CERTIFICATE

Issued Date: Dec. 23, 2011
Report No.: 11C356R-ITUSP01V02

This is to certify that the following designated product

Product : Serial ATA Flash Drive
Trade name : Apacer
Model Number : SAFD25M4
Company Name : Apacer Technology Inc.

This product, which has been issued the test report listed as above in QuieTek Laboratory, is based on a single evaluation of one sample and confirmed to comply with the requirements of the following EMC standard.

FCC CFR Title 47 Part 15 Subpart B: 2010, Class B, CISPR 22: 2008
ANSI C63.4: 2009

TEST LABORATORY

Vincent Lin / Manager

QuieTek No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451, Taiwan, R.O.C.
TEL:+886-2-8601-3788 FAX:+886-2-8601-3789 Email:service@quietek.com http://www.quietek.com

Test Report

Product Name ： Serial ATA Flash Drive

Model No. ： SAFD25M4

Applicant ： Apacer Technology Inc.

Address ： 3F, No.83, Kur Wong Rd., Aspire Park, Lung Tan Hsiang, Tao Yuan Hsien, Taiwan

Date of Receipt ： 2011/12/19

Issued Date ： 2011/12/23

Report No. ： 11C356R-ITUSP01V02

Report Version ： V1.0

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2. 1077(a)

The following equipment:

Product : Serial ATA Flash Drive

Trade name : Apacer

Model Number : SAFD25M4

It's herewith confirmed to comply with the requirements of FCC Part 15 Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

The result of electromagnetic emission has been evaluated by QuieTek EMC laboratory (NVLAP Lab. Code : 200533-0) and showed in the test report. (Report No. : 11C356R-ITUSP01V02)

It is understood that each unit marketed is identical to the device as tested, and any changes to the device that could adversely affect the emission characteristics will require retest.

The following importer / manufacturer is responsible for this declaration:

Company Name _____

Company Address _____

Telephone _____ Facsimile : _____

Person is responsible for marking this declaration:

_____ _____

Name (Full name) Position / Title

_____ _____

Date Legal Signature

Test Report Certification

Issued Date : 2011/12/23
Report No. : 11C356R-ITUSP01V02

Product Name	:	Serial ATA Flash Drive
Applicant	:	Apacer Technology Inc.
Address	:	3F, No.83, Kur Wong Rd., Aspire Park, Lung Tan Hsiang, Tao Yuan Hsien, Taiwan
Manufacturer	:	Apacer Technology Inc.
Model No.	:	SAFD25M4
EUT Rated Voltage	:	Power by PC
EUT Test Voltage	:	AC 120 V / 60 Hz
Trade Name	:	Apacer
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart B: 2010, Class B CISPR 22: 2008, ANSI C63.4: 2009
Test Result	:	Complied
Performed Location	:	Quietek Corporation (Linkou Laboratory) No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451, Taiwan, R.O.C. TEL:+866-2-8601-3788 / FAX:+886-2-8601-3789

Documented By : Rita Huang
(Senior Adm. Specialist / Rita Huang)

Reviewed By : Jojolee jung
(Engineer / Jojolee Jung)

Approved By :
(Manager / Vincent Lin)

Laboratory Information

We, **QuieTek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted (audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scopes:

Taiwan R.O.C.	**:**	**BSMI, NCC, TAF**
Germany	**:**	**TUV Rheinland**
Norway	**:**	**Nemko, DNV**
USA	**:**	**FCC, NVLAP**
Japan	**:**	**VCCI**

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site : http://www.quietek.com/tw/ctg/cts/accreditations.htm
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/
If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

HsinChu Testing Laboratory :

No.75-2, 3rd Lin, Wangye Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan, R.O.C.
TEL:+886-3-592-8858 / FAX:+886-3-592-8859 E-Mail : service@quietek.com

NVLAP Lab Code : 200347-0

Testing Laboratory 1313

LinKou Testing Laboratory :

No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451, Taiwan, R.O.C.
TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789 E-Mail : service@quietek.com

NVLAP Lab Code: 200533-0

Testing Laboratory 0914

Suzhou (China) Testing Laboratory :

No. 99 Hongye Rd., Suzhou Industrial Park Loufeng Hi-Tech Development Zone., Suzhou,China.
TEL : +86-512-6251-5088 / FAX : +86-512-6251-5098 E-Mail : service@quietek.com

