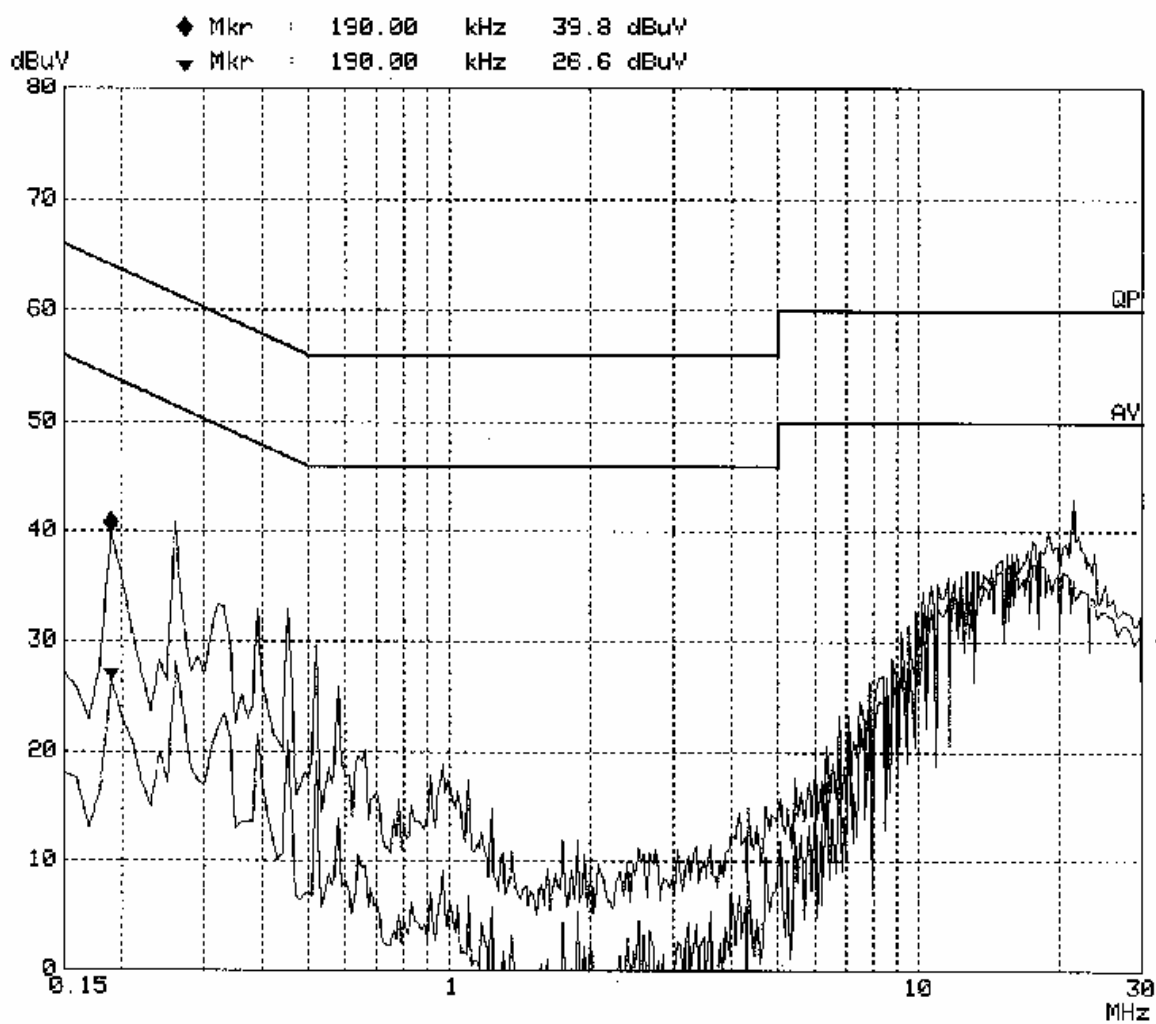
# Conducted Emission Test FCC Part 15

EUT: Reader M/N:SP-D300A  
Manuf: Super Electronic  
Op Cond: Transmitting in Low channel  
Operator: deny  
Test Spec: AC 120V/60Hz L  
Comment: Temp:25'C Humi:60%  
Date: 10. Nov 06 14:42



