



FCC TEST REPORT

REPORT NO.: RF0502F01

MODEL NO.: TM04001

RECEIVED: Jan. 03, 2005

TESTED: Jan. 24 ~ Jan. 31, 2005

APPLICANT: NINGBO RIXING ELECTRONICS CO, LTD

ADDRESS: INDUSTRIAL ZONE, WUXIANG TOWN, NINGBO, CHINA.

ISSUED BY: ADT (Shanghai) Corporation

LAB LOCATION: 2F, Building C, No.1618, Yishan rd., Shanghai, China

This test report consists of 29 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product endorsement by CNLA, NVLAP or any government agencies. The test results in the report only apply to the tested sample.

Table of Contents

1	CERTIFICATION	3
2	SUMMARY OF TEST RESULTS	4
3.	GENERAL INFORMATION.....	5
3.1	GENERAL DESCRIPTION OF EUT	5
3.2	DESCRIPTION OF TEST MODES.....	6
3.3	GENERAL DESCRIPTION OF APPLIED STANDARDS	6
3.4	DESCRIPTION OF SUPPORT UNITS	6
3.5	CONFIGURATION OF SYSTEM UNDER TEST	7
4.	TEST TYPES AND RESULTS	8
4.1	CONDUCTED EMISSION MEASUREMENT	8
4.1.1	LIMITS OF CONDUCTED EMISSION MEASUREMENT.....	8
4.1.2	TEST INSTRUMENTS	8
4.1.3	TEST PROCEDURES	8
4.1.4	DEVIATION FROM TEST STANDARD	9
4.1.5	TEST SETUP	10
4.1.6	EUT OPERATING CONDITIONS	10
4.1.7	TEST RESULTS	11
4.2	RADIATED EMISSION MEASUREMENT	15
4.2.1	LIMITS OF RADIATED EMISSION MEASUREMENT.....	15
4.2.2	TEST INSTRUMENTS	16
4.2.3	TEST PROCEDURES	17
4.2.4	DEVIATION FROM TEST STANDARD	17
4.2.5	TEST SETUP	18
4.2.6	EUT OPERATING CONDITIONS	18
4.2.7	TEST RESULTS	19
4.3	BAND EDGES MEASUREMENT	24
4.3.1	LIMITS OF BAND EDGES MEASUREMENT.....	24
4.3.2	TEST INSTRUMENTS	24
4.3.3	TEST PROCEDURE	24
4.3.4	EUT OPERATING CONDITION	24
4.3.5	TEST RESULTS	24
5.	PHOTOGRAPHS OF THE TEST CONFIGURATION	27
6.	INFORMATION ON THE TESTING LABORATORIES	29

1 CERTIFICATION

PRODUCT : WIRELESS OUTDOOR GARDEN SPEAKERS

MODEL NO.: TM04001

BRAND: SONDEX

APPLICANT : NINGBO RIXING ELECTRONICS CO, LTD

TEST ITEM: ENGINEERING SAMPLE

STANDARDS : FCC 47 CFR Part 15, Subpart C (Section 15.249), ANSI C63.4-1992

We, **ADT (Shanghai) Corporation**, hereby certify that four samples of the designation have been tested in our facility from Jan. 24 to Jan. 31, 2005. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions herein specified.

Prepared by:

Natascha Wen



(nataascha wen)

Reviewed by:

Wailand Zhang



(wailand zhang)

Approval by:

Wallace Pan
Laboratory Manager



2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: 47 CFR Part 15, Subpart C			
STANDARD PARAGRAPH	TEST TYPE	RESULT	REMARK
15.207	Conducted Emission Test	PASS	
15.209 15.249	Radiated Emission Test	PASS	
15.249	Band Edge Measurement Limit: 50 dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit

NOTE2: The information of measurement uncertainty is available upon the customer's request.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	WIRELESS OUTDOOR GARDEN SPEAKERS
MODEL NO.	TM04001
BRAND	SONDPEX
POWER SUPPLY	DC 12V
MODULATION TYPE	FM
CARRIER FREQUENCY OF EACH CHANNEL	912~913 MHz
BANDWIDTH OF EACH CHANNEL	1MHzHz
NUMBER OF CHANNEL	2
ANTENNA TYPE	Integral Loop antenna (antenna gain: 1dBi)
DATA CABLE	NA
I/O PORTS	NA

NOTE:

1. For more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

Ten channels are provided in the EUT

Channel	Frequency	Channel	Frequency
1	912MHz	2	913MHz

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a WIRELESS OUTDOOR GARDEN SPEAKERS. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 15, Subpart C. (15.249)
ANSI C63.4: 1992

All test items have been performed and recorded as per the above standards.

