

# FCC VERIFICATION TEST REPORT

**REPORT NO.:** FV970602A33A

**MODEL NO.:** GT-41069P9012-T2,  
GT-41069P9024-5.0-T2,  
GT-41069P9024-T2

**RECEIVED:** June 2, 2008

**TESTED:** June 3 ~ 5, 2008

**ISSUED:** Nov. 7, 2008

**APPLICANT:** GLOBTEK INC.

**ADDRESS:** 186 VETERANS DR NORTHVALE,  
NJ 07647 USA

**ISSUED BY:** Advance Data Technology Corporation

**LAB LOCATION:** No. 47, 14th Ling, Chia Pau Tsuen, Lin  
Kou Hsiang 244, Taipei Hsien, Taiwan,  
R. O. C.

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## 1 CERTIFICATION

**PRODUCT:** Switching Power Supply  
**BRAND NAME:** Globtek  
**MODEL NO:** GT-41069P9012-T2, GT-41069P9024-5.0-T2, GT-41069P9024-T2  
**TEST ITEM:** ENGINEERING SAMPLE  
**APPLICANT:** GLOBTEK INC.  
**TESTED:** June 3 ~ 5, 2008  
**STANDARDS:** FCC Part 15: 2007, Subpart B, Class B  
CISPR 22: 1997, Class B  
ICES-003: 2004, Class B  
ANSI C63.4-2003

The above equipment has been tested by **Advance Data Technology Corporation**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**PREPARED BY :** Megan Yu, **DATE:** Nov. 7, 2008  
(Megan Yu / Specialist)

**TECHNICAL ACCEPTANCE :** Arthur Lin, **DATE:** Nov. 7, 2008  
Responsible for EMI (Arthur Lin / Senior Engineer)

**APPROVED BY :** Kenny Meng, **DATE:** Nov. 7, 2008  
(Kenny Meng / Deputy Manager)

## 2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

Standard	Test Type	Result	Remarks
FCC Part 15: 2007 Subpart B, Class B	Conducted Test	PASS	Meets Class B Limit Minimum passing margin is -11.82 dB at 0.150 MHz
CISPR 22: 1997, Class B	Radiated Test	PASS	Meets Class B Limit Minimum passing margin is -6.39 dB at 69.43 MHz
ICES-003: 2004, Class B			

**Note:** The limit for radiated test was performed according to CISPR 22: 1997, which was specified in FCC PART 15 Subpart B 15.109(g). Also the limits of ICES-003: 2004 and CISPR 22:1997 Subpart B are same.

### 2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2.

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz ~ 30MHz	2.46 dB
Radiated emissions	30MHz ~ 1GHz	3.91 dB
	1GHz ~ 40GHz	2.89 dB

### 3 GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>PRODUCT</b>	Switching Power Supply
<b>MODEL NO.</b>	GT-41069P9012-T2, GT-41069P9024-5.0-T2, GT-41069P9024-T2
<b>POWER SUPPLY</b>	Switching Rating: refer to Note below Power cord: Non-shielded DC cable (1.8 m) with one ferrite core.
<b>DATA CABLE SUPPLIED</b>	N/A

#### NOTE:

1. The EUT is a Switching Power Supply (AC 2-pin) with the following models, which are identical to each other except for their output rating and transformer differences, as below:

Model No.	Specification		Transformer
	AC I/P	DC O/P	
GT-41069P9012-T2	100-240V, 1.5A, 50-60Hz	12V/ 7.5A	XF00500
GT-41069P9024-T2		24V/ 3.75A	XF00501
GT-4106P9024-5.0-T2		19V/ 4.74A	

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

### 3.2 DESCRIPTION OF TEST MODES

During the test, the EUT was tested under the following modes:

Test Item	Test Mode	Model No.	Test Condition
Conducted Test	Mode 1	GT-41069P9012-T2	Full load
	Mode 2	GT-41069P9024-T2	
	Mode 3	GT-4106P9024-5.0-T2	
Radiated Test	Mode 1	GT-41069P9012-T2	
	Mode 2	GT-41069P9024-T2	

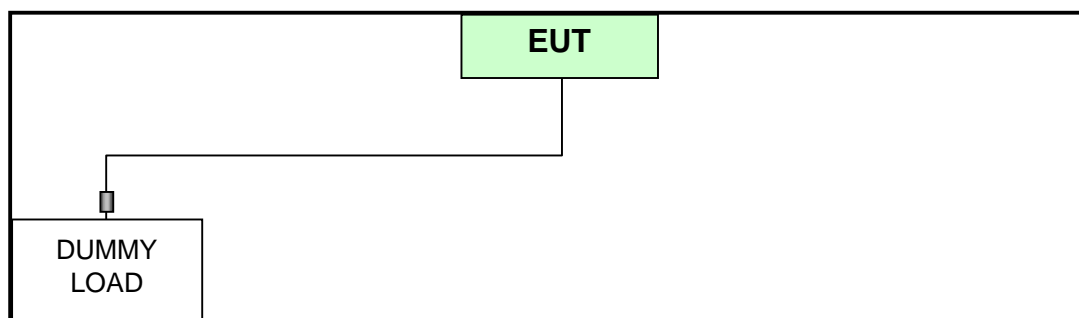
All above test modes were recorded in this report.