NVLAP Lab Code : 200743-0

Testing Laboratory 1596

TABLE OF CONTENTS

1. General Information

1.1. EUT Description

Product Name	Serial ATA Flash Drive
Trade Name	Apacer
Model No.	SAFD25M4

1.2. Mode of Operation

QuieTek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Pre-Test Mode	
Mode 1: Normal Operation	
Final Test Mode	
Emission	Mode 1: Normal Operation

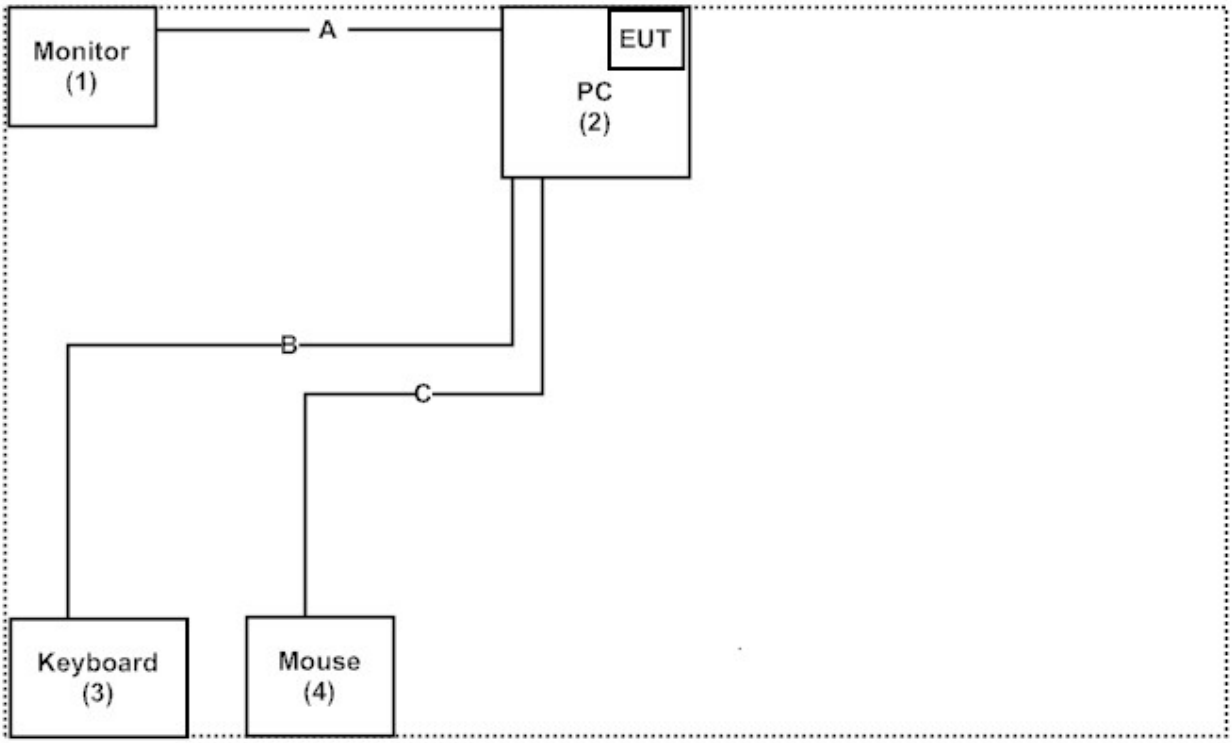
1.3. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Monitor	DELL	U2410	CN-0J257M-728-01I-04PL	Non-Shielded, 1.8m
2	PC	DELL	Vostro230	4R7Z62S	Non-Shielded, 1.8m
3	Keyboard	COMPAQ	KB-0133	B55940FBUOE04B	N/A
4	Mouse	Logitech	M-SBM96B	810-000440	N/A

1.4. Configuration of Tested System

Connection Diagram



Signal Cable Type		Signal cable Description
A	D-SUB Cable	Shielded, 1.8m, with two ferrite cores bonded.
B	Keyboard Cable	Shielded, 1.8m
C	Mouse Cable	Shielded, 1.8m

1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown on 1.4.
2	Turn on the power of all equipment.
3	All the features of the EUT operation normally.