3.4 DESCRIPTION OF SUPPORT UNITS

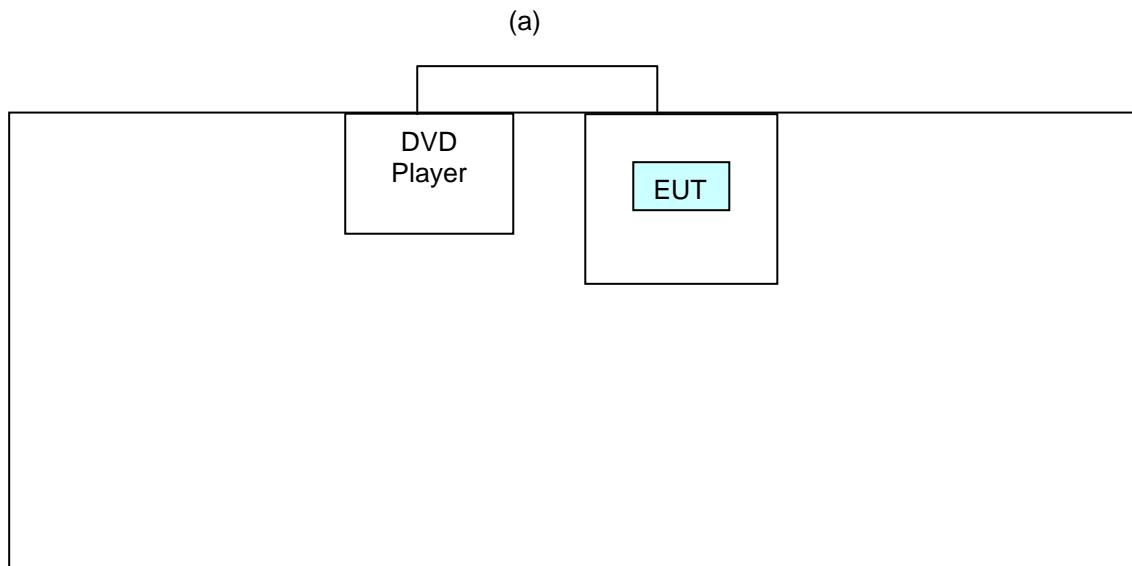
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DVD Player	Sony	DVP-NS575P	7006437	VERIFICATION

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
(a)	1m Audio Cable

NOTE: All power cords of the above support units are non shielded (1.8m).

3.5 CONFIGURATION OF SYSTEM UNDER TEST



4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.1.2 TEST INSTRUMENTS

Description & Manufacturer	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100295	Apr. 19, 2005
RF signal cable Woken	RG-58	E1CBL09	May. 30, 2005
LISN ROHDE & SCHWARZ	NSLK8127	8127-408	Feb. 12, 2005
LISN ROHDE & SCHWARZ	NSLK8126	8126-388	Jul. 04, 2005
Software ADT	ADT_Cond_V 7.3.0	NA	NA

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2.. The test was performed in Shielded Room No. 1.

4.1.3 TEST PROCEDURES

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

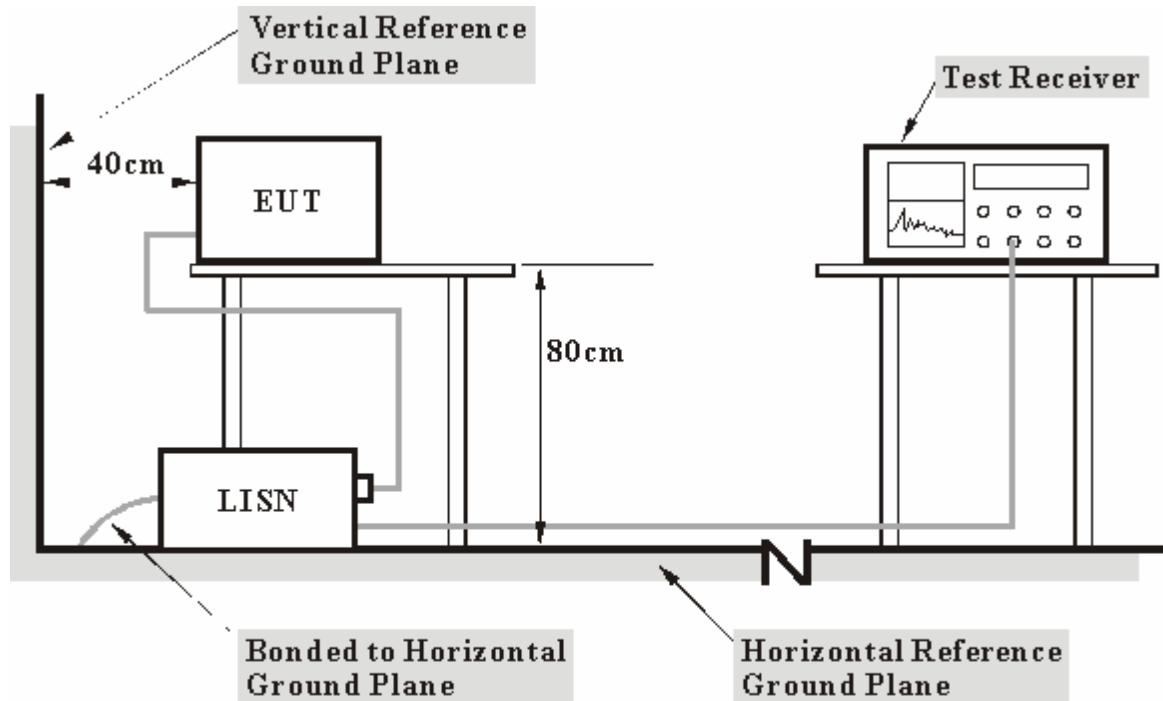


- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST 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.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.1.6 EUT OPERATING CONDITIONS

1. Insert the base audio card to the base of EUT.
2. Set the EUT under transmission condition continuously at specific channel frequency.
3. Connect a 1KHz tone with amplitude between 300 to 1000Vrms to the "Audio IN" of the base unit.