### 3.3 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	LOAD	ADT	L19A	L2-010006	N/A

#### Test Configuration



## 4 EMISSION TEST

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

**TEST STANDARD:**

**FCC Part 15: 2007, Subpart B (Section: 15.107)**

**CISPR 22: 1997 (section 5)**

**ICES-003: 2004 (Class A: section 5.2)  
(Class B: section 5.3)**

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	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
ROHDE & SCHWARZ Test Receiver	ESCS30	100290	Nov. 14, 2008
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH3-Z5	839135/006	Jul. 17, 2008
LISN With Adapter (for EUT)	AD10	C02Ada-001	Jul. 17, 2008
EMCO-L.I.S.N. (for peripheral)	3825/2	9204-1964	May 11, 2009
Software	ADT_Cond_V7.3.5	NA	NA
Software	ADT_ISN_V7.3.5	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C02.01	Jan, 09, 2009
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-298	Jan. 27, 2009
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-299	Jan. 27, 2009

- 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 ADT Shielded Room No. 2.
  3. The VCCI Site Registration No. C-240.

### **4.1.3 TEST PROCEDURE**

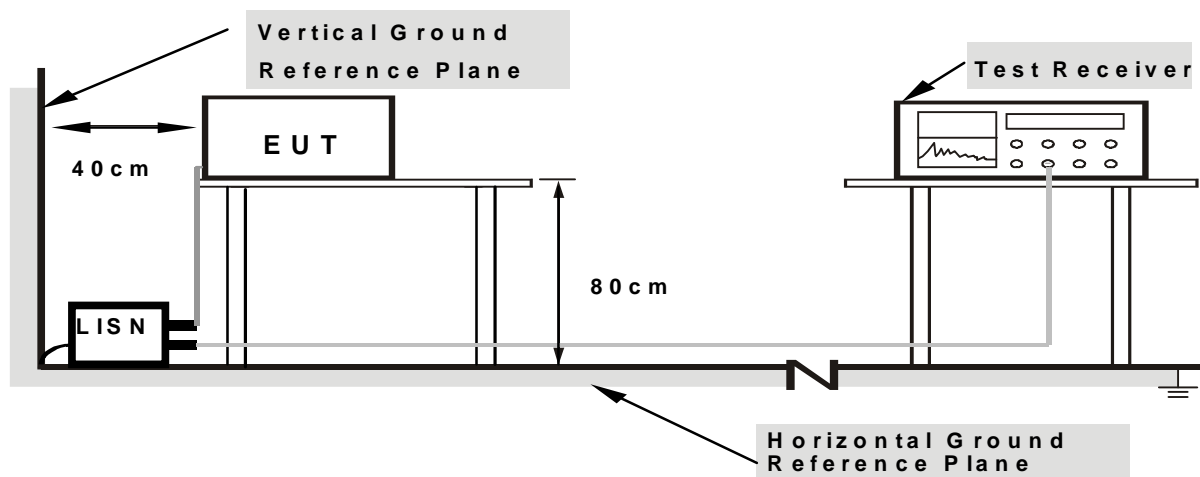
The basic test procedure was in accordance with ANSI C63.4-2003 (section 7), CISPR 22 (section 9) and ICES-003: 2004 (section 4).

- 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 under (Limit - 20dB) were not recorded.

### **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) are 80 cm from EUT and at least 80 cm from other units and other metal planes

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

## 4.1.6 EUT OPERATING CONDITIONS

Set the EUT under full resistor load.

#### 4.1.7 TEST RESULTS (1)

<b>TEST MODE</b>	Mode 1	<b>6dB BANDWIDTH</b>	9 kHz
<b>INPUT POWER</b>	120 Vac, 60 Hz	<b>PHASE</b>	Line (L)
<b>ENVIRONMENTAL CONDITIONS</b>	23 deg. C, 64% RH, 996 hPa	<b>TESTED BY:</b> Mars Wang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.30	53.88	-	54.18	-	66.00	56.00	-11.82	-
2	0.162	0.30	52.11	-	52.41	-	65.38	55.38	-12.97	-
3	0.173	0.30	50.67	-	50.97	-	64.79	54.79	-13.82	-
4	0.189	0.30	48.95	-	49.25	-	64.08	54.08	-14.83	-
5	0.201	0.30	47.97	-	48.27	-	63.58	53.58	-15.31	-
6	0.216	0.31	46.23	-	46.54	-	62.96	52.96	-16.42	-
7	0.236	0.32	44.67	-	44.99	-	62.24	52.24	-17.25	-
8	0.252	0.33	43.09	-	43.42	-	61.71	51.71	-18.29	-
9	0.283	0.34	41.29	-	41.63	-	60.73	50.73	-19.10	-
10	0.306	0.35	39.08	-	39.43	-	60.07	50.07	-20.64	-
11	0.318	0.36	38.55	-	38.91	-	59.76	49.76	-20.85	-
12	0.341	0.37	36.82	-	37.19	-	59.17	49.17	-21.98	-
13	0.382	0.39	35.98	-	36.37	-	58.24	48.24	-21.87	-
14	0.416	0.40	32.80	-	33.20	-	57.54	47.54	-24.34	-
15	0.459	0.40	33.77	-	34.17	-	56.71	46.71	-22.54	-
16	0.486	0.40	29.86	-	30.26	-	56.24	46.24	-25.98	-