2. Technical Test

2.1. Summary of Test Result

☒ No deviations from the test standards

☐ Deviations from the test standards as below description:

Emission			
Performed Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC CFR Title 47 Part 15 Subpart B: 2010 Class B, ANSI C63.4: 2009	Yes	No
Radiated Emission	FCC CFR Title 47 Part 15 Subpart B: 2010 Class B, ANSI C63.4: 2009	Yes	No

2.2. List of Test Equipment

Conducted Emission / SR8

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	R&S	ESCS 30	838251/001	2011/06/02
LISN	R&S	ESH3-Z5	836679/020	2011/02/10
LISN	R&S	ENV216	100097	2011/04/07
Pulse Limiter	R&S	ESH3-Z2	100324	2011/09/23

Radiated Emission / Site2

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Bilog Antenna	Schaffner Chase	CBL6112B	2921	2011/01/24
EMI Test Receiver	R&S	ESCS 30	100123	2011/06/13
Pre-Amplifier	QTK	N/A	N/A	2011/07/07
Spectrum Analyzer	Advantest	R3162	01700040	2011/11/22
Site2 NSA	QTK	N/A	N/A	2011/07/05

Radiated Emission / CB7

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	Agilent	E4440A	MY46185846	2011/12/12
Horn Antenna	Schwarzbeck	9120D	576	2011/11/14
Pre-Amplifier	QuieTek	AP-180C	CHM/071920	2011/07/12
CB7 VSWR	QTK	N/A	N/A	2011/08/25

2.3. Measurement Uncertainty

Conducted Emission

The measurement uncertainty is evaluated as ± 2.26 dB.

Radiated Emission

The measurement uncertainty is evaluated as ± 3.19 dB.

2.4. Test Environment

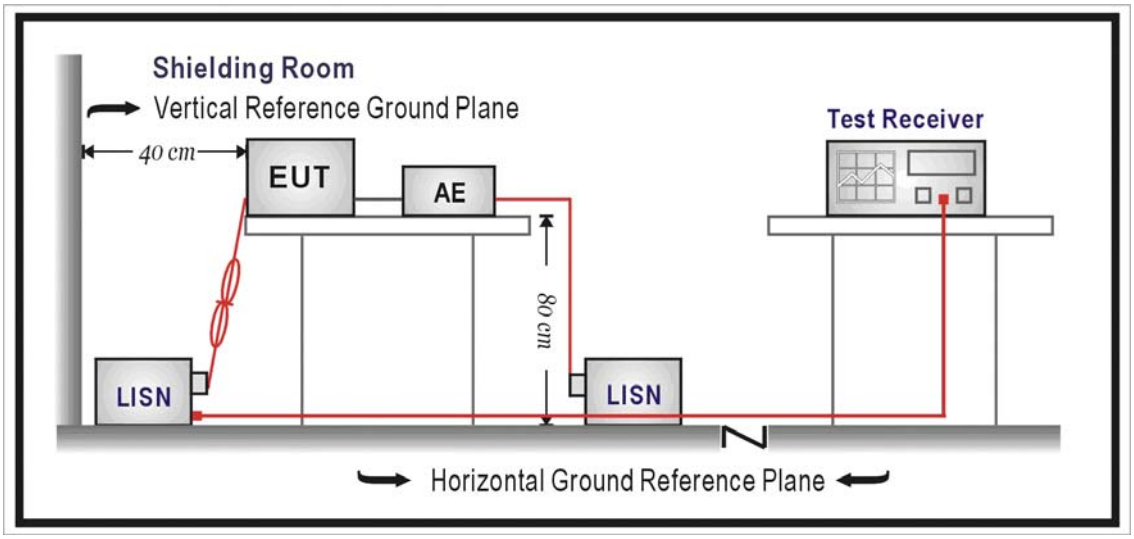
Performed Item	Items	Required	Actual
Conducted Emission	Temperature (°C)	15-35	24
	Humidity (%RH)	25-75	57
	Barometric pressure (mbar)	860-1060	950-1000
Radiated Emission	Temperature (°C)	15-35	16.9
	Humidity (%RH)	25-75	65
	Barometric pressure (mbar)	860-1060	950-1000

3. Conducted Emission

3.1. Test Specification

According to Standard : FCC Part 15 Subpart B, ANSI C63.4

3.2. Test Setup



3.3. Limit

Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 - 0.50	66 - 56	56 – 46
0.50-5.0	56	46
5.0 - 30	60	50

