

# **FCC TEST REPORT**

for

**47 CFR FCC Rules and Regulations Part 15 Subpart B,  
Class B Digital Device**

**Equipment** : A housing for SCND502A1232

**Model No.** : SCND502A1232

**FCC ID** : WFZSCND502A1232

**Filing Type** : Certification

**Applicant** : **EU3C Company Limited**  
Unit7, 8/F., Austin Tower, 22-26 Austin Avenue, Tsim Sha  
Tsui, Kowloon, Hong Kong

- The test result refers exclusively to the test presented test model / sample.
- Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.
- **Certificate or Test Report must not be used by the applicant to claim the product in this test report endorsement by TAF.**

***SPORTON International Inc.***

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

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**History of this test report**

Original Report Issue Date: Feb. 18, 2011

☒ No additional attachment.

☐ Additional attachment were issued as following record:

Attachment No.	Issue Date	Description

# **CERTIFICATE OF COMPLIANCE**

for

**47 CFR FCC Rules and Regulations Part 15 Subpart B,  
Class B Digital Device**

Equipment : A housing for SCND502A1232

Model No. : SCND502A1232

FCC ID : WFZSCND502A1232

Applicant : EU3C Company Limited  
Unit 7, 8/F., Austin Tower, 22-26 Austin Avenue, Tsim Sha  
Tsui, Kowloon, Hong Kong

## **HEREBY CERTIFY THAT:**

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4 - 2003** and the energy emitted by this equipment was **passed FCC Part 15 Subpart B** in both radiated and conducted emission class B limits.

Testing was carried out on Dec. 09, 2010 at **SPORTON International Inc. LAB.**

  
Castries Huang  
Supervisor

**SPORTON International Inc.**

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

**SPORTON International Inc.**

TEL : 886-2-2696-2468  
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FCC ID : WFZSCND502A1232  
Page No. : 1/18  
Issued Date : Feb. 18, 2011

## **1. General Description of Equipment under Test**

### **1.1. Applicant**

EU3C Company Limited  
Unit7, 8/F., Austin Tower, 22-26 Austin Avenue,  
Tsim Sha Tsui, Kowloon, Hong Kong.

### **1.2. Manufacturer**

EU3C Company Limited  
Unit7, 8/F., Austin Tower, 22-26 Austin Avenue,  
Tsim Sha Tsui, Kowloon, Hong Kong

### **1.3. Basic Description of Equipment under Test**

Equipment : A housing for SCND502A1232  
Model No. : SCND502A1232  
Trade Name : FS-II-5M-2.4-TV out  
AV Cable : Non-Shielded, 3.0m  
USB Cable : Shielded, 1.21m, with core  
Power Supply Type : Switching  
AC Power Cord : Non-Shielded, 1.21m, 2pin

### **1.4. Feature of Equipment under Test**

Please refer to user manual.

## **2. Test Configuration of Equipment under Test**

### **2.1. Test Manner**

- a. The EUT has been associated with peripheral pursuant to ANSI C63.4-2003 and configuration operated in a manner which tended to maximize its emission characteristics in a typical application.
- b. The complete test system included TCL TV、DELL Notebook、DELL Mouse(USB)、Kingston SD Card and EUT for EMI test.
- c. The following modes were performed:
  - Mode 1. Scanner+Adaptor
  - Mode 2. USB Date Transfer
  - Mode 3. TV-OUT+AdpatorFor Conduction test, cause "mode 3" generated the worst test result, they were reported as final data.  
For Radiation test, cause "mode 3" generated the worst test result, they were reported as final data.
- d. Frequency range investigated: conduction 150 KHz to 30 MHz, radiation 30 MHz to 1000MHz.

### **2.2. Description of Test System**

#### **Support Unit 1. – Notebook (DELL)**

FCC ID	: DOC
Model No.	: DELL1458
Power Cord	: Non-Shielded 1.2m
Serial No.	: N/A
Remark	: This support device was tested to comply with FCC standards and authorized under a declaration of conformity.