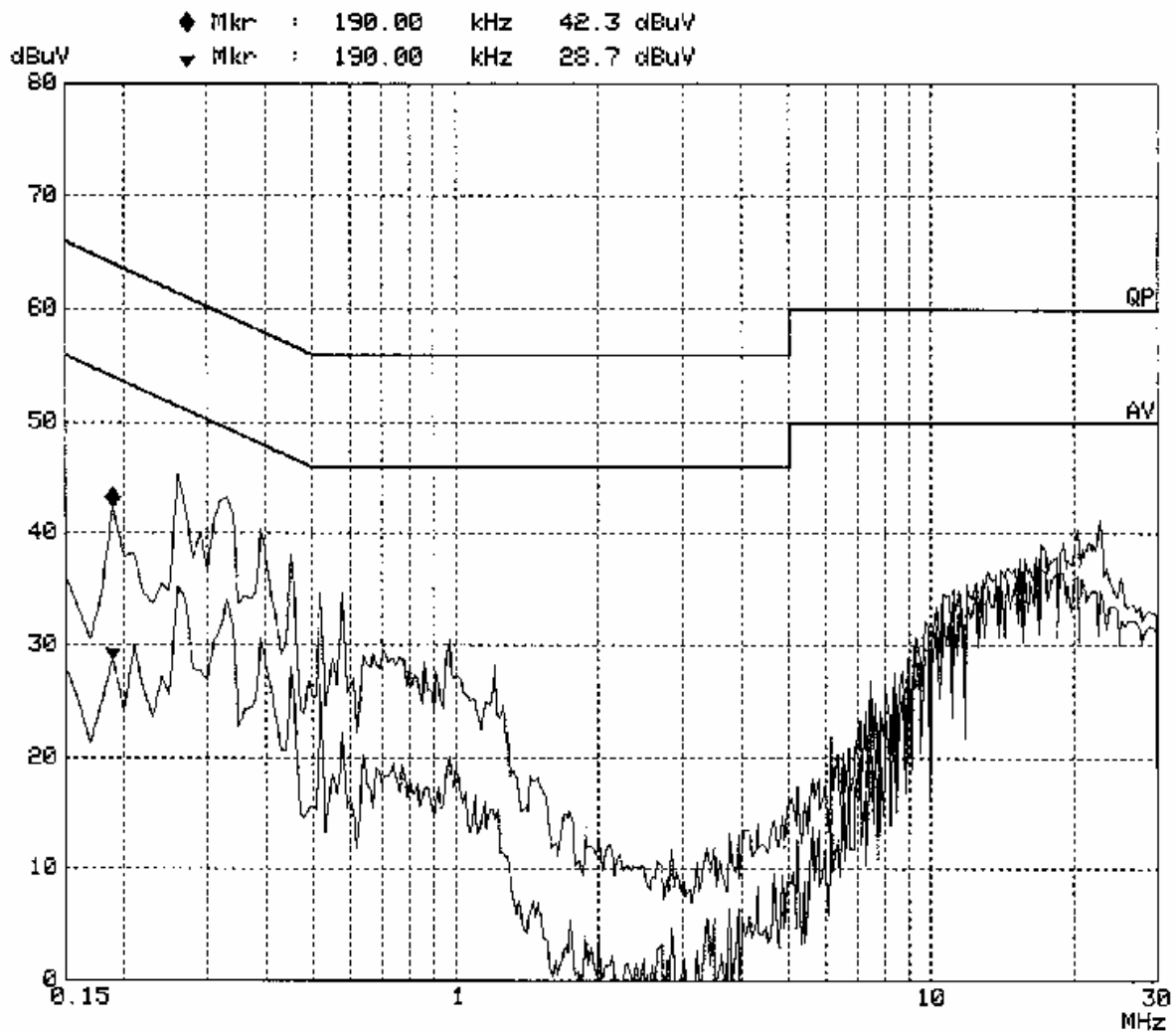
# Conducted Emission Test FCC Part 15

EUT: Reader M/N:SP-D300A  
Manuf: Super Electronic  
Op Cond: Transmitting in Low channel  
Operator: deny  
Test Spec: AC 120V/60Hz N  
Comment: Temp:25'C Humi:60%  
Date: 10. Nov 06 14:48