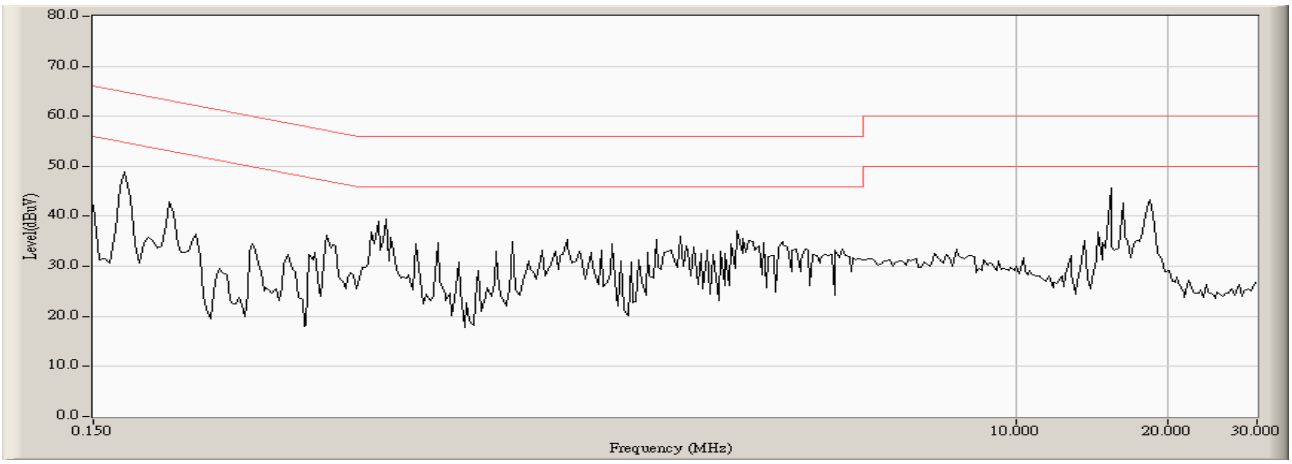
Remarks: In the above table, the tighter limit applies at the band edges.

3.4. Test Procedure

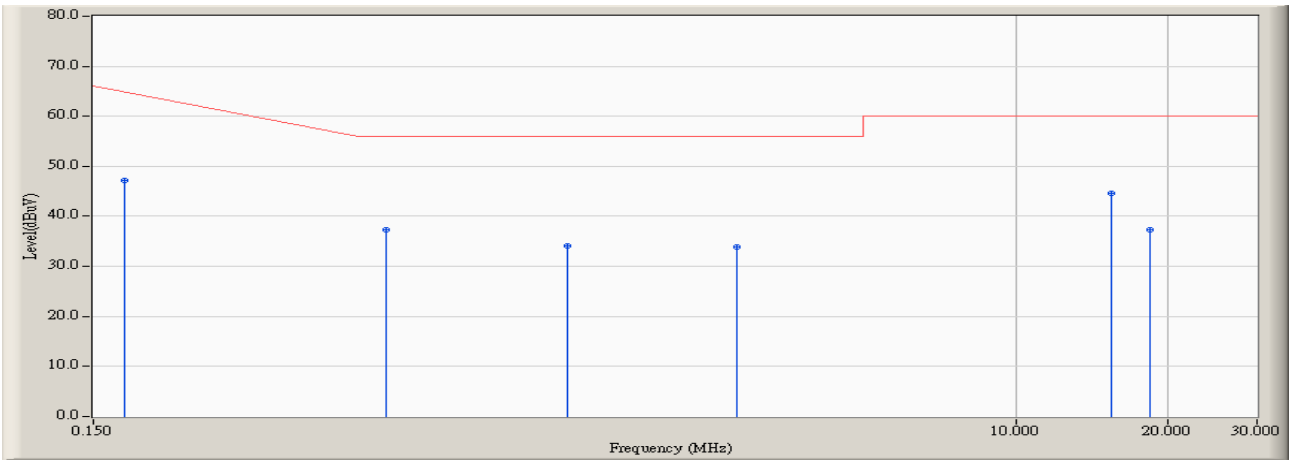
The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination.
(Please refers to the block diagram of the test setup and photographs.)
Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed on conducted measurement.
Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