#### **Support Unit 2. -- USB Mouse (DELL)**

FCC ID	: DOC
Model No.	: MO56UC
Serial No.	: N/A
Data Cable	: Non-Shielded, 1.5m
Remark	: This support device was tested to comply with FCC standards and authorized under a declaration of conformity.

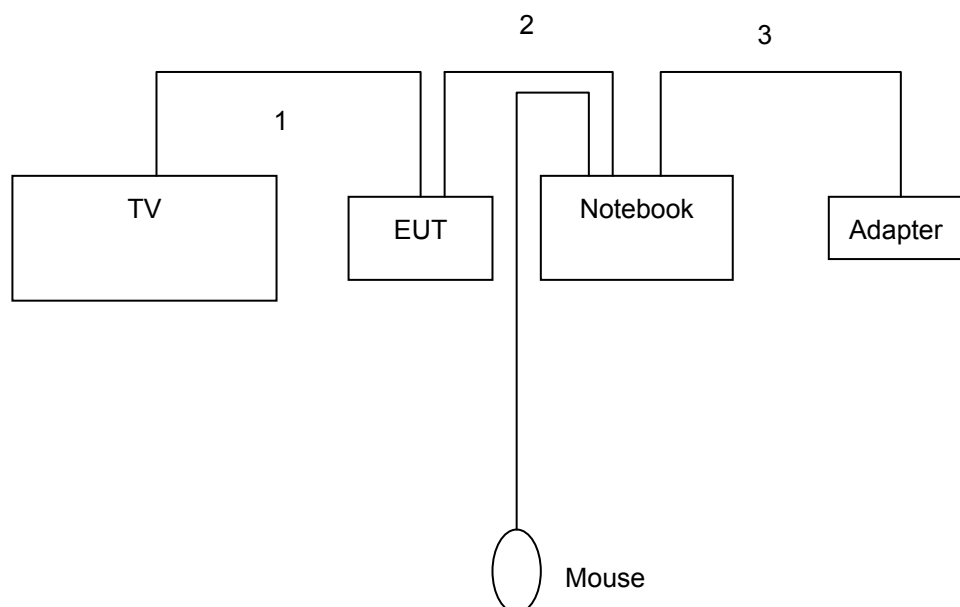
## Support Unit 3. -- TV (TCL)

FCC ID : DOC  
Model No. : 1475S  
Serial No. : N/A  
Data Cable : Non-Shielded, 1.8m  
Remark : This support device was tested to comply with FCC standards and authorized under a declaration of conformity.

## Support Unit 4. -- SD Card (Kingston)

FCC ID : DOC  
Model No. : 2GB  
Serial No. : N/A  
Data Cable : N/A  
Remark : This support device was tested to comply with FCC standards and authorized under a declaration of conformity.

### 2.3. Connection Diagram of Test System



1. The TV out cable is connected from TV to EUT.
2. The USB cable is connected from EUT to the support unit 1.
3. The I/O cable is connected from Adapter to the support unit 1.

Note: Above support unit on behalf of the meaning, please refer to section 2.2.



### **3. Test Software**

An executive program, "EMCTEST.EXE" under WIN XP, which generates a complete line of continuously An executive program, "EMITEST.EXE" under WIN XP, which generates a complete line of continuously repeating " H " pattern was used as the test software in the mode 3.

The program was executed as follows:

- a. Scanner carries out the scanning modem.
- b. Scanner connects TV and broadcasts the pictures.
- c. Scanner connects PC and charges, then carries out the scanning modem.

## **4. General Information of Test**

### **4.1. Test Facility**

This test was carried out by SPORTON International Inc.

Test Site Location : No.3-2 Ping-Xiang Rd,  
Kunshan Economic & Technical Development Zone, JiangSu, China.

TEL : 86-0512-57900158

FAX : 86-0512-57900958

Test Site No. : CO01-KS, 03CH01-KS

### **4.2. Test Voltage**

120V / 60Hz

### **4.3. Standard for Methods of Measurement**

ANSI C63.4-2003

### **4.4. Test in Compliance with**

FCC Rules, Regulations Part 15 Subpart B

### **4.5. Frequency Range Investigated**

a. Conduction: from 150 kHz to 30 MHz

b. Radiation: from 30 MHz to 1000 MHz

### **4.6. Test Distance**

The test distance of radiated emission from antenna to EUT is 10 m.