4.1.7 TEST RESULTS

EUT	WIRELESS OUTDOOR GARDEN SPEAKERS	MODEL	TM04001
MODE	Channel 1	6dB BANDWIDTH	9kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	TESTED BY: Steven Lu		

No.	Frequency MHz	Corr. Factor dB	Reading (dBuV)		Emission (dBuV)		Limit (dBuV)		Margins (dB)	
			QP	AV	QP	AV	QP	AV	QP	AV
1	0.15000	0.50	35.72	9.32	36.22	9.82	66.00	56.00	-29.78	-46.18
+2	0.37123	0.50	31.67	4.84	32.17	5.34	58.47	48.47	-26.30	-43.13
3	0.66758	0.50	25.48	-1.85	25.98	-1.35	56.00	46.00	-30.02	-47.35
4	6.33530	0.50	3.71	-1.15	4.21	-0.65	60.00	50.00	-55.79	-50.65
5	13.87281	0.50	18.10	7.05	18.60	7.55	60.00	50.00	-41.40	-42.45
6	26.69890	0.50	25.14	20.74	25.64	21.24	60.00	50.00	-34.36	-28.76

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

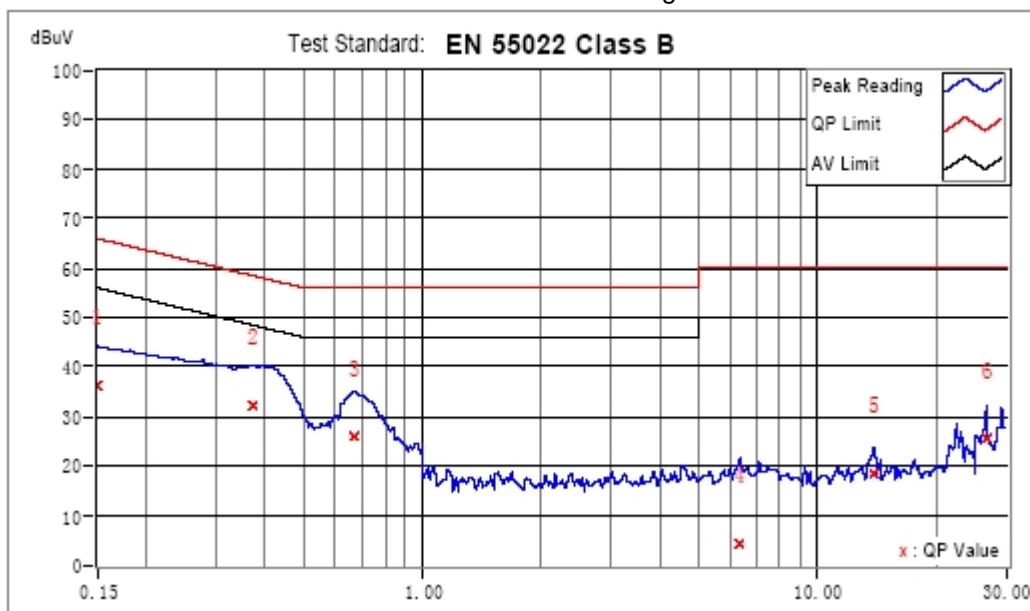
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

3. The emission levels of other frequencies were very low against the limit.

4. Margin value = Emission level - Limit value

5. Correction factor = Insertion loss + Cable loss

6. Emission Level = Correction Factor + Reading Value.

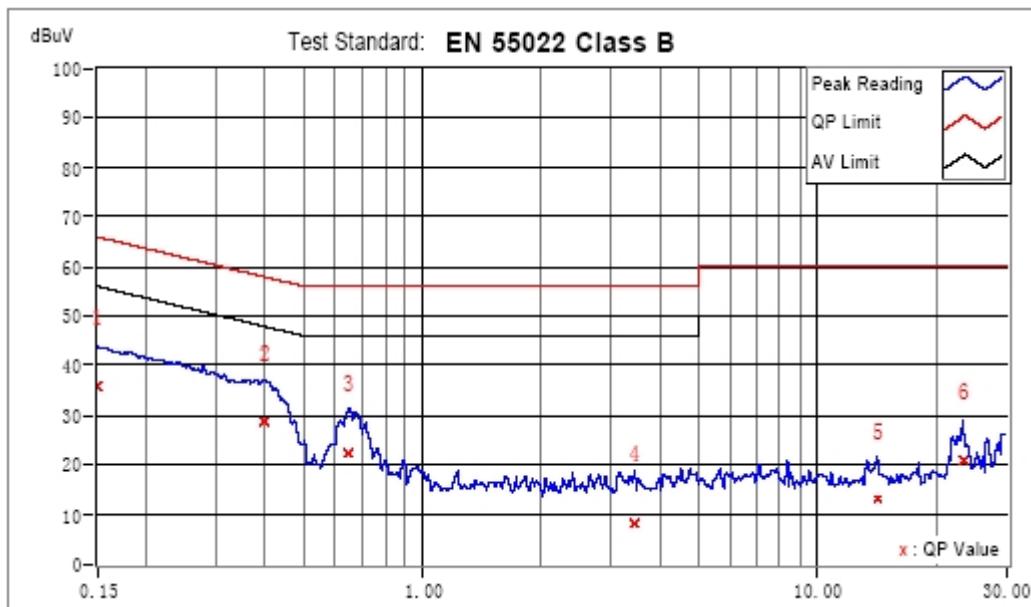


EUT	WIRELESS OUTDOOR GARDEN SPEAKERS	MODEL	TM04001
MODE	Channel 1	6dB BANDWIDTH	9kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	22deg. C, 70%RH, 991hPa		TESTED BY: Steven Lu

No.	Frequency MHz	Corr. Factor dB	Reading (dBuV)		Emission (dBuV)		Limit (dBuV)		Margins (dB)	
			QP	AV	QP	AV	QP	AV	QP	AV
1	0.15000	0.50	35.32	8.93	35.82	9.43	66.00	56.00	-30.18	-46.57
+2	0.39730	0.50	28.21	0.33	28.71	0.83	57.91	47.91	-29.20	-47.08
3	0.65177	0.50	22.01	4.49	22.51	4.99	56.00	46.00	-33.49	-41.01
4	3.44708	0.50	7.88	6.96	8.38	7.46	56.00	46.00	-47.62	-38.54
5	14.15250	0.50	12.64	1.95	13.14	2.45	60.00	50.00	-46.86	-47.55
6	23.31026	0.50	20.21	14.41	20.71	14.91	60.00	50.00	-39.29	-35.09

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.