3.5. Test Result

Site : SR8	**Time : 2011/12/20 - 14:43**
Limit : CISPR_B_00M_QP	**Margin : 10**
EUT : Serial ATA Flash Drive	**Probe : ENV216_L1 - Line1**
Power : AC 120V/60Hz	**Note : Mode 1**



Site : SR8	**Time : 2011/12/20 - 14:44**
Limit : CISPR_B_00M_QP	**Margin : 0**
EUT : Serial ATA Flash Drive	**Probe : ENV216_L1 - Line1**
Power : AC 120V/60Hz	**Note : Mode 1**

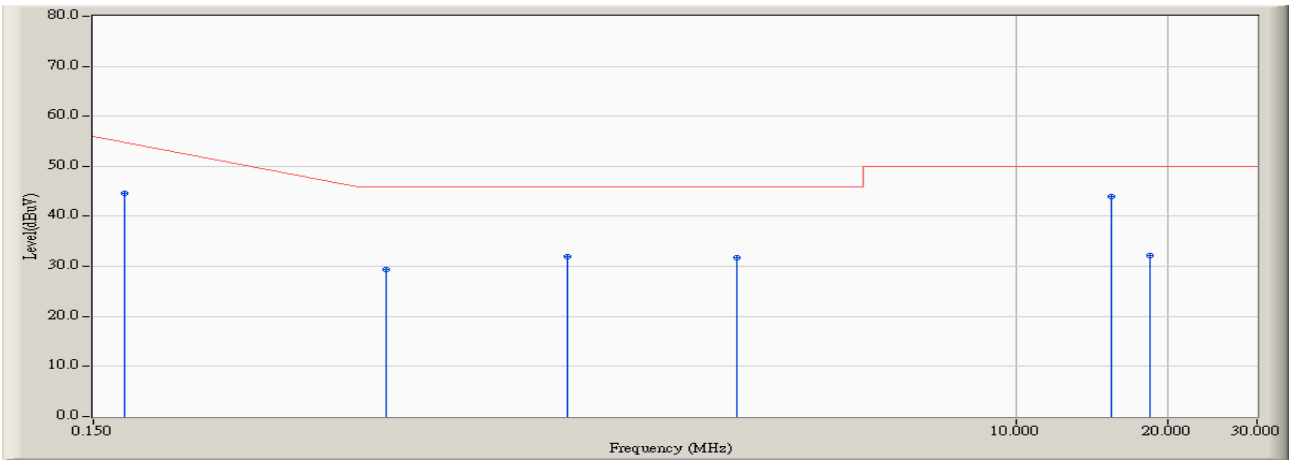


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.173	9.840	37.410	47.250	-18.093	65.343	QUASIPEAK
2		0.568	9.840	27.510	37.350	-18.650	56.000	QUASIPEAK
3		1.298	9.850	24.210	34.060	-21.940	56.000	QUASIPEAK
4		2.814	9.860	23.990	33.850	-22.150	56.000	QUASIPEAK
5	*	15.420	10.128	34.460	44.588	-15.412	60.000	QUASIPEAK
6		18.400	10.130	27.180	37.310	-22.690	60.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR8	**Time : 2011/12/20 - 14:44**
Limit : CISPR_B_00M_AV	**Margin : 0**
EUT : Serial ATA Flash Drive	**Probe : ENV216_L1 - Line1**
Power : AC 120V/60Hz	**Note : Mode 1**