## **5. Test of Conducted Powerline**

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz and return leads of the EUT according to the methods defined in ANSI C63.4-2003 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 5.3. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

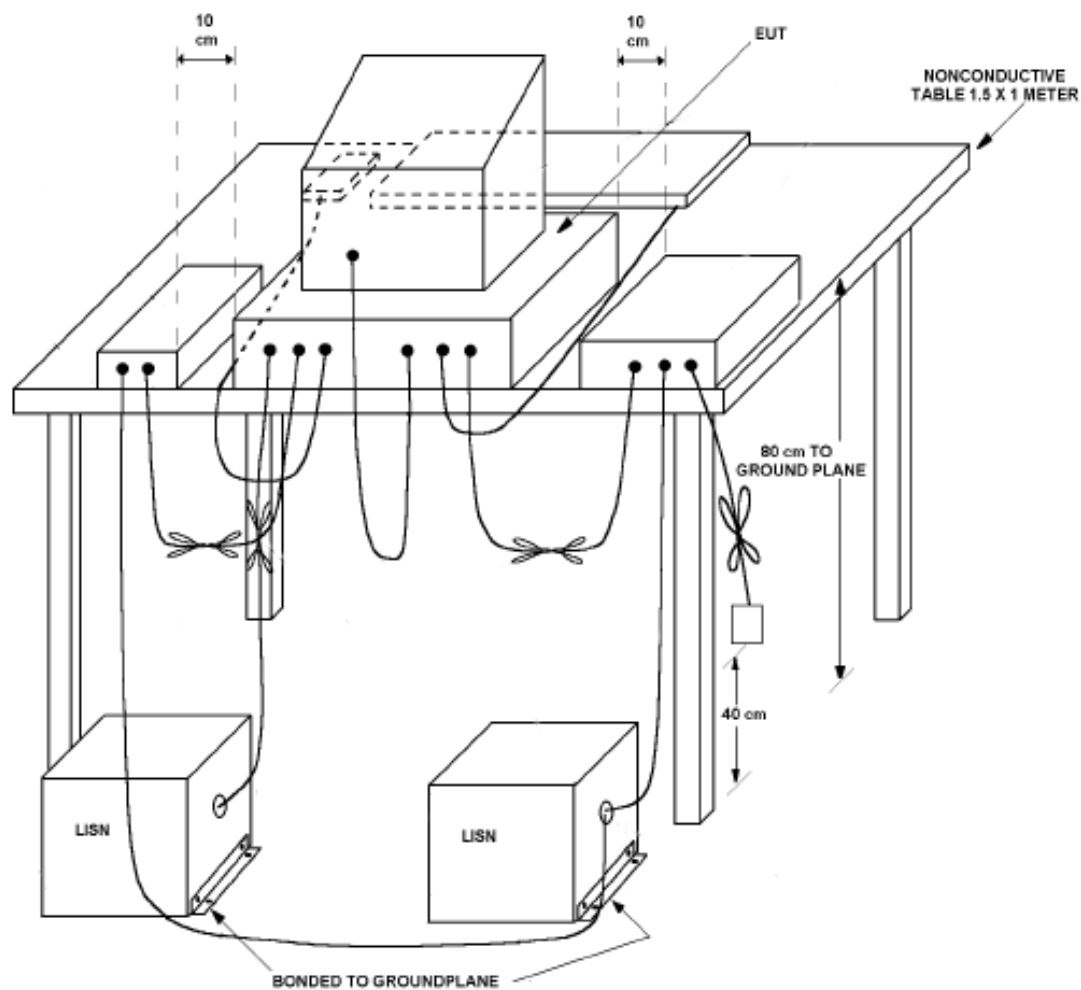
### **5.1. Major Measuring Instruments**