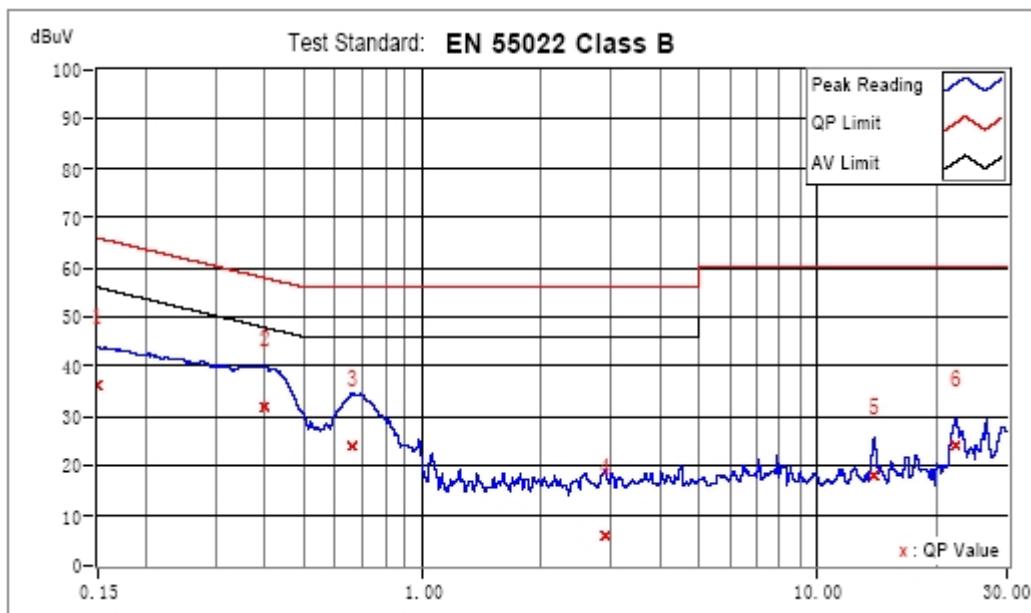


EUT	WIRELESS OUTDOOR GARDEN SPEAKERS	MODEL	TM04001
MODE	Channel 2	6dB BANDWIDTH	9kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	22deg. C, 70%RH, 991hPa		TESTED BY: Steven Lu

No.	Frequency MHz	Corr. Factor dB	Reading (dBuV)		Emission (dBuV)		Limit (dBuV)		Margins (dB)	
			QP	AV	QP	AV	QP	AV	QP	AV
1	0.15000	0.50	35.58	9.24	36.08	9.74	66.00	56.00	-29.92	-46.26
+2	0.39889	0.50	31.58	3.06	32.08	3.56	57.88	47.88	-25.80	-44.32
3	0.65963	0.50	23.61	-0.71	24.11	-0.21	56.00	46.00	-31.89	-46.21
4	2.90336	0.50	5.21	3.68	5.71	4.18	56.00	46.00	-50.29	-41.82
5	13.92830	0.50	17.79	7.15	18.29	7.65	60.00	50.00	-41.71	-42.35
6	22.39804	0.50	23.69	18.26	24.19	18.76	60.00	50.00	-35.81	-31.24

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.

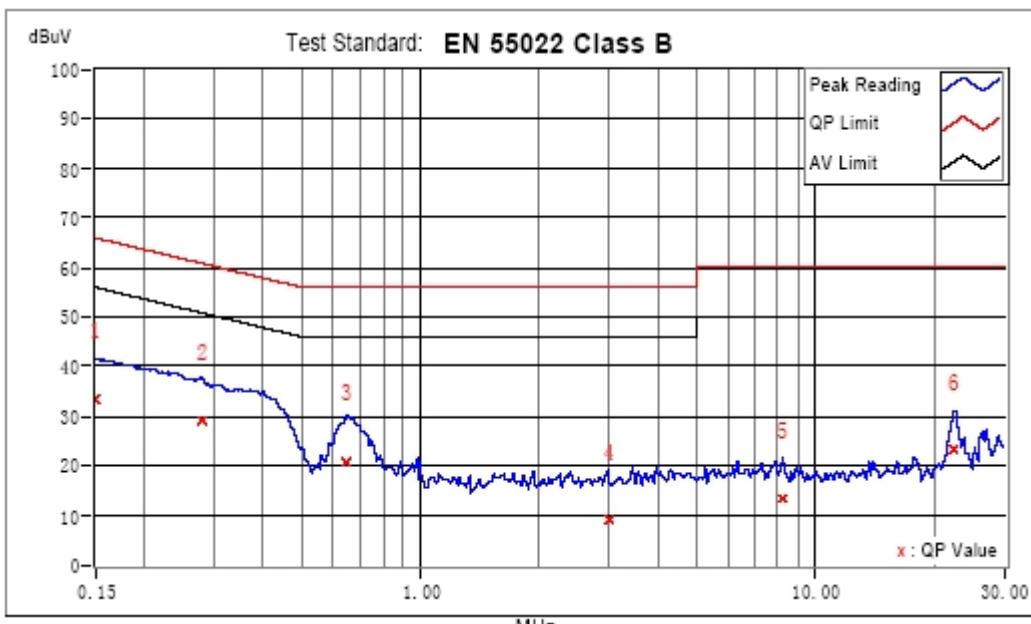


EUT	WIRELESS OUTDOOR GARDEN SPEAKERS	MODEL	TM04001
MODE	Channel 10	6dB BANDWIDTH	9kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	22deg. C, 70%RH, 991hPa		TESTED BY: Steven Lu