# Conducted Emission Test FCC Part 15

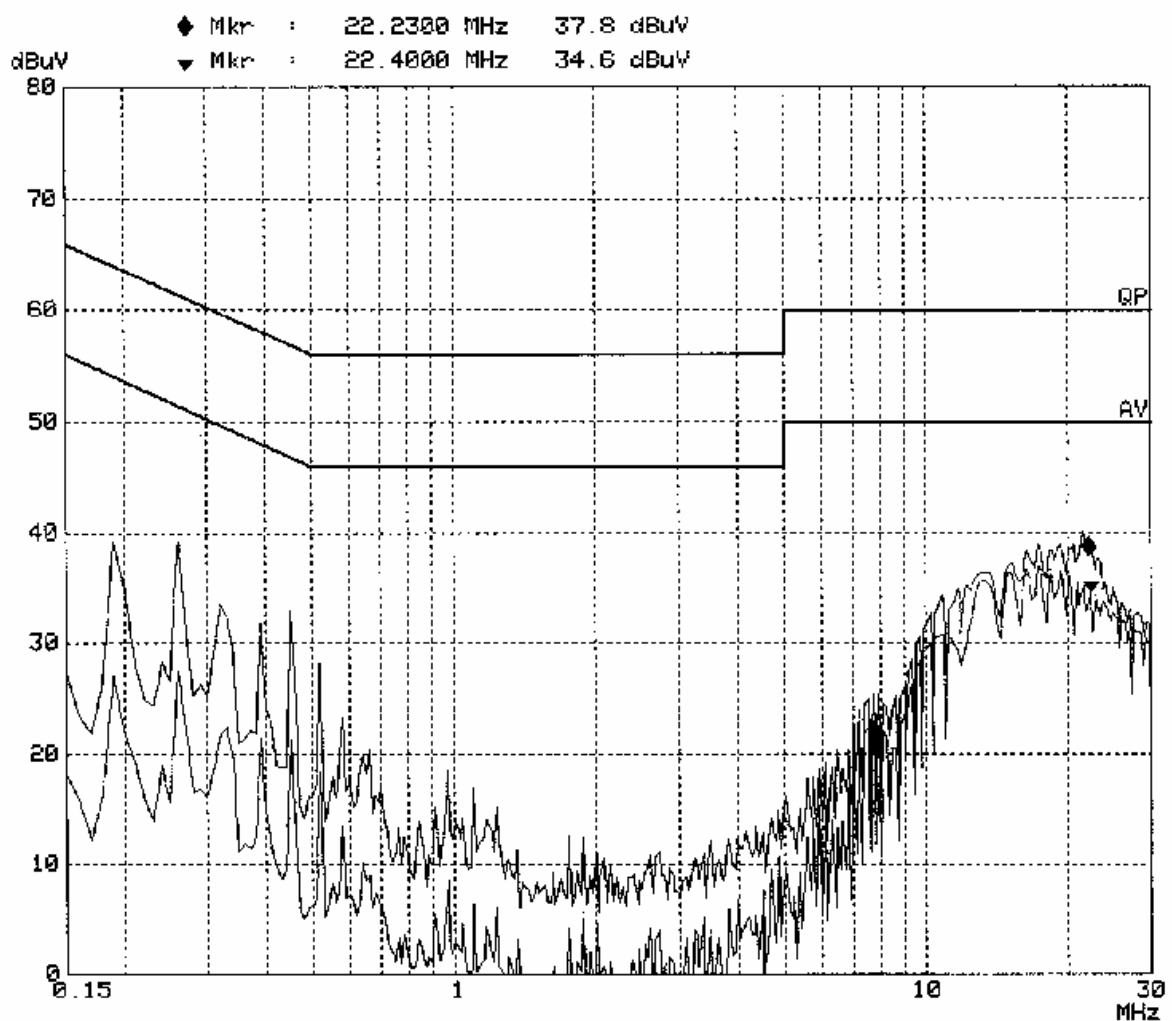
EUT: Reader M/N:SP-D300A  
Manuf: Super Electronic  
Op Cond: Transmitting in Middle channel  
Operator: deny  
Test Spec: AC 120V/60Hz L  
Comment: Temp:25'C Humi:60%  
Date: 10. Nov 06 14:32