● Test Receiver	( R&S ESCI )
Attenuation 10	dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

### **5.2. Test Procedures**

- The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- Connect EUT to the power mains through a line impedance stabilization network (LISN).
- The LISN provides 50 ohm coupling impedance for the measuring instrument.
- The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- Both sides of AC line were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched.
- Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

### 5.3. Typical Test Setup Layout of Conducted Powerline

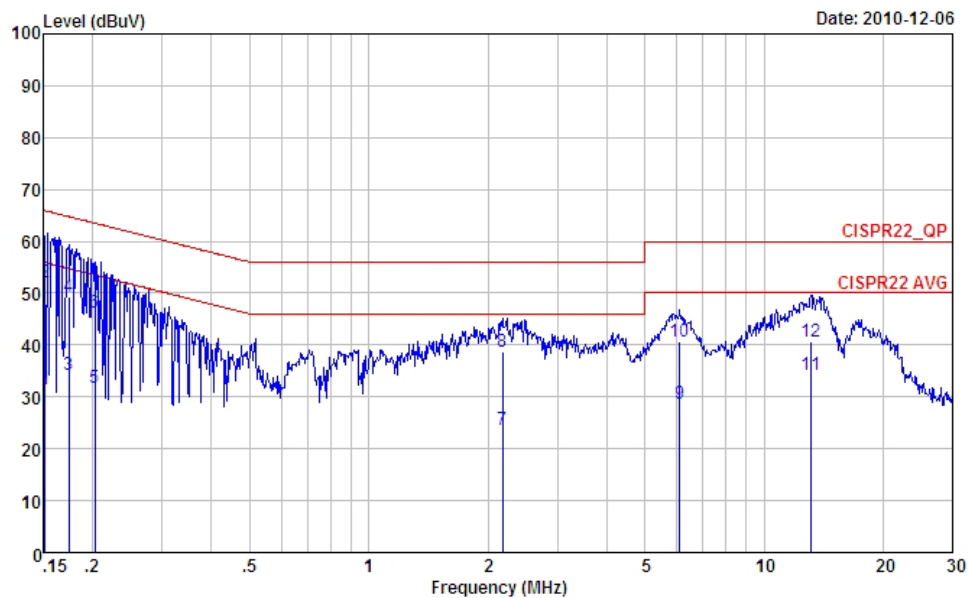


## 5.4. Test Result of AC Powerline Conducted Emission

### 5.4.1. Test Mode: Mode 3

- Frequency Range of Test: from 0.15 MHz to 30 MHz
- Temperature: 21-22 °C
- Relative Humidity: 41-42 %
- Corrected Reading (dBuV) = Probe Factor + Cable Loss + Read Level = Level
- All emissions not reported here are more than 10 dB below the prescribed limit.

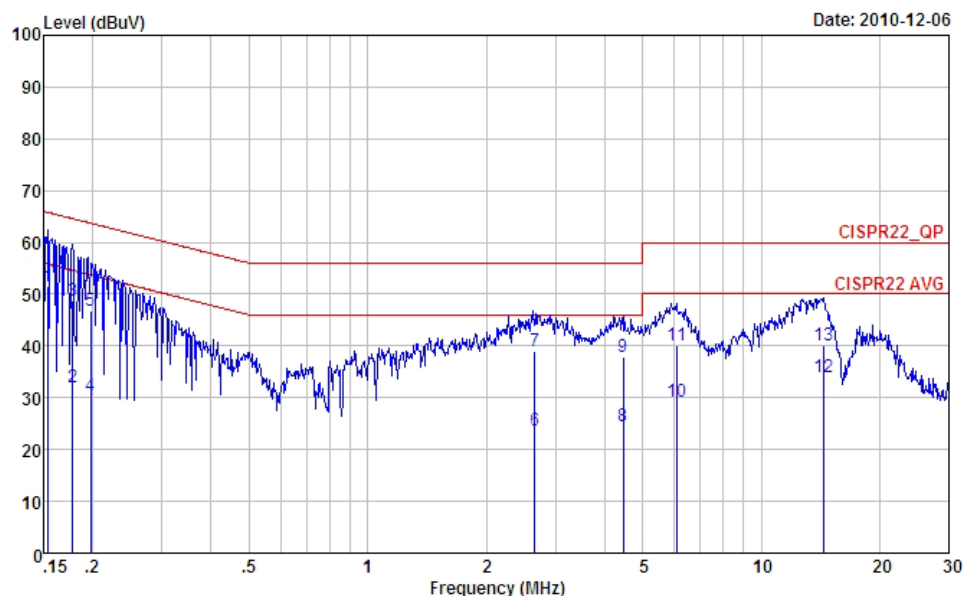
■ The test was passed at the minimum margin that marked by the frame in the following table.