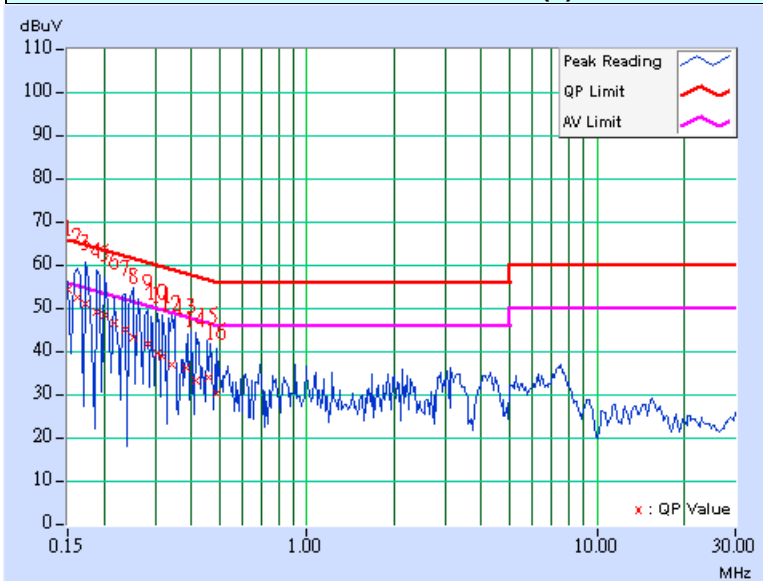
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value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

<b>TEST MODE</b>	Mode 1	<b>6dB BANDWIDTH</b>	9 kHz
<b>INPUT POWER</b>	120 Vac, 60 Hz	<b>PHASE</b>	Neutral (N)
<b>ENVIRONMENTAL CONDITIONS</b>	23 deg. C, 64% RH, 996 hPa	<b>TESTED BY:</b> Mars Wang	

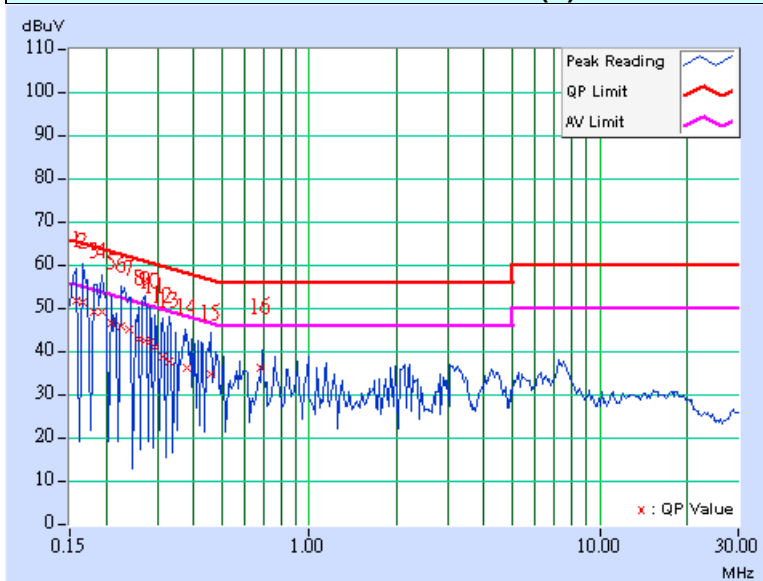
No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.158	0.20	51.67	-	51.87	-	65.58	55.58	-13.71	-
2	0.167	0.20	51.07	-	51.27	-	65.11	55.11	-13.84	-
3	0.181	0.20	48.94	-	49.14	-	64.43	54.43	-15.29	-
4	0.193	0.20	48.99	-	49.19	-	63.91	53.91	-14.72	-
5	0.209	0.20	46.55	-	46.75	-	63.26	53.26	-16.51	-
6	0.224	0.21	45.54	-	45.75	-	62.66	52.66	-16.91	-
7	0.240	0.22	44.95	-	45.17	-	62.10	52.10	-16.93	-
8	0.259	0.23	42.78	-	43.01	-	61.45	51.45	-18.44	-
9	0.271	0.24	42.21	-	42.45	-	61.08	51.08	-18.64	-
10	0.283	0.24	41.87	-	42.11	-	60.73	50.73	-18.62	-
11	0.295	0.25	40.63	-	40.88	-	60.40	50.40	-19.52	-
12	0.314	0.26	38.66	-	38.92	-	59.86	49.86	-20.95	-
13	0.330	0.26	37.65	-	37.91	-	59.46	49.46	-21.54	-
14	0.380	0.29	35.94	-	36.23	-	58.27	48.27	-22.04	-
15	0.457	0.30	34.42	-	34.72	-	56.74	46.74	-22.02	-
16	0.685	0.30	35.93	-	36.23	-	56.00	46.00	-19.77	-

- 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.