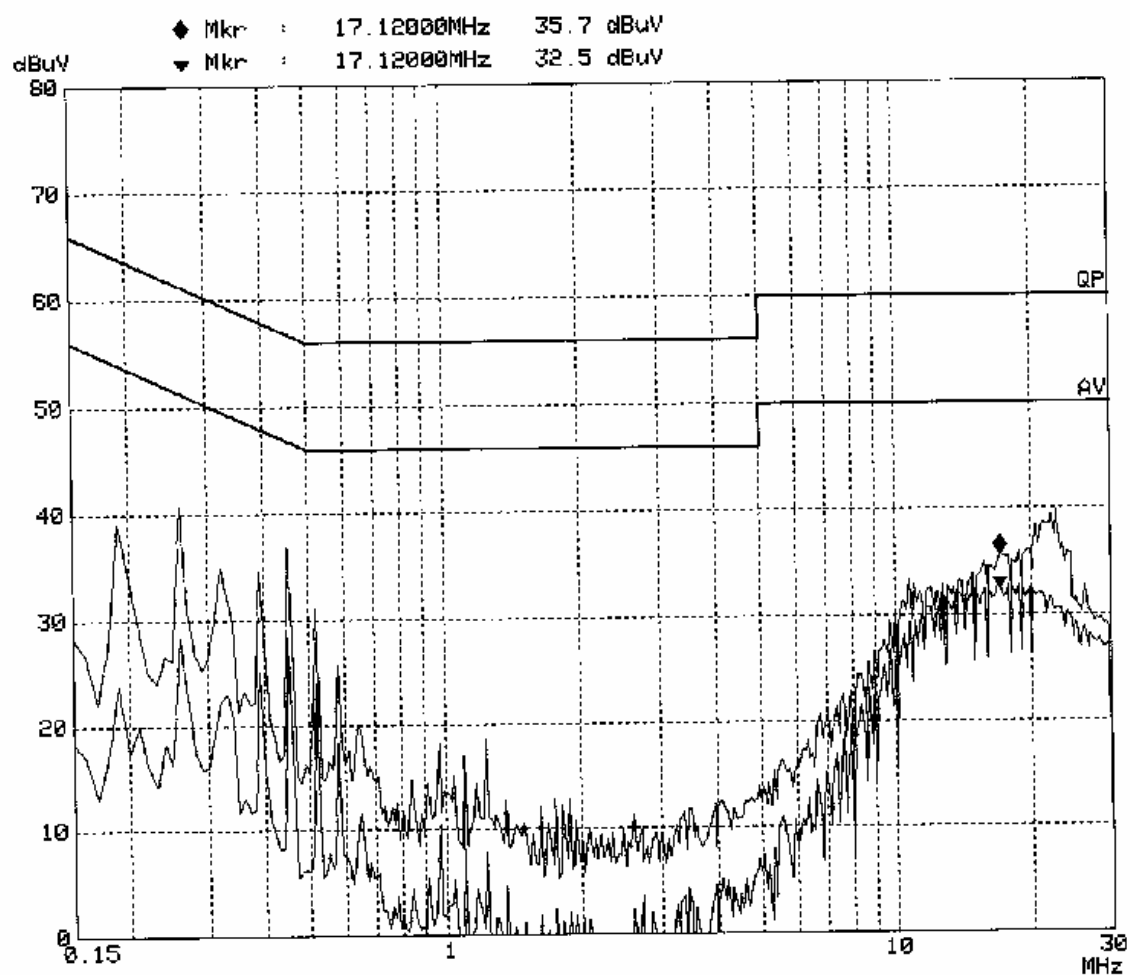
# Conducted Emission Test FCC Part 15

EUT: Reader M/N:SP-D300A  
Manuf: Super Electronic  
Op Cond: Transmitting in Middle channel  
Operator: deny  
Test Spec: AC 120V/60Hz N  
Comment: Temp:25'C Humi:60%  
Date: 10. Nov 06 14:25