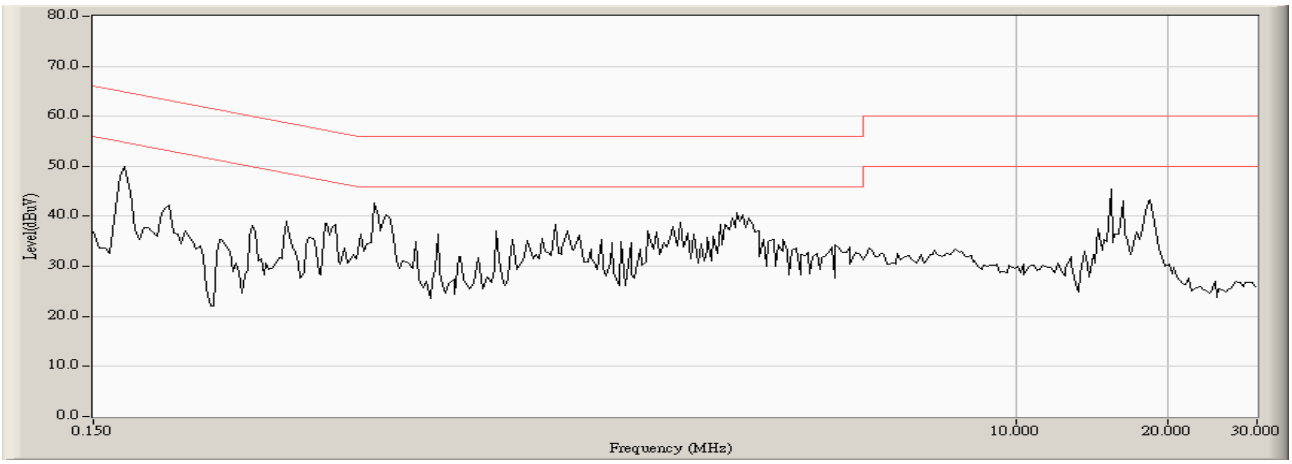


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.173	9.840	34.780	44.620	-10.723	55.343	AVERAGE
2		0.568	9.840	19.610	29.450	-16.550	46.000	AVERAGE
3		1.298	9.850	22.140	31.990	-14.010	46.000	AVERAGE
4		2.814	9.860	21.930	31.790	-14.210	46.000	AVERAGE
5	*	15.420	10.128	33.750	43.878	-6.122	50.000	AVERAGE
6		18.400	10.130	22.040	32.170	-17.830	50.000	AVERAGE

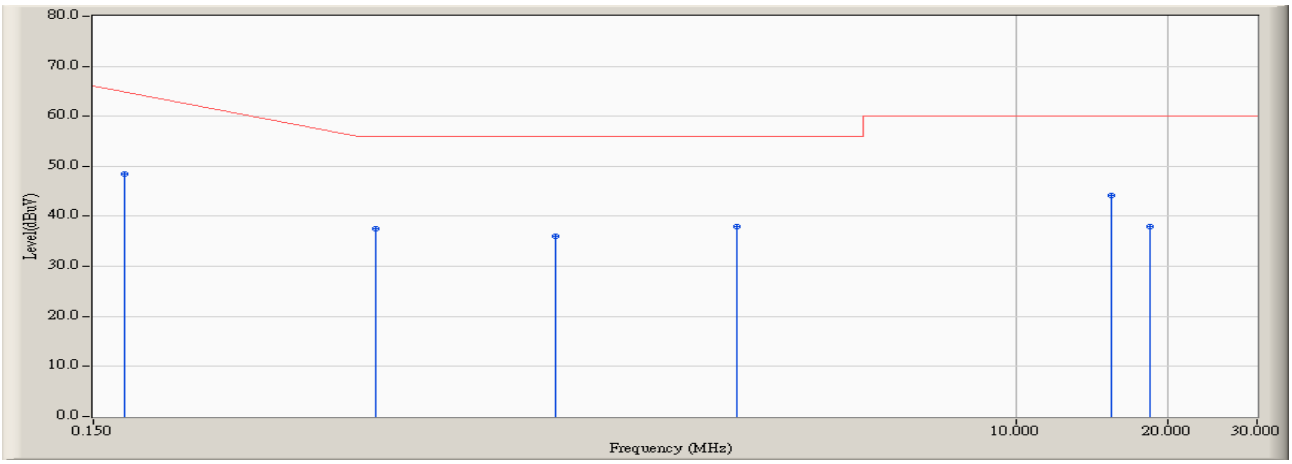
Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR8	**Time : 2011/12/20 - 14:45**
Limit : CISPR_B_00M_QP	**Margin : 10**
EUT : Serial ATA Flash Drive	**Probe : ENV216_N - Line2**
Power : AC 120V/60Hz	**Note : Mode 1**



Site : SR8	**Time : 2011/12/20 - 14:47**
Limit : CISPR_B_00M_QP	**Margin : 0**
EUT : Serial ATA Flash Drive	**Probe : ENV216_N - Line2**
Power : AC 120V/60Hz	**Note : Mode 1**