### PHASE OF POWER: LINE (L)



### PHASE OF POWER: LINE (N)

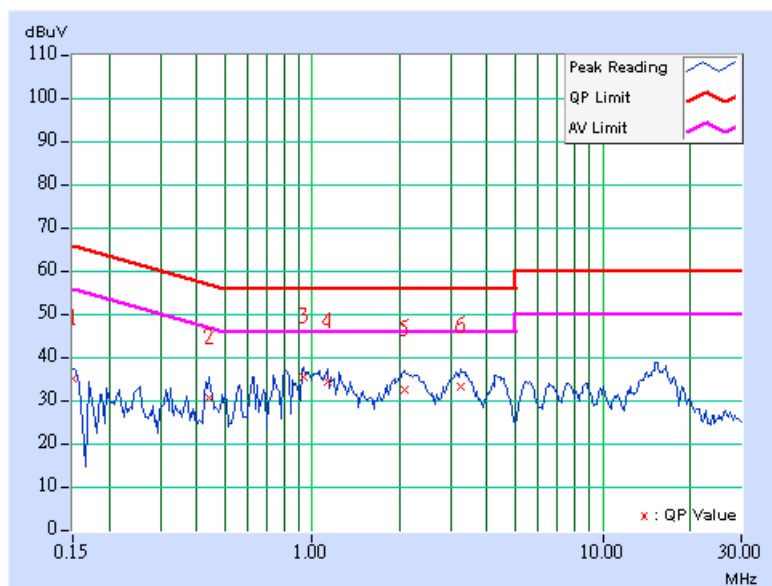


## 4.1.8 TEST RESULTS (2)

<b>TEST MODE</b>	Mode 2	<b>6dB BANDWIDTH</b>	9 kHz
<b>INPUT POWER</b>	120 Vac, 60 Hz	<b>PHASE</b>	Line (L)
<b>ENVIRONMENTAL CONDITIONS</b>	23 deg. C, 64% RH, 996 hPa	<b>TESTED BY:</b> Mars Wang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.30	34.62	-	34.92	-	66.00	56.00	-31.08	-
2	0.443	0.40	30.02	-	30.42	-	57.01	47.01	-26.59	-
3	0.939	0.40	35.06	-	35.46	-	56.00	46.00	-20.54	-
4	1.129	0.41	33.70	-	34.11	-	56.00	46.00	-21.89	-
5	2.090	0.51	32.10	-	32.61	-	56.00	46.00	-23.39	-
6	3.227	0.62	32.87	-	33.49	-	56.00	46.00	-22.51	-

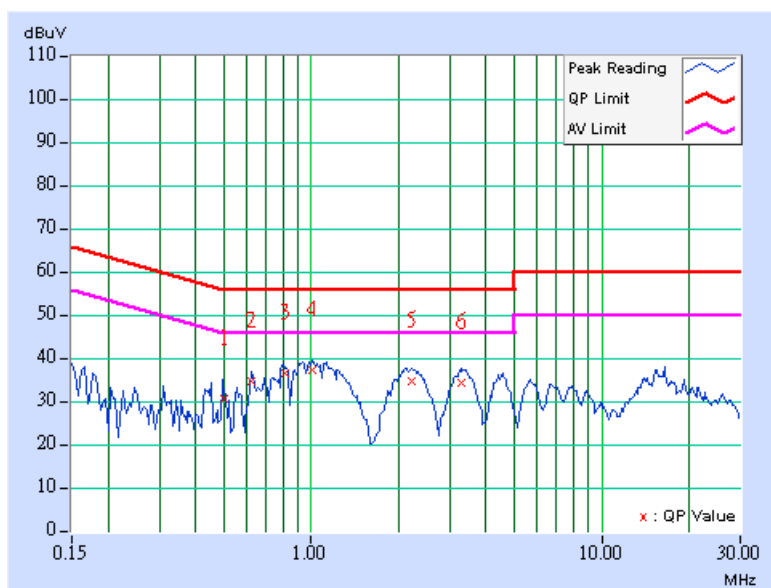
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value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



<b>TEST MODE</b>	Mode 2	<b>6dB BANDWIDTH</b>	9 kHz
<b>INPUT POWER</b>	120 Vac, 60 Hz	<b>PHASE</b>	Neutral (N)
<b>ENVIRONMENTAL CONDITIONS</b>	23 deg. C, 64% RH, 996 hPa	<b>TESTED BY:</b> Mars Wang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.501	0.30	30.33	-	30.63	-	56.00	46.00	-25.37	-
2	0.623	0.30	34.15	-	34.45	-	56.00	46.00	-21.55	-
3	0.809	0.30	36.28	-	36.58	-	56.00	46.00	-19.42	-
4	1.004	0.30	36.97	-	37.27	-	56.00	46.00	-18.73	-
5	2.230	0.42	34.42	-	34.84	-	56.00	46.00	-21.16	-
6	3.281	0.53	34.02	-	34.55	-	56.00	46.00	-21.45	-

- 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.