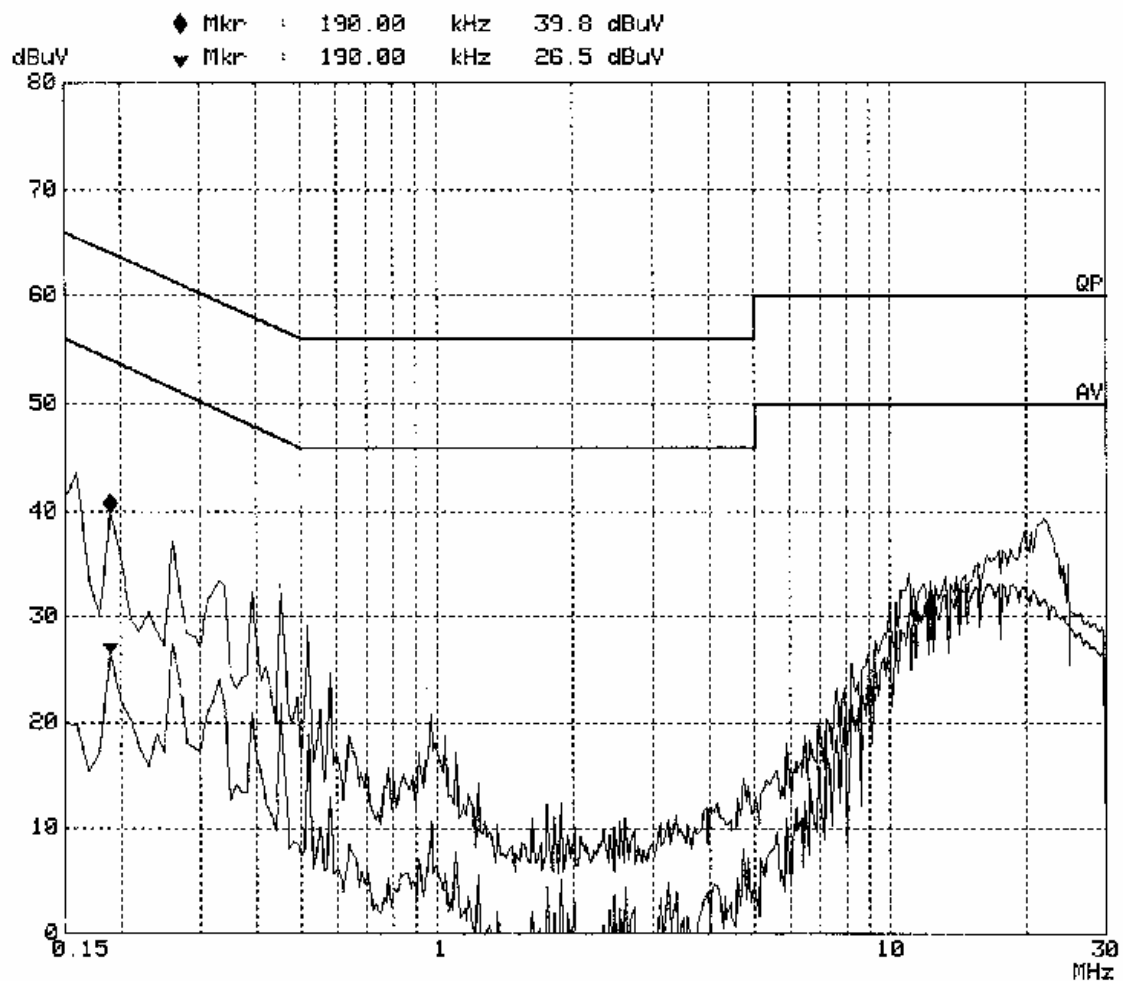
# Conducted Emission Test FCC Part 15

EUT: Reader M/N:SP-D300A  
Manuf: Super Electronic  
Op Cond: Transmitting in High channel  
Operator: deny  
Test Spec: AC 120V/60Hz L  
Comment: Temp:25'C Humi:60%  
Date: 10. Nov 06 14:09



# Conducted Emission Test FCC Part 15

EUT: Reader M/N:SP-D300A  
Manuf: Super Electronic  
Op Cond: Transmitting in High channel  
Operator: deny  
Test Spec: AC 120V/60Hz N  
Comment: Temp:25'C Humi:60%  
Date: 10. Nov 06 14:16



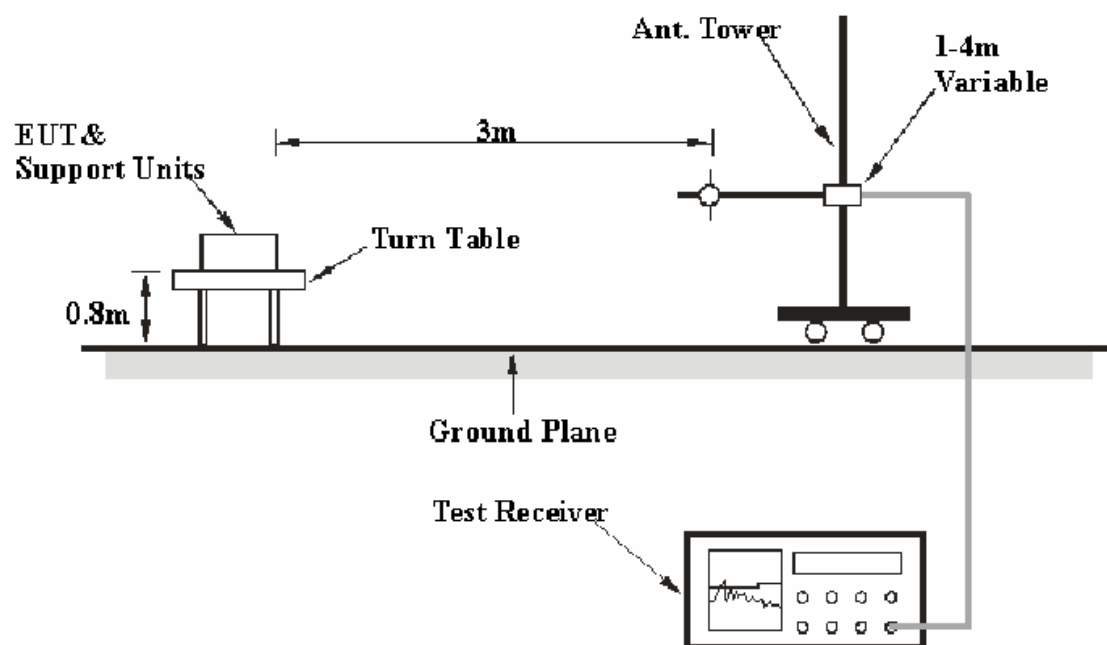
## §15.205 §15.209(a) §15.249(a) - RADIATED EMISSION