No.	Frequency MHz	Corr. Factor dB	Reading (dBuV)		Emission (dBuV)		Limit (dBuV)		Margins (dB)	
			QP	AV	QP	AV	QP	AV	QP	AV
1	0.15000	0.50	33.16	7.53	33.66	8.03	66.00	56.00	-32.34	-47.97
+2	0.27849	0.50	28.58	20.31	29.08	20.81	60.86	50.86	-31.78	-30.05
3	0.64918	0.50	20.38	7.65	20.88	8.15	56.00	46.00	-35.12	-37.85
4	3.00689	0.50	8.47	6.87	8.97	7.37	56.00	46.00	-47.03	-38.63
5	8.27418	0.50	12.91	11.94	13.41	12.44	60.00	50.00	-46.59	-37.56
6	22.40554	0.50	22.77	16.08	23.27	16.58	60.00	50.00	-36.73	-33.42

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

According to 15.249(a) the field strength of emissions from intentional radiators operated under these frequencies bands shall not exceed the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (dBuV/m)	
902 ~ 928	Peak	Average
	114	94

According to 15.249(d), emissions radiated outside of the specified frequency bands (902 ~ 928MHz), except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in 15.209 as below table, whichever is the lesser attenuation.

Frequencies (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100296	Apr. 19, 2005
Spectrum Analyzer AGILENT	E4403B	MY41440678	June 30, 2005
Spectrum Analyzer AGILENT	E4445A	MY42510198	June 30, 2005
BILOG Antenna SCHWARZBECK	VULB9168	9168-159	Sep. 26, 2005
Horn Antenna SCHWARZBECK	BBHA 9120D	9120D-398	Sep. 26, 2005
Preamplifier Agilent	8447D	2944A10643	Jan. 27, 2005
Preamplifier Agilent	HP 8449B-FG	3008A01966	Jan. 27, 2005
RF signal cable Woken	RG-402	E1CBH01	May. 30, 2005
RF signal cable Woken	RG-412	E1CBL02	May. 30, 2005
RF signal cable Woken	RG-412	E1CBL03	May. 30, 2005
RF signal cable Woken	RG-412	E1CBL04	May. 30, 2005
Software ADT	ADT_Radiated_V7.5	NA	NA

NOTE:

1. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to NML/ROC and NIST/USA.
2. “*” = These equipment are used for the final measurement.
3. The horn antenna and HP preamplifier (model: HP 8449B-FG) are used only for the measurement of emission frequency above 1GHz if tested.
4. The test was performed in ADT Chamber No. 1

4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.

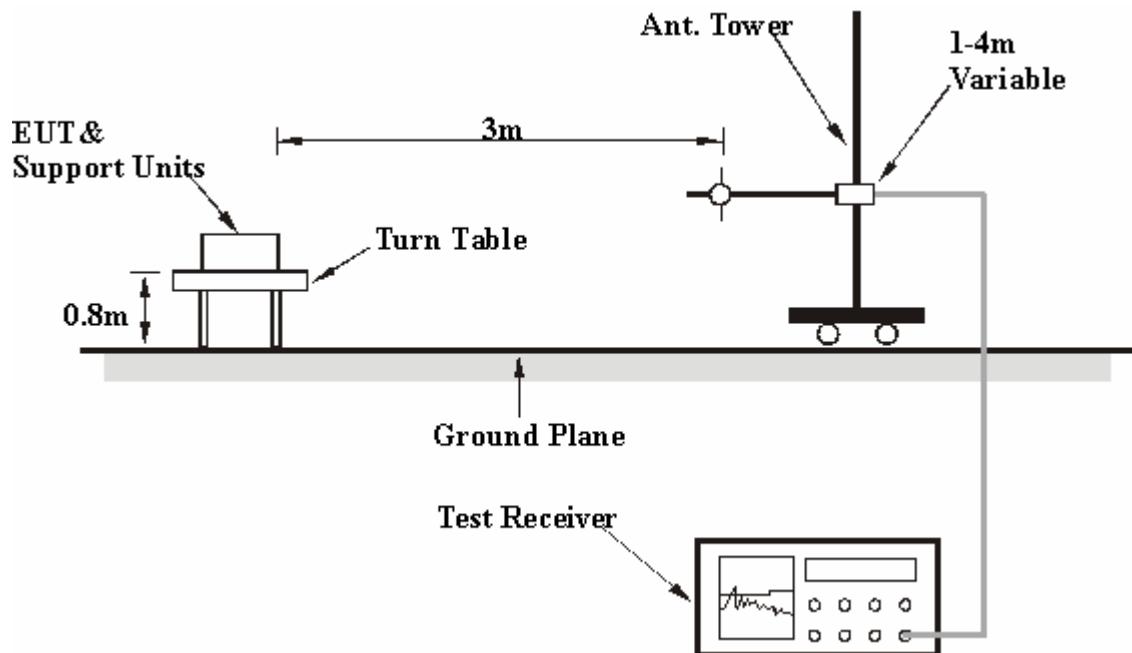
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.2.6 EUT OPERATING CONDITIONS

Same as item 4.1.6

4.2.7 TEST RESULTS

EUT		WIRELESS OUTDOOR GARDEN SPEAKERS		MODEL		TM04001	
INPUT POWER (SYSTEM)		120Vac, 60 Hz		FREQUENCY RANGE		Below 1000MHz	
ENVIRONMENTAL CONDITIONS		25deg. C, 60%RH, 991hPa		DETECTOR FUNCTION		Quasi-Peak	
TESTED BY: Jamison Chang							