Condition : CISPR22\_QP LISN\_L\_2000601 LINE

Project : 090702

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.15	31.48	-24.43	55.91	21.40	0.03	10.05	Average
2 q	0.15	52.18	-13.73	65.91	42.10	0.03	10.05	QP
3	0.17	34.38	-20.36	54.74	24.30	0.03	10.05	Average
4	0.17	49.38	-15.36	64.74	39.30	0.03	10.05	QP
5	0.20	31.68	-21.83	53.51	21.59	0.03	10.06	Average
6	0.20	46.28	-17.23	63.51	36.19	0.03	10.06	QP
7	2.18	23.80	-22.20	46.00	13.60	0.04	10.16	Average
8	2.18	38.60	-17.40	56.00	28.40	0.04	10.16	QP
9	6.12	28.69	-21.31	50.00	18.40	0.09	10.20	Average
10	6.12	40.59	-19.41	60.00	30.30	0.09	10.20	QP
11 a	13.13	34.33	-15.67	50.00	23.70	0.25	10.38	Average
12	13.13	40.63	-19.37	60.00	30.00	0.25	10.38	QP



Condition : CISPR22\_QP LISN\_N\_2000601 NEUTRAL  
 Preject : 090702

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1 q	0.15	51.47	-14.30	65.77	41.40	0.02	10.05	QP
2	0.18	31.97	-22.62	54.59	21.90	0.02	10.05	Average
3	0.18	48.77	-15.82	64.59	38.70	0.02	10.05	QP
4	0.20	30.47	-23.24	53.71	20.39	0.02	10.06	Average
5	0.20	46.67	-17.04	63.71	36.59	0.02	10.06	QP
6	2.66	23.72	-22.28	46.00	13.50	0.04	10.18	Average
7	2.66	39.12	-16.88	56.00	28.90	0.04	10.18	QP
8	4.46	24.56	-21.44	46.00	14.30	0.07	10.19	Average
9	4.46	37.96	-18.04	56.00	27.70	0.07	10.19	QP
10	6.10	29.30	-20.70	50.00	19.00	0.10	10.20	Average
11	6.10	40.10	-19.90	60.00	29.80	0.10	10.20	QP
12 a	14.38	34.05	-15.95	50.00	23.30	0.34	10.41	Average
13	14.38	40.05	-19.95	60.00	29.30	0.34	10.41	QP

Test Engineer :

*James Huang*

James Huang

## 6. Test of Radiated Emission

Radiated emissions from 30 MHz to 1,000 MHz were measured with a bandwidth of 120 kHz according to the methods defined in ANSI C63.4-2003. The EUT was placed on a nonmetallic stand, 0.8 meter above the ground plane, as shown in section 6.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions.