### 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  $\pm 4.0$  dB.

### EUT Setup



The radiated emission and out of band emission tests were performed in the 3 meters chamber A&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 adapter was connected to a 120 VAC/60 Hz power source.

## EMI Test Receiver Setup

The system was investigated from 30 MHz to 25000 MHz.

During the radiated emission and out of band emission test, the test receiver was set with the following configurations:

<i><b>Frequency Range</b></i>	<i><b>RBW</b></i>	<i><b>Video B/W</b></i>
30 – 1000 MHz	100 kHz	300 kHz
1000 MHz – 25000 MHz	1MHz	3 MHz

## Test Equipment List and Details

<b>Manufacturer</b>	<b>Description</b>	<b>Model</b>	<b>Serial Number</b>	<b>Calibration Date</b>	<b>Calibration Due Date</b>
Rohde & Schwarz	EMI Test Receiver	ESCI	100028	2006-8-17	2007-8-17
HP	Amplifier	HP8447E	1937A01046	2006-8-17	2007-8-17
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2006-4-28	2007-4-28
Agilent	Spectrum Analyzer	8564E	3943A01781	2005-12-8	2006-12-8
HP	Preamplifier	8449B	3008A00277	2006-8-17	2007-8-17
SUNOL SCIENCES	Horn Antenna	DRH-118	A052604	2006-7-20	2007-7-20

\* **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 adapter was 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 peak and average 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:

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

## Test Results Summary

According to the data in the following table, the EUT complied with the FCC Part 15.209 & 15.249, with the worst margin reading of:

Transmitting (Low channel): **-8.79 dB** at **7206 MHz** in the **Vertical** polarization, above 1GHz  
 Transmitting (Middle channel): **-9.80 dB** at **9764 MHz** in the **Vertical** polarization, above 1GHz  
 Transmitting (High channel): **-10.02 dB** at **9920 MHz** in the **Horizontal** polarization, above 1GHz  
**11.0 dB** at **73.709600 MHz** in the **Vertical** polarization, 30MHz-1000MHz

## Test Data

### Environmental Conditions

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

*The testing was performed by Deny Xiong on 2006-11-10.*

*Test mode: Transmitting (Low channel)*

Frequency	Meter Reading dBuV/m	Detector	Direction	Height	Polar	Antenna	Cable	Amplifier	Corr.	FCC Part 15.209 & 15.249		
						Loss	loss	Gain	Ampl.	Limit	Margin	
MHz		PK/QP/AV	Degree	Meter	H / V	dB	dB	dB	dBuV/m	dBuV/m	dB	Comment
Low Channel												
7206	39.0	AV	90	1.2	V	35.4	4.51	33.7	45.21	54	-8.79	Harmonic
9608	33.87	AV	158	1.3	V	37.6	5.35	34.1	42.72	54	-11.28	Harmonic
9608	33.83	AV	238	1.5	H	37.6	5.35	34.1	42.68	54	-11.32	Harmonic
7206	35.18	AV	261	1.0	H	35.4	4.51	33.7	41.39	54	-12.61	Harmonic
4804	55.17	PK	250	1.0	V	31.3	4.64	32.5	58.61	74	-15.39	Harmonic
4804	33.23	AV	180	1.6	V	31.3	4.64	32.5	36.67	54	-17.33	Harmonic
4804	32.17	AV	270	1.6	H	31.3	4.64	32.5	35.61	54	-18.39	Harmonic
4804	51.33	PK	49	1.2	H	31.3	4.64	32.5	54.77	74	-19.23	Harmonic
9608	45.0	PK	158	1.3	V	37.6	5.35	34.1	53.85	74	-20.15	Harmonic
7206	47.0	PK	180	1.0	V	35.4	4.51	33.7	53.21	74	-20.79	Harmonic
9608	44.33	PK	158	1.6	H	37.6	5.35	34.1	53.18	74	-20.82	Harmonic
7206	46.83	PK	180	1.3	H	35.4	4.51	33.7	53.04	74	-20.96	Harmonic
2402	89.67	PK	20	1.2	H	27.4	3.61	35.0	85.68	114	-28.32	Fundamental
2402	87.67	PK	18	1.6	V	27.4	3.61	35.0	83.68	114	-30.32	Fundamental
2402	54.56	AV	263	1.4	H	27.4	3.61	35.0	50.57	94	-43.43	Fundamental
2402	54.17	AV	45	1.0	V	27.4	3.61	35.0	50.18	94	-43.82	Fundamental