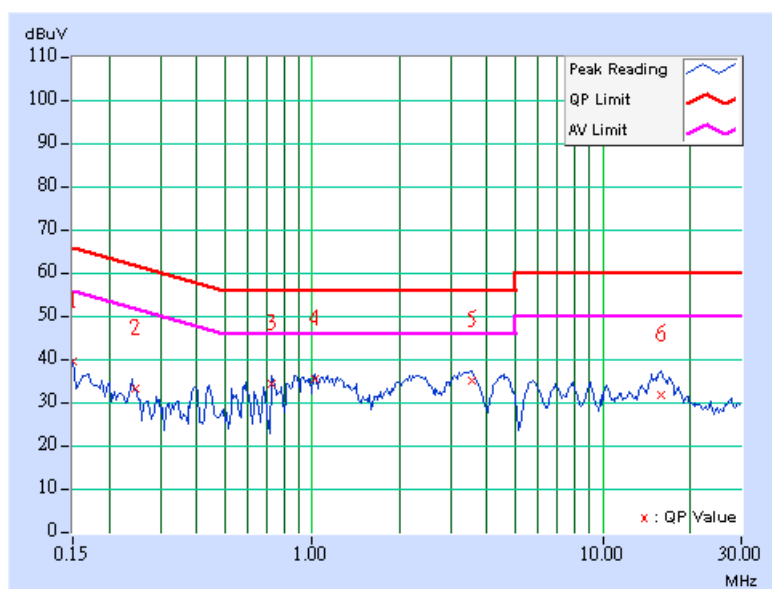


## 4.1.9 TEST RESULTS (3)

<b>TEST MODE</b>	Mode 3	<b>6dB BANDWIDTH</b>	9 kHz
<b>INPUT POWER</b>	120 Vac, 60 Hz	<b>PHASE</b>	Line (L)
<b>ENVIRONMENTAL CONDITIONS</b>	23 deg. C, 64% RH, 996 hPa	<b>TESTED BY:</b> Mars Wang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.30	38.01	-	38.31	-	66.00	56.00	-27.69	-
2	0.245	0.32	31.52	-	31.84	-	61.92	51.92	-30.07	-
3	0.728	0.40	32.66	-	33.06	-	56.00	46.00	-22.94	-
4	1.027	0.40	33.99	-	34.39	-	56.00	46.00	-21.61	-
5	3.543	0.65	33.33	-	33.98	-	56.00	46.00	-22.02	-
6	15.961	1.72	30.22	-	31.94	-	60.00	50.00	-28.06	-

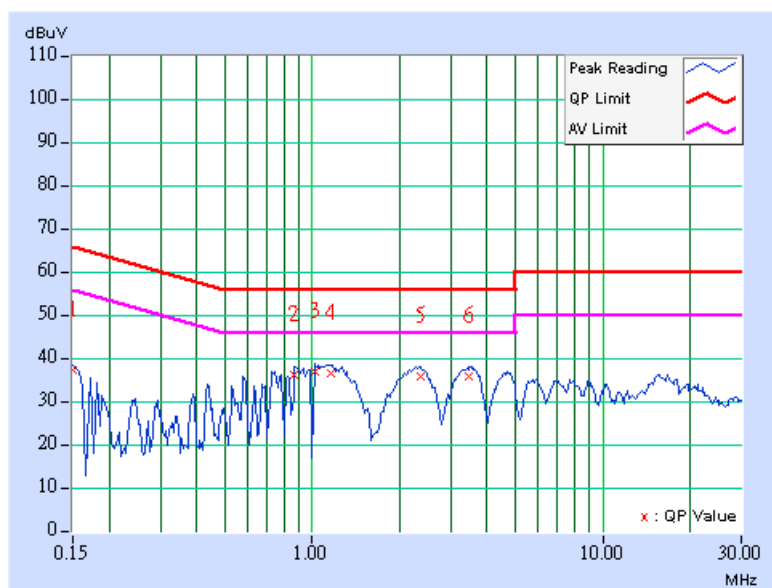
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value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



<b>TEST MODE</b>	Mode 3	<b>6dB BANDWIDTH</b>	9 kHz
<b>INPUT POWER</b>	120 Vac, 60 Hz	<b>PHASE</b>	Neutral (N)
<b>ENVIRONMENTAL CONDITIONS</b>	23 deg. C, 64% RH, 996 hPa	<b>TESTED BY:</b> Mars Wang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.20	36.97	-	37.17	-	66.00	56.00	-28.83	-
2	0.869	0.30	35.82	-	36.12	-	56.00	46.00	-19.88	-
3	1.023	0.30	36.45	-	36.75	-	56.00	46.00	-19.25	-
4	1.164	0.32	36.07	-	36.39	-	56.00	46.00	-19.61	-
5	2.352	0.44	35.33	-	35.77	-	56.00	46.00	-20.23	-
6	3.469	0.55	35.37	-	35.92	-	56.00	46.00	-20.08	-

- 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

**TEST STANDARD:**

**FCC Part 15: 2007, Subpart B (Section: 15.109)**

**CISPR 22: 1997 (section 6)**

**ICES-003: 2004 (Class A: Section 5.4)  
(Class B: Section 5.5)**

#### FOR FREQUENCY BELOW 1000 MHz

FREQUENCY (MHz)	Class A (at 10m)	Class B (at 10m)
	dBuV/m	dBuV/m
30 – 230	40	30
230 - 1000	47	37

Note: The limit for radiated test was performed according to CISPR 22: 1997, which was specified in FCC PART 15B 15.109(g). Also the limits of ICES-003: 2004 and CISPR 22: 1997 are same.