### 6.1. Major Measuring Instruments

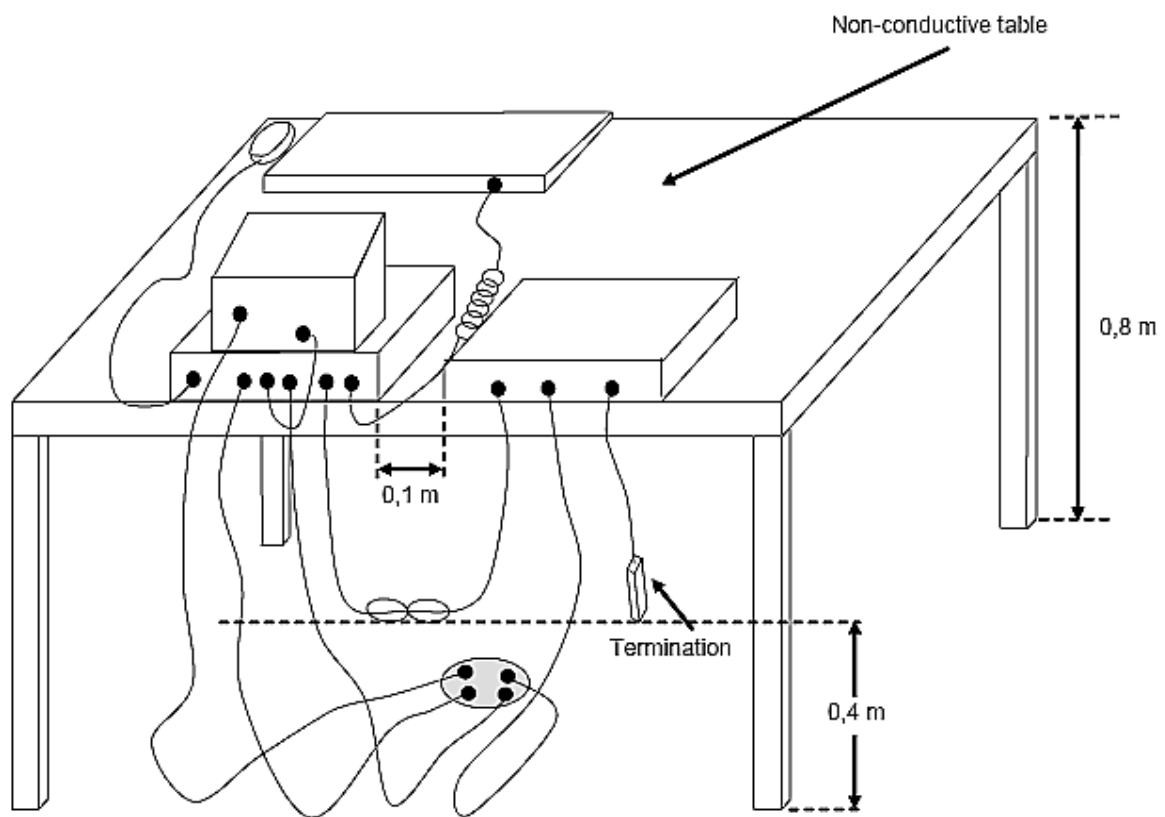
- Amplifier Wireless (FPA-6592G)
  - RF Gain 28 dB
  - Signal Input 30MHz~2GHz
  
- EMI Receiver ( R&S ESCI )
  - Attenuation 10 dB
  - Start Frequency 30 MHz
  - Stop Frequency 1000 MHz
  - Resolution Bandwidth 120 kHz
  - Signal Input 9 kHz - 3 GHz
  
- Bilog Antenna SCHAFFNER (CBL6112D)
  - Start Frequency 30 MHz
  - Stop Frequency 1 GHz
  - Signal Input 25MHz~2GHz

## **6.2. Test Procedures**

- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 10 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a half wave dipole and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.