Test mode: Transmitting (Middle channel)

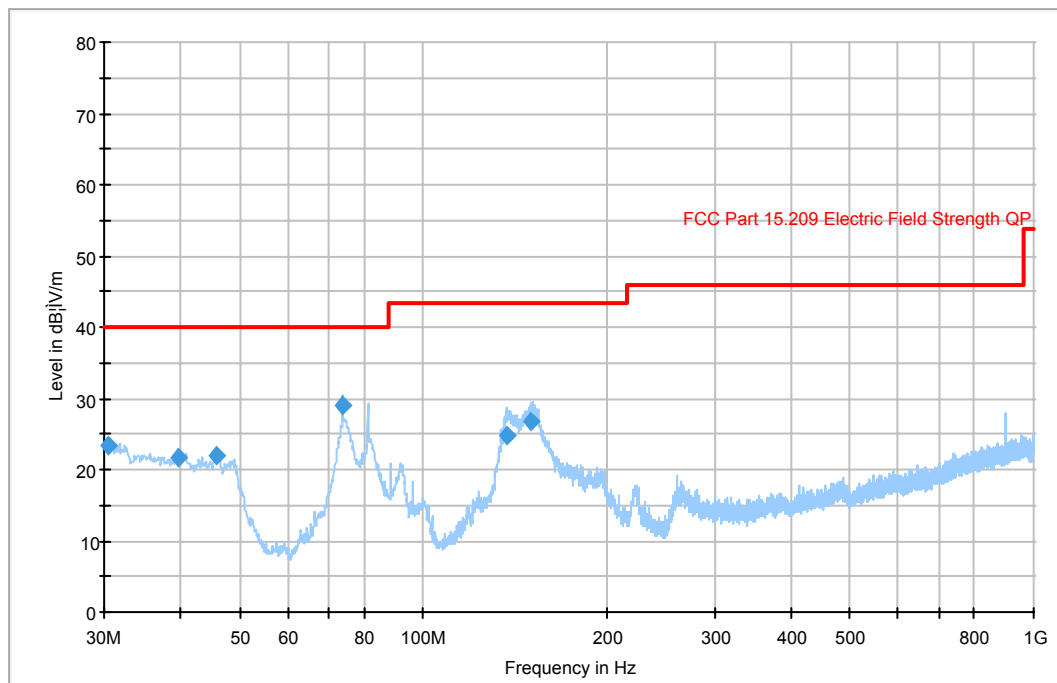
Frequency	Meter Reading	Detector	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier Gain	Corr. Ampl.	FCC Part 15.209 & 15.249		
MHz	dBuV/m	PK/QP/AV	Degree	Meter	H / V	dB	dB	dB	dBuV/m	Limit dBuV/m	Margin dB	Comment
Middle Channel												
9764	34.33	AV	256	1.5	H	38.2	5.77	34.1	44.2	54	-9.80	Harmonic
9764	33.86	AV	130	1.3	V	38.2	5.77	34.1	43.73	54	-10.27	Harmonic
7323	36.25	AV	90	1.2	V	35.3	4.75	33.7	42.6	54	-11.40	Harmonic
7323	36.0	AV	45	1.0	H	35.3	4.75	33.7	42.35	54	-11.65	Harmonic
4882	53.38	PK	109	1.2	H	31.3	4.64	33.4	55.92	74	-18.08	Harmonic
7323	49.33	PK	90	1.2	V	35.3	4.75	33.7	55.68	74	-18.32	Harmonic
9764	45.67	PK	256	1.5	H	38.2	5.77	34.1	55.54	74	-18.46	Harmonic
7323	48.83	PK	180	1.0	H	35.3	4.75	33.7	55.18	74	-18.82	Harmonic
4882	32.33	AV	109	1.2	H	31.3	4.64	33.4	34.87	54	-19.13	Harmonic
4882	32.26	AV	180	1.6	V	31.3	4.64	33.4	34.8	54	-19.20	Harmonic
9764	44.83	PK	130	1.3	V	38.2	5.77	34.1	54.7	74	-19.30	Harmonic
4882	51.17	PK	45	1.0	V	31.3	4.64	33.4	53.71	74	-20.29	Harmonic
2441	88.83	PK	197	1.6	H	27.4	3.61	35.0	84.84	114	-29.16	Fundamental
2441	88.0	PK	182	1.2	V	27.4	3.61	35.0	84.01	114	-29.99	Fundamental
2441	54.5	AV	197	1.6	H	27.4	3.61	35.0	50.51	94	-43.49	Fundamental
2441	54.3	AV	182	1.2	V	27.4	3.61	35.0	50.31	94	-43.69	Fundamental