#### LIMIT OF RADIATED EMISSION OF FCC PART 15, SUBPART B FOR FREQUENCY ABOVE 1000 MHz

FREQUENCY (MHz)	Class A (dBuV/m) (at 3m)		Class B (dBuV/m) (at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80.0	60.0	74.0	54.0

- Note: (1) The lower limit shall apply at the transition frequencies.  
 (2) Emission level (dBuV/m) = 20 log Emission level (uV/m).  
 (3) All emanation 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.

## FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

## 4.2.2 TEST INSTRUMENTS

### Frequency Range 30MHz-1GHz

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ROHDE & SCHWARZ TEST RECEIVER	ESCS 30	100276	Nov. 04, 2008
CHASE Bilog Antenna	CBL6112B	2433	Apr. 24, 2009
ADT. Turn Table	TT100	0205	NA
ADT. Tower	AT100	0205	NA
Software	ADT_Radiated_V7.6.15	NA	NA
RF COAXIAL Switches	EMH-011	1001	Aug. 15, 2008
WOKEN RF cable	8D	CABLE-ST2-01	Aug. 15, 2008

- 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 ADT Open Site No. 2.
  3. The VCCI Site Registration No. R-237.

### Frequency Range 1GHz-40GHz

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Agilent Spectrum	8564EC	4208A00659	Jun. 04, 2009
Agilent Preamplifier	8449B	3008A01201	Oct. 01, 2008
Agilent Preamplifier	8449B	3008A01292	Aug. 05, 2008
MITEQ Preamplifier	AMF-6F-26040 0-33-8P	892164	May 14, 2009
Schwarzbeck Horn Antenna	BBHA-9170	BBHA9170190	May 14, 2009
Schwarzbeck Horn Antenna	BBHA-9120	D130	May 27, 2009
ADT. Turn Table	TT100	0205	NA
ADT. Tower	AT100	0205	NA
Software	ADT_Radiated_V7.6.15	NA	NA
SUHNER RF cable	SF106-18	PHACAB-1G-40 GHz	Dec. 11, 2008

- 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 ADT Open Site No. 2.
  3. The VCCI Site Registration No. R-237.

### 4.2.3 TEST PROCEDURE

The basic test procedure was in accordance with ANSI C63.4-2003 (section 8), CISPR 22 (section 10) and ICES-003: 2004 (section 4).

- 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 10 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 turn table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.

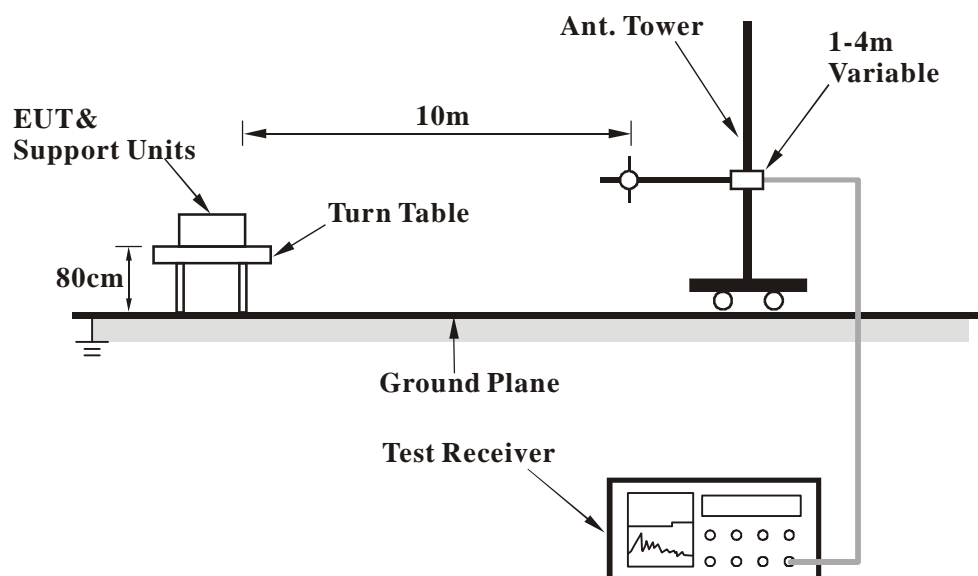
#### NOTE:

1. The resolution bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth is 1MHz and video bandwidth of test receiver/spectrum analyzer is 3MHz for Peak detection at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz for Average detection (AV) at frequency above 1GHz.
3. For measurement of frequency above 1000 MHz, the EUT was set 3 meters away from the interference-receiving antenna.