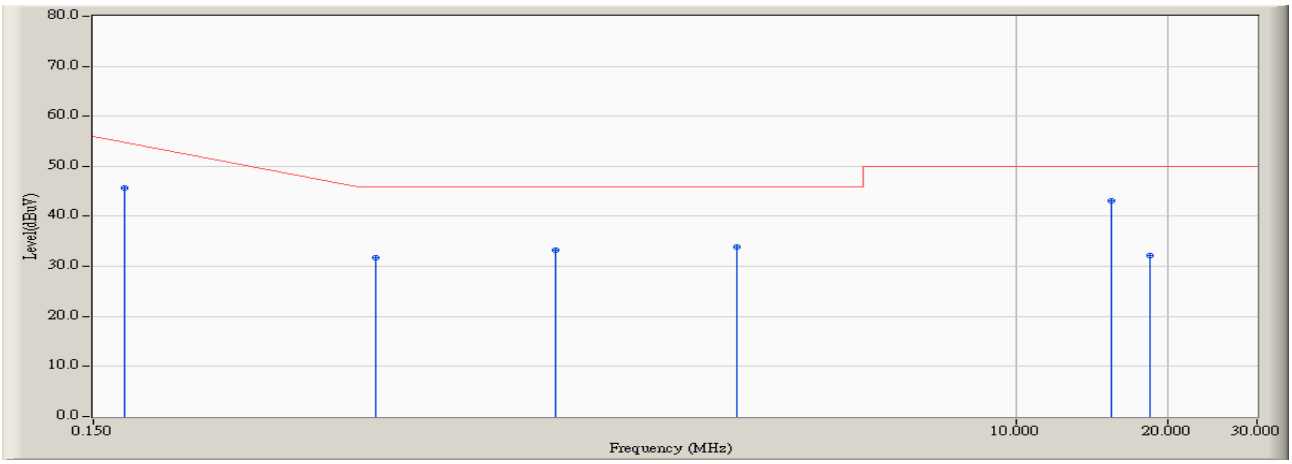


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.173	9.840	38.540	48.380	-16.963	65.343	QUASIPEAK
2		0.541	9.840	27.610	37.450	-18.550	56.000	QUASIPEAK
3		1.228	9.840	26.100	35.940	-20.060	56.000	QUASIPEAK
4		2.818	9.860	28.200	38.060	-17.940	56.000	QUASIPEAK
5	*	15.420	10.228	33.950	44.178	-15.822	60.000	QUASIPEAK
6		18.412	10.270	27.620	37.890	-22.110	60.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR8	**Time : 2011/12/20 - 14:47**
Limit : CISPR_B_00M_AV	**Margin : 0**
EUT : Serial ATA Flash Drive	**Probe : ENV216_N - Line2**
Power : AC 120V/60Hz	**Note : Mode 1**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.173	9.840	35.870	45.710	-9.633	55.343	AVERAGE
2		0.541	9.840	21.900	31.740	-14.260	46.000	AVERAGE
3		1.228	9.840	23.420	33.260	-12.740	46.000	AVERAGE
4		2.818	9.860	24.110	33.970	-12.030	46.000	AVERAGE
5	*	15.420	10.228	32.880	43.108	-6.892	50.000	AVERAGE
6		18.412	10.270	22.000	32.270	-17.730	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