*Test mode: Transmitting (High channel)*

Frequency	Meter Reading dBuV/m	Detector	Direction	Height	Polar	Antenna	Cable	Amplifier	Corr.	FCC Part 15.209 & 15.249		
						Loss	loss	Gain	Ampl.	Limit	Margin	
MHz		PK/QP/AV	Degree	Meter	H / V	dB	dB	dB	dBuV/m	dBuV/m	dB	Comment
High Channel												
9920	34.85	AV	147	1.6	H	38.0	5.23	34.1	43.98	54	-10.02	Harmonic
9920	34.67	AV	259	1.2	V	38.0	5.23	34.1	43.8	54	-10.20	Harmonic
7440	36.8	AV	45	1.0	H	35.3	4.75	33.7	43.15	54	-10.85	Harmonic
7440	36.0	AV	90	1.2	V	35.3	4.75	33.7	42.35	54	-11.65	Harmonic
9920	49.33	PK	147	1.6	H	38.0	5.23	34.1	58.46	74	-15.54	Harmonic
7440	50.0	PK	180	1.0	H	35.3	4.75	33.7	56.35	74	-17.65	Harmonic
4960	32.64	AV	109	1.2	H	32.0	4.55	33.4	35.79	54	-18.21	Harmonic
4960	32.5	AV	180	1.6	V	32.0	4.55	33.4	35.65	54	-18.35	Harmonic
9920	45.83	PK	259	1.2	V	38.0	5.23	34.1	54.96	74	-19.04	Harmonic
7440	48.0	PK	90	1.2	V	35.3	4.75	33.7	54.35	74	-19.65	Harmonic
4960	48.67	PK	109	1.2	H	32.0	4.55	33.4	51.82	74	-22.18	Harmonic
4960	48.33	PK	45	1.0	V	32.0	4.55	33.4	51.48	74	-22.52	Harmonic
2480	88.42	PK	197	1.6	H	27.4	3.61	35.0	84.43	114	-29.57	Fundamental
2480	86.83	PK	182	1.2	V	27.4	3.61	35.0	82.84	114	-31.16	Fundamental
2480	54.5	AV	197	1.6	H	27.4	3.61	35.0	50.51	94	-43.49	Fundamental
2480	54.0	AV	182	1.2	V	27.4	3.61	35.0	50.01	94	-43.99	Fundamental



30 MHz-1000 MHz:



Frequency (MHz)	Quasi Peak (dB µ V/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Limit (dB µ V/m)	Margin (dB)
73.709600	29.0	102.0	V	243.0	-19.7	40.0	11.0
30.420900	23.4	102.0	V	336.0	-6.3	40.0	16.6
150.508525	26.8	101.0	V	57.0	-14.3	43.5	16.7
45.935675	22.0	116.0	V	14.0	-17.2	40.0	18.0
39.575425	21.6	102.0	V	0.0	-13.0	40.0	18.4
136.767375	24.9	101.0	V	8.0	-13.1	43.5	18.6

## §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

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW of spectrum analyzer to 100KHz and VBW to 300KHz with a convenient frequency span including 100kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

### Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	Spectrum Analyzer	8564E	3943A01781	2005-12-8	2006-12-8

\* **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:	1006mbar

*The testing was performed by Deny Xiong on 2006-11-10.*

*Test Mode: Transmitting*

Frequency (MHz)	Reading (dBuV/m)	Antenna Factor (dB)	Cable loss (dB)	Amplifier (dB)	Correct Amplitude (dBuV/m)	Limit (dBuV/m)	Margin
2399.9	34.5	27.4	3.61	35.0	30.51	54	-23.49
2483.6	35.2	27.4	3.61	35.0	31.21	54	-22.79