### 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

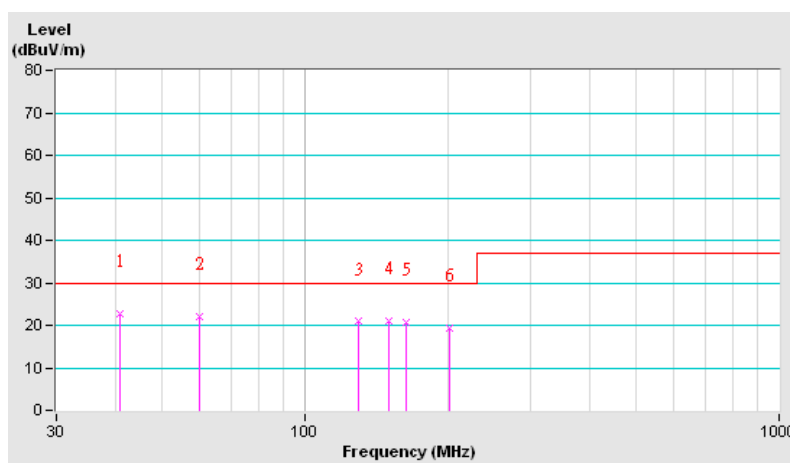
Same as item 4.1.6

## 4.2.7 TEST RESULTS (1)

<b>TEST MODE</b>	Mode 1	<b>FREQUENCY RANGE</b>	30-1000 MHz
<b>INPUT POWER</b>	120 Vac, 60 Hz	<b>DETECTOR FUNCTION &amp; RESOLUTION BANDWIDTH</b>	Quasi-Peak, 120 kHz
<b>ENVIRONMENTAL CONDITIONS</b>	28 deg. C, 67% RH, 998 hPa	<b>TESTED BY:</b> Mars Wang	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 10 M								
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	40.69	22.63 QP	30.00	-7.37	4.00 H	283	7.68	14.95
2	59.74	22.06 QP	30.00	-7.94	4.00 H	329	15.05	7.01
3	130.12	20.90 QP	30.00	-9.10	4.00 H	188	7.75	13.15
4	150.19	21.05 QP	30.00	-8.95	4.00 H	228	8.27	12.78
5	163.87	20.76 QP	30.00	-9.24	4.00 H	154	9.00	11.76
6	201.42	19.40 QP	30.00	-10.60	4.00 H	102	8.45	10.95

- 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.



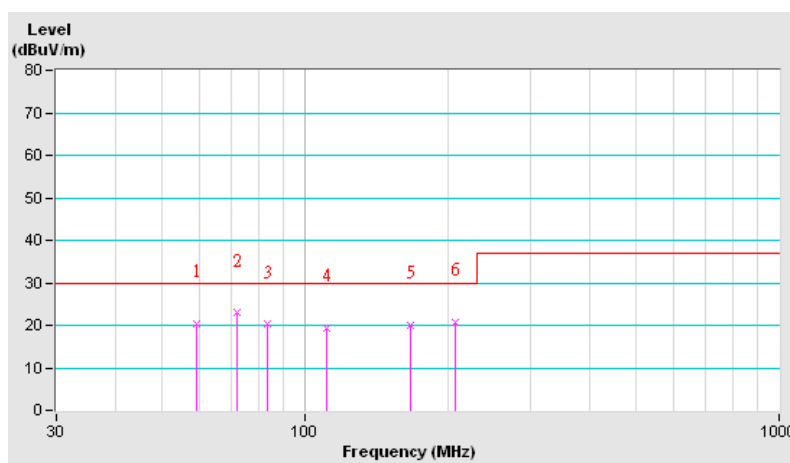


<b>TEST MODE</b>	Mode 1	<b>FREQUENCY RANGE</b>	30-1000 MHz
<b>INPUT POWER</b>	120 Vac, 60 Hz	<b>DETECTOR FUNCTION &amp; RESOLUTION BANDWIDTH</b>	Quasi-Peak, 120 kHz
<b>ENVIRONMENTAL CONDITIONS</b>	28 deg. C, 67% RH, 998 hPa	<b>TESTED BY:</b> Mars Wang	

#### ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 10 M

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	59.13	20.33 QP	30.00	-9.67	1.00 V	238	13.07	7.26
2	71.84	22.89 QP	30.00	-7.11	1.00 V	99	14.88	8.01
3	83.09	20.18 QP	30.00	-9.82	1.00 V	142	11.02	9.16
4	111.22	19.45 QP	30.00	-10.55	1.00 V	192	6.64	12.81
5	167.41	19.94 QP	30.00	-10.06	1.00 V	235	8.48	11.46
6	206.91	20.81 QP	30.00	-9.19	1.00 V	140	9.45	11.36

- 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.