### 6.3. Typical Test Setup Layout of Radiated Emission

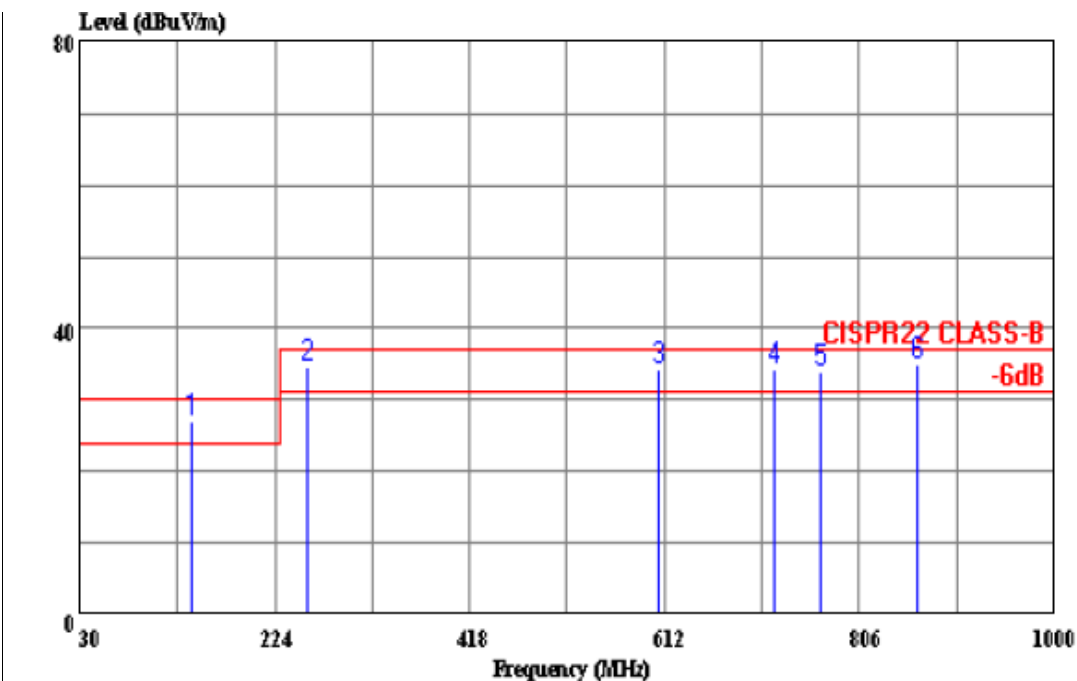


## 6.4. Test Result of Radiated Emission

### 6.4.1. Test Mode: Mode 3

- Frequency Range of Test: from 30 MHz to 1,000 MHz
- Temperature : 21-22 °C
- Relative Humidity : 41-42 %
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading : Antenna Factor + Cable Loss + Read Level – Preamp Factor = Level

■ The test was passed at the minimum margin that marked by the frame in the following test record

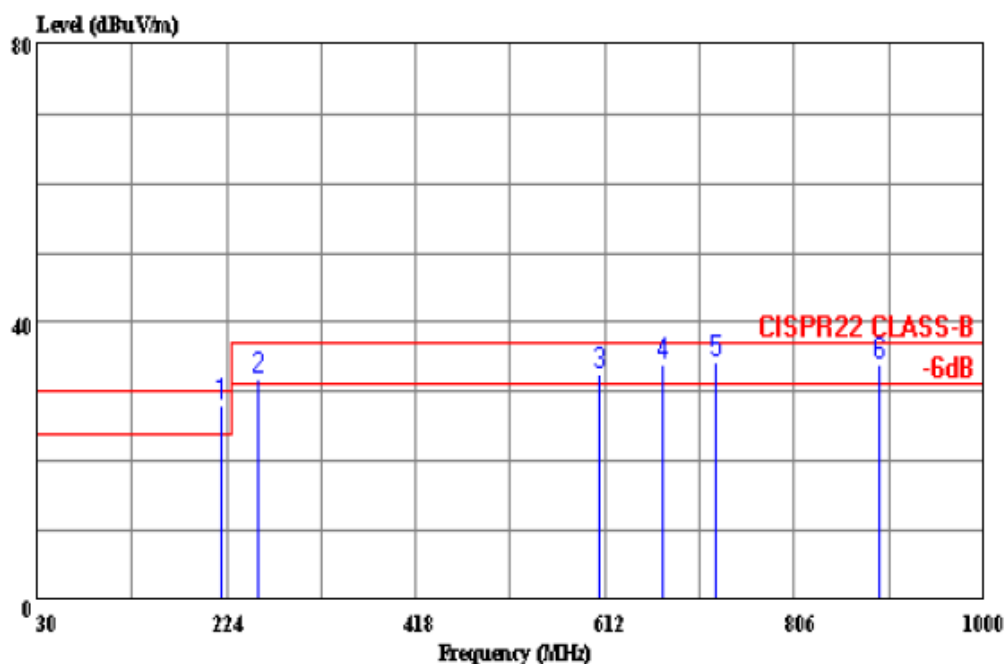


Trace:

Ref Trace:

Condition: CISPR22 CLASS-B 10M 100608 VERTICAL  
 eut : 5633  
 power:  
 mode :

	Freq	Level	Limit	Over	Read		
	MHz	dBuV/m	dBuV/m	Limit	Level	Factor	Remark
				dB	dBuV	dB	
1 !	141.550	27.08	30.00	-2.92	53.89	-26.81	QP
2 !	256.980	34.66	37.00	-2.34	54.79	-20.13	QP
3 !	605.210	34.41	37.00	-2.59	48.06	-13.65	QP
4 !	720.640	34.40	37.00	-2.60	44.99	-10.59	QP
5 !	768.170	33.79	37.00	-3.21	41.82	-8.03	QP
6 !	864.200	34.87	37.00	-2.13	45.22	-10.35	QP



Trace:

Ref Trace:

Condition: CISPR22 CLASS-B 10M 100608 HORIZONTAL

eut : 5633

power:

mode : \_

	Freq	Level	Limit	Over	Read		
	MHz	dBuV/m	dBuV/m	Limit	Level	Factor	Remark
				dB	dBuV	dB	
1 !	219.150	28.01	30.00	-1.99	53.71	-25.69	QP
2 !	256.980	32.00	37.00	-5.00	56.02	-24.02	QP
3 !	605.210	32.52	37.00	-4.48	40.94	-8.43	QP
4 !	670.200	33.91	37.00	-3.09	43.08	-9.17	QP
5 !	725.490	34.16	37.00	-2.84	45.62	-11.46	QP
6 !	892.330	34.05	37.00	-2.95	43.90	-9.85	QP

Test Engineer :

*James Huang*

James Huang

## 7. List of Measuring Equipment Used

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMI Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 16, 2010	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Jan. 18, 2010	Radiation (03CH01-KS)
Amplifier	Wireless	FPA-6592G	060004	30MHz~2GHz	Feb. 02, 2010	Radiation (03CH01-KS)
EMI Test Receicver	R&S	ESCI7	100768	9kHz~7GHz	Jun. 22,2010	Conduction (CO01-KS)
LISN	MessTec	AN3016	060103	9kHz~30MHz	Jan. 18, 2010	Conduction (CO01-KS)
LISN	MessTec	AN3016	060105	9kHz~30MHz	Jan. 18, 2010	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	N/A	Nov. 10, 2010	Conduction (CO01-KS)

※ Calibration Interval of instruments listed above is two year.

## 8. Uncertainty of Test Site

### Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Contribution	Uncertainty of $x_i$		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.10	Normal(k=2)	0.05
Cable loss	0.10	Normal(k=2)	0.05
AMN insertion loss	2.50	Rectangular	0.63
Receiver Spec	1.50	Rectangular	0.43
Site imperfection	1.39	Rectangular	0.80
Mismatch +0.34/	-0.35	U-shape	0.24
<b>combined standard uncertainty Uc(y)</b>	<b>1.13</b>		
<b>Measuring uncertainty for a level of confidence of 95% U=2Uc(y)</b>	<b>2.26</b>		

### Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz)

Contribution	Uncertainty of $x_i$		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.27	Normal(k=2)	0.14
Antenna factor calibration	0.92	Normal(k=2)	0.46
Cable loss calibration	0.16	Normal(k=2)	0.08
Pre Amplifier Gain calibration	0.17	Normal(k=2)	0.09
RCV/SPA specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site imperfection	1.99	Rectangular	1.15
Mismatch +0.50/	-0.54	U-shaped	0.37
<b>combined standard uncertainty Uc(y)</b>	<b>1.52</b>		
<b>Measuring uncertainty for a level of confidence of 95% U=2Uc(y)</b>	<b>3.04</b>		