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Frequency	Factor	Reading	Emission	Limit	Margin	Tower	Table
	MHz	dB	dBuV/m	dBuV/m	dBuV/m	dB	cm	deg
1	293.53	16.33	25.81	42.14	46	-3.86	100	296
2	361.27	17.79	9.84	27.63	46	-18.37	200	301
3	378	18.23	15.92	34.15	46	-11.85	100	327
4	429	19.58	17.23	36.82	46	-9.18	165	293
5	451.59	20.14	17.47	37.62	46	-8.38	171	290
6	912.02	27.45	50.87	78.31	46	32.31	198	295

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Frequency	Factor	Reading	Emission	Limit	Margin	Tower	Table
	MHz	dB	dBuV/m	dBuV/m	dBuV/m	dB	cm	deg
1	293.54	16.33	23.69	40.02	46.00	-5.98	100	283
2	428.98	19.58	20.38	39.96	46.00	-6.04	113	335
3	459.00	20.26	18.71	38.97	46.00	-7.03	117	351
4	486.00	20.67	18.09	38.76	46.00	-7.24	122	215
5	912.02	27.45	53.32	80.76	46.00	34.76	99	169
6	948.27	27.81	13.82	41.63	46.00	-4.37	99	351

REMARKS:

1. Emission level (dBuV/m)=Raw Value (dBuV) + Correction Factor (dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.

EUT	WIRELESS OUTDOOR GARDEN SPEAKERS	MODEL	TM04001
CHANNEL	Channel 1		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	22deg. C, 60%RH, 991hPa	DETECTOR FUNCTION	Peak (PK) Average (AV)
TESTED BY: Steven Lu			

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*912.02	78.31 PK	114.00	-33.24	99	169	50.87	27.45
2	*912.02	78.31 AV	94.00	-13.24	99	169	50.87	27.45

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*912.02	80.77PK	114.00	-30.33	1.40 V	160	53.32	27.45
2	*912.02	80.77PK	94.00	-10.38	1.40 V	160	53.32	27.45

REMARKS:

1. Emission level (dBuV/m)=Raw Value (dBuV) + Correction Factor (dB)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “*”: Fundamental frequency.

EUT	WIRELESS OUTDOOR GARDEN SPEAKERS	MODEL	TM04001
CHANNEL	Channel 1		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	22deg. C, 60%RH, 991hPa	DETECTOR FUNCTION	Peak (PK) Average (AV)
TESTED BY: Steven Lu			

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M								
No.	Freq.	Emission Level	Raw Value	Correction Factor	LIMIT	Margin	Antenna Height	Table Angle
	(GHz)	(dBuV/m)	(dBuV/m)	(dB/m)	(dBuV/m)	(dB)	cm	deg
1	1.028	44.35 PK	35.55	-8.8	74	-29.65	200	10
2	1.045	41.23 PK	32.56	-8.67	74	-32.77	180	46
3	1.122	43.03 PK	34.44	-8.59	74	-30.97	100	55
4	1.827	45.65 PK	39.07	-6.58	74	-28.35	135	90
5	2.721	41.77 PK	38.85	-2.92	74	-32.23	175	88
6	3.606	37.91 PK	36.4	-1.51	74	-36.09	215	265

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M								
No.	Freq.	Emission Level	Raw Value	Correction Factor	LIMIT	Margin	Antenna Height	Table Angle
	(GHz)	(dBuV/m)	(dBuV/m)	(dB/m)	(dBuV/m)	(dB)	cm	deg
1	1.827	49.20 PK	42.62	-6.58	74	-24.8	100	200
2	2.149	47.34 PK	39.48	-7.86	74	-26.66	150	58
3	2.349	40.75 PK	33.55	-7.2	74	-33.25	125	35
4	2.533	42.94 PK	35.52	-7.42	74	-31.06	140	225
5	3.606	41.66 PK	40.15	-1.51	74	-32.34	100	246
6	4.342	46.29 PK	46.35	0.06	74	-27.71	100	75

REMARKS:

1. Emission level (dBuV/m)=Raw Value (dBuV) + Correction Factor (dB)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.

EUT	WIRELESS OUTDOOR GARDEN SPEAKERS	MODEL	TM04001
CHANNEL	Channel 2		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	22deg. C, 60%RH, 991hPa	DETECTOR FUNCTION	Peak (PK) Average (AV)
TESTED BY: Steven Lu			

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	* 913.02	76.46 PK	114.00	-37.54	1.00 H	249	48.99	27.46
2	* 913.02	76.46 AV	94.00	-17.54	1.00 H	249	48.99	27.22

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	* 913.02	86.72 PK	114.00	-27.28	1.48 V	161	59.25	27.46
2	* 913.02	86.72 AV	94.00	-7.28	1.48 V	161	59.25	27.22

REMARKS:

1. Emission level (dBuV/m)=Raw Value (dBuV) + Correction Factor (dB)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “*”: Fundamental frequency.