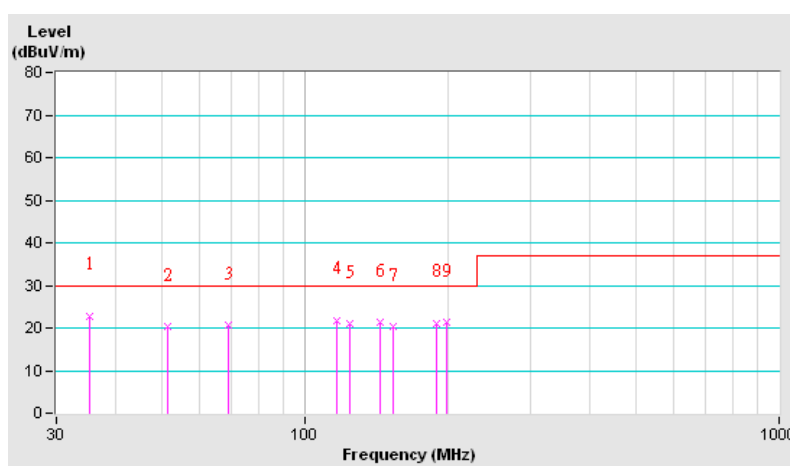


## 4.2.8 TEST RESULTS (2)

<b>TEST MODE</b>	Mode 2	<b>FREQUENCY RANGE</b>	30-1000 MHz
<b>INPUT POWER</b>	120 Vac, 60 Hz	<b>DETECTOR FUNCTION &amp; RESOLUTION BANDWIDTH</b>	Quasi-Peak, 120 kHz
<b>ENVIRONMENTAL CONDITIONS</b>	24 deg. C, 78% RH, 996 hPa	<b>TESTED BY:</b> Mars Wang	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 10 M								
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	35.23	22.82 QP	30.00	-7.18	4.00 H	213	5.10	17.72
2	51.34	20.22 QP	30.00	-9.78	4.00 H	151	9.85	10.37
3	69.15	20.54 QP	30.00	-9.46	4.00 H	102	12.82	7.72
4	117.02	21.72 QP	30.00	-8.28	4.00 H	275	8.18	13.54
5	124.43	20.92 QP	30.00	-9.08	4.00 H	173	7.34	13.58
6	144.52	21.19 QP	30.00	-8.81	4.00 H	208	8.61	12.58
7	153.01	20.21 QP	30.00	-9.79	4.00 H	139	7.63	12.58
8	189.02	20.94 QP	30.00	-9.06	4.00 H	335	10.33	10.61
9	198.43	21.25 QP	30.00	-8.75	4.00 H	84	10.44	10.81

- 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.

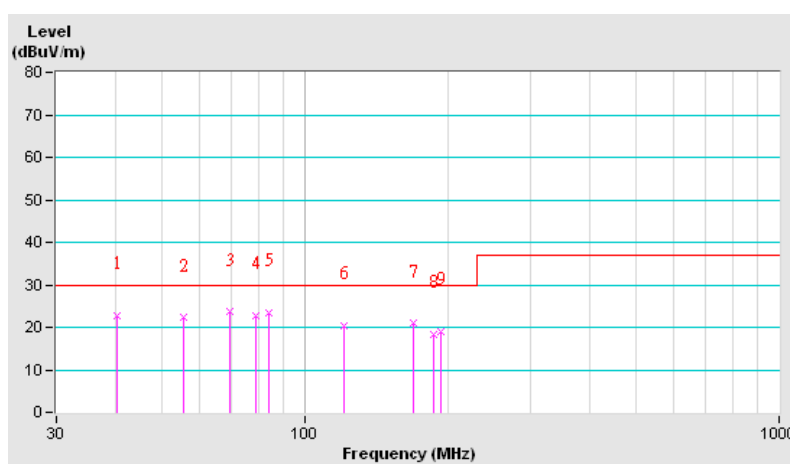


<b>TEST MODE</b>	Mode 2	<b>FREQUENCY RANGE</b>	30-1000 MHz
<b>INPUT POWER</b>	120 Vac, 60 Hz	<b>DETECTOR FUNCTION &amp; RESOLUTION BANDWIDTH</b>	Quasi-Peak, 120kHz
<b>ENVIRONMENTAL CONDITIONS</b>	24 deg. C, 78% RH, 996 hPa	<b>TESTED BY:</b> Mars Wang	

#### ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 10 M

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	40.02	22.77 QP	30.00	-7.23	1.00 V	121	7.42	15.35
2	55.54	22.23 QP	30.00	-7.77	1.00 V	155	13.54	8.69
<b>3</b>	<b>69.43</b>	<b>23.61 QP</b>	<b>30.00</b>	<b>-6.39</b>	<b>1.00 V</b>	<b>184</b>	<b>15.86</b>	<b>7.75</b>
4	78.72	22.77 QP	30.00	-7.23	1.00 V	218	13.98	8.79
5	84.17	23.44 QP	30.00	-6.56	1.00 V	262	14.20	9.24
6	120.48	20.27 QP	30.00	-9.73	1.00 V	309	6.40	13.87
7	169.05	20.93 QP	30.00	-9.07	1.00 V	268	9.61	11.32
8	186.36	18.25 QP	30.00	-11.75	1.00 V	228	7.70	10.55
9	193.07	19.05 QP	30.00	-10.95	1.00 V	193	8.36	10.69

- 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.



## 5 PHOTOGRAPHS OF THE TEST CONFIGURATION

### CONDUCTED EMISSION TEST



## RADIATED EMISSION TEST



## 6 INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025:

<b>USA</b>	FCC, UL
<b>Germany</b>	TUV Rheinland
<b>Japan</b>	VCCI
<b>Norway</b>	NEMKO
<b>Canada</b>	INDUSTRY CANADA, CSA
<b>R. O. C.</b>	TAF, BSMI, NCC
<b>Netherlands</b>	Telefication
<b>Singapore</b>	GOST-ASIA (MOU)
<b>Russia</b>	CERTIS (MOU)

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](http://www.adt.com.tw/index.5/phtml).

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

**Linko EMC/RF Lab:**

Tel: 886-2-26052180

Fax: 886-2-26051924

**Hsin Chu EMC/RF Lab:**

Tel: 886-3-5935343

Fax: 886-3-5935342

**Hwa Ya EMC/RF/Safety/Telecom Lab:**

Tel: 886-3-3183232

Fax: 886-3-3185050

**Email:** [service@adt.com.tw](mailto:service@adt.com.tw)

**Web Site:** [www.adt.com.tw](http://www.adt.com.tw)

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

## **7 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB**

No any modifications are made to the EUT by the lab during the test.