3.6. Test Photograph

Test Mode : Mode 1: Normal Operation

Description : Front View of Conducted Test

Test Mode : Mode 1: Normal Operation

Description : Back View of Conducted Test

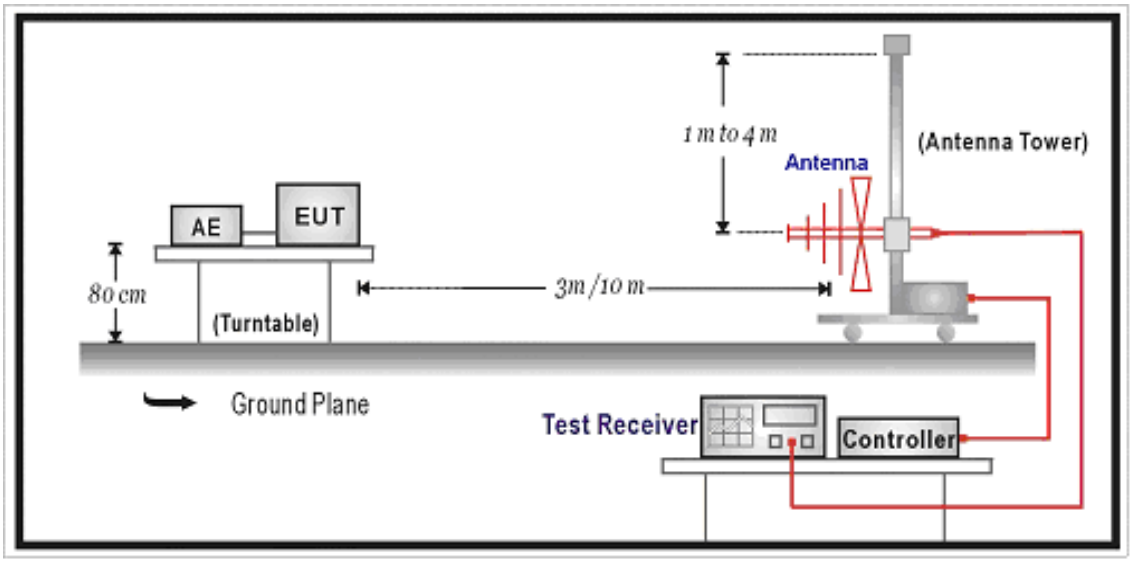
4. Radiated Emission

4.1. Test Specification

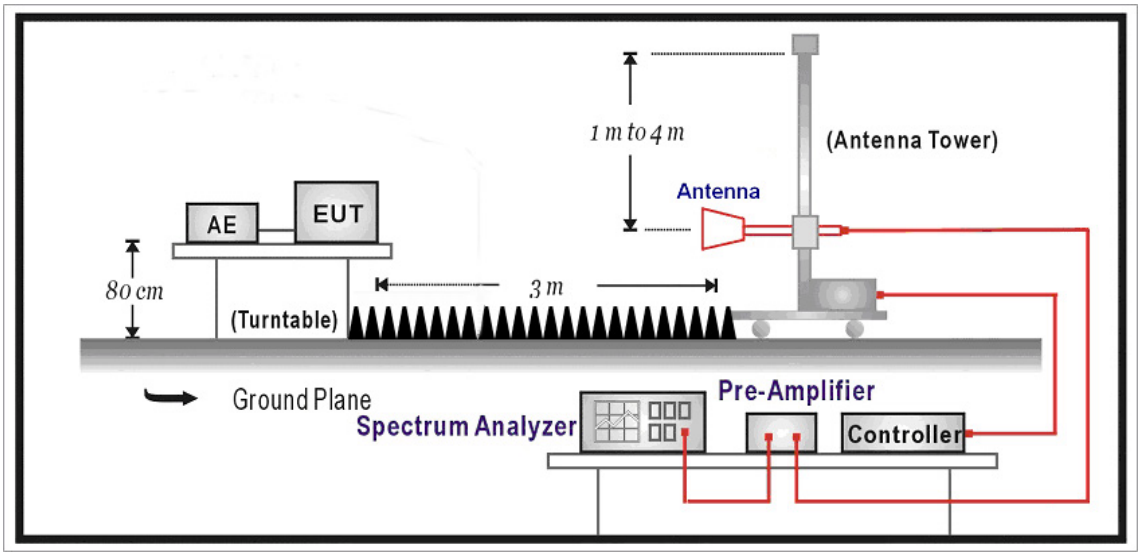
According to EMC Standard : FCC Part 15 Subpart B, ANSI C63.4

4.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

Under 1GHz test shall not exceed the following value:

Limits		
Frequency (MHz)	Distance (m)	dBuV/m
30 – 230	10	30
230 – 1000	10	37

Remark:

1. The tighter limit shall apply at the edge between two frequency bands.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

Above 1GHz test shall not exceed the following value:

FCC Part 15 Subpart B Paragraph 15.109 Limits (dBuV/m)		
Frequency (MHz)	Distance (m)	dBuV/m
30-88	3	40
88-216	3	43.5
216-960	3	46
Above 960	3	54

Remark:

1. The tighter limit shall apply at the edge between two frequency bands.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
3. RF Voltage (dBuV/m) = 20 log RF Voltage (uV/m)

4.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground.

The turn table can rotate 360 degrees to determine the position of the maximum emission level and the antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated on radiated measurement.

For an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the folowing table:

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

On any frequency or frequencies below or equal to 1000 MHz, the radiated limits shown are based on measuring equipment employing a quasi-peak detector function and above 1000 MHz, the radiated limits shown are based measuring equipment employing an average detector function.

When average radiated emission measurement are included emission measurement Above 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