EUT	WIRELESS OUTDOOR GARDEN SPEAKERS	MODEL	TM04001
CHANNEL	Channel 2		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	22deg. C, 60%RH, 991hPa	DETECTOR FUNCTION	Peak (PK) Average (AV)
TESTED BY: Steven Lu			

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M								
No.	Freq.	Emission Level	Raw Value	Correction Factor	LIMIT	Margin	Antenna Height	Table Angle
	(GHz)	(dBuV/m)	(dBuV/m)	(dB/m)	(dBuV/m)	(dB)	cm	deg
1	1.001	47.70 PK	38.82	-8.88	74	-26.3	100	78
2	1.031	43.84 PK	35.14	-8.7	74	-30.16	125	67
3	1.170	41.86 PK	33.35	-8.51	74	-32.14	100	312
4	1.817	47.8 PK	41.22	-6.58	74	-26.20	150	0
5	2.711	38.2 PK	35.31	-2.89	74	-35.8	100	157
6	3.605	40.72 PK	39.21	-1.51	74	-33.28	115	26

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M								
No.	Freq.	Emission Level	Raw Value	Correction Factor	LIMIT	Margin	Antenna Height	Table Angle
	(GHz)	(dBuV/m)	(dBuV/m)	(dB/m)	(dBuV/m)	(dB)	cm	deg
1	1.001	41.93 PK	33.05	-8.88	74	-32.07	150	31
2	1.078	41.66 PK	32.96	-8.7	74	-32.34	180	186
3	1.170	40.02 PK	31.51	-8.51	74	-33.98	135	69
4	1.817	45.22 PK	38.64	-6.58	74	-28.78	100	15
5	2.711	39.65 PK	36.76	-2.89	74	-34.35	200	0
6	3.605	38.15 PK	36.64	-1.51	74	-35.85	145	34

REMARKS:

1. Emission level (dBuV/m)=Raw Value (dBuV) + Correction Factor (dB)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.

4.3 BAND EDGES MEASUREMENT

4.3.1 LIMITS OF BAND EDGES MEASUREMENT

Emission radiated outside of the specified frequency bands (902 ~ 928MHz), except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in 15.209, whichever is the lesser attenuation.

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	E4445A	MY42510198	JUNE 30, 2005

NOTE:

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low loss cable. Set both RBW and VBW of spectrum analyzer to 100 kHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

4.3.4 EUT OPERATING CONDITION

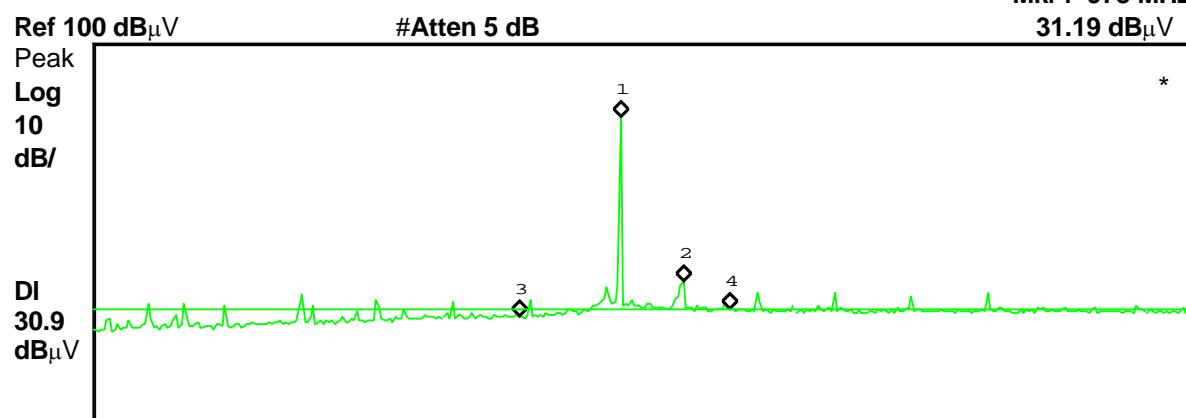
Enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.5 TEST RESULTS

The spectrum plots are attached on the following 2 pages. It shows compliance with the requirement of emissions level outside of the specified frequency bands shall be below the level of the 15.209.

Agilent 16:06:34 Feb 4, 2005

L

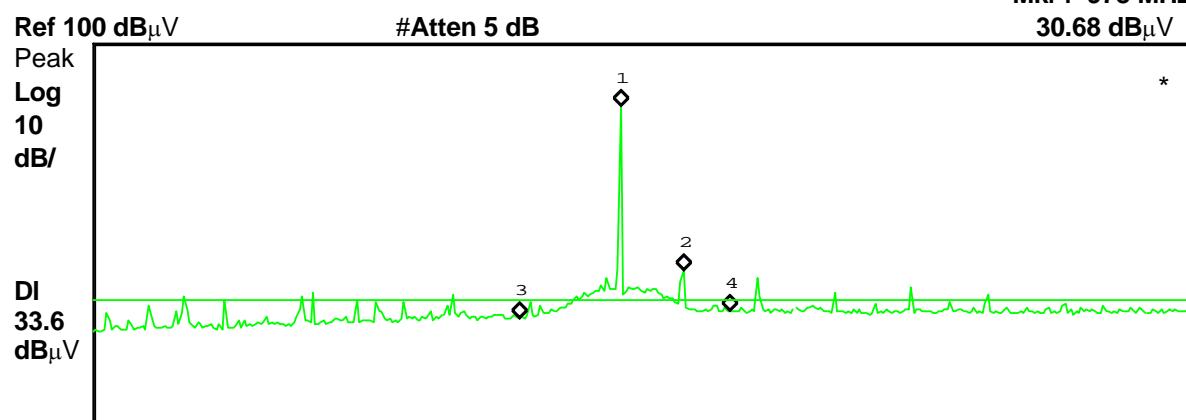
Mkr4 978 MHz
31.19 dB μ V

Center 925 MHz Span 650 MHz
#Res BW 120 kHz #VBW 300 kHz #Sweep 200 ms (401 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	912 MHz	80.89 dB μ V
2	(1)	Freq	949 MHz	38.14 dB μ V
3	(1)	Freq	852 MHz	29.13 dB μ V
4	(1)	Freq	978 MHz	31.19 dB μ V

Agilent 16:08:28 Feb 4, 2005

L

Mkr4 978 MHz
30.68 dB μ V

Center 925 MHz Span 650 MHz
#Res BW 120 kHz #VBW 300 kHz #Sweep 200 ms (401 pts)

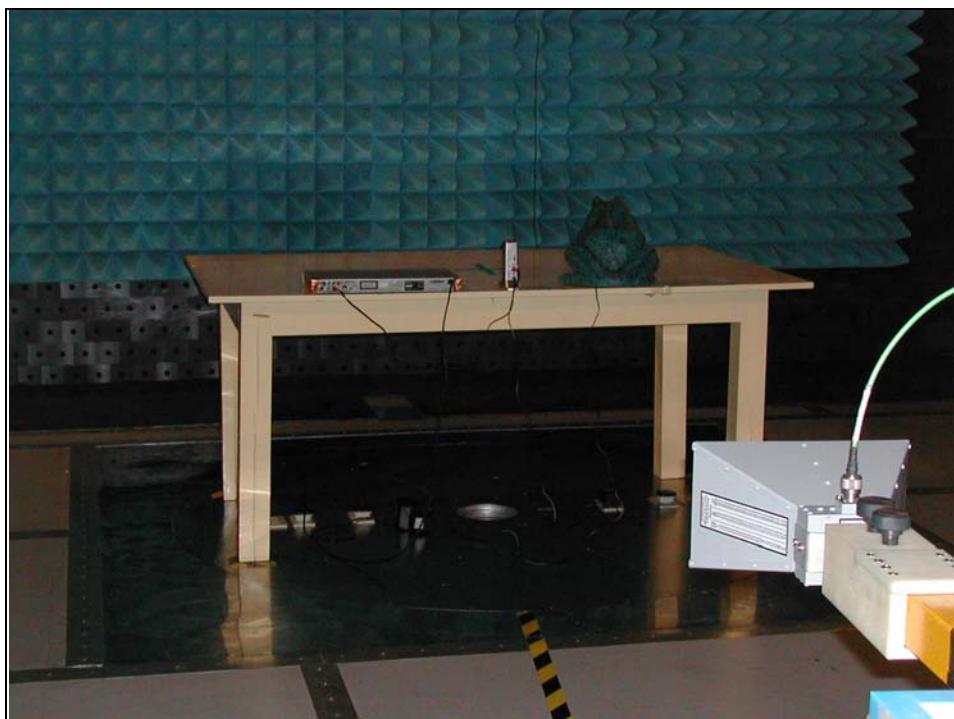
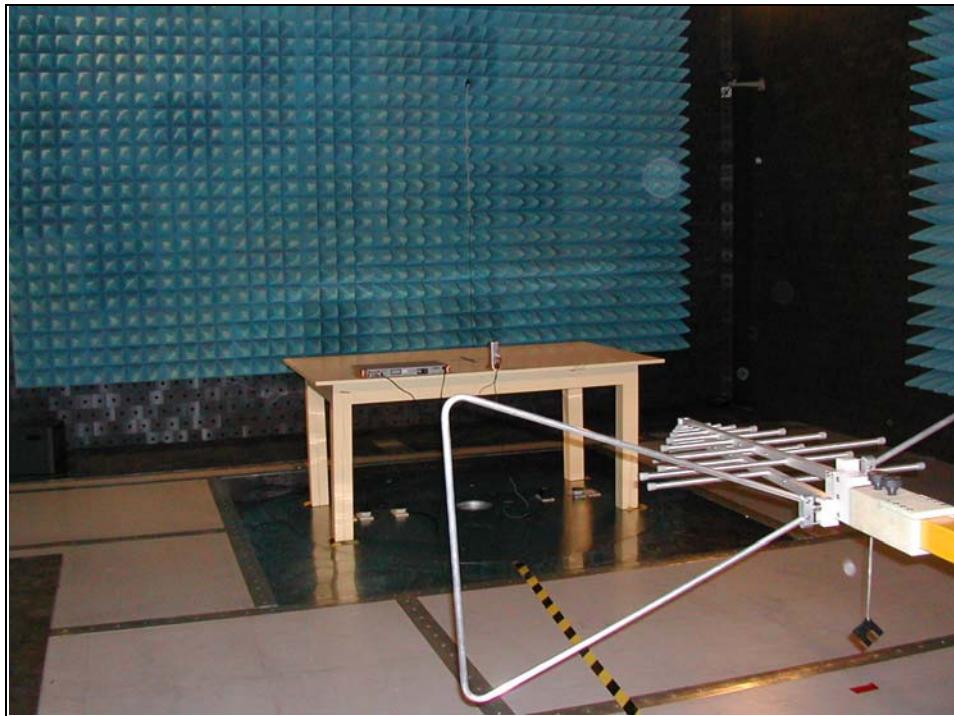
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	912 MHz	83.61 dB μ V
2	(1)	Freq	949 MHz	41.28 dB μ V
3	(1)	Freq	852 MHz	28.56 dB μ V
4	(1)	Freq	978 MHz	30.68 dB μ V

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST



RADIATED EMISSION TEST





6. INFORMATION ON THE TESTING LABORATORIES

We, ADT (Shanghai) Corp., were founded in 2003 to provide our best service in EMC and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025, Guide 25 or EN 45001:

USA	FCC
Norway	DNV

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site:

www.adt.com.tw/index.5/phtml.

If you have any comments, please feel free to contact us at the following:

Shanghai EMC Lab:

Tel: +86-21-6465-9091

Fax: +86-21-6465-9091

Email: adtsh@vip.163.com

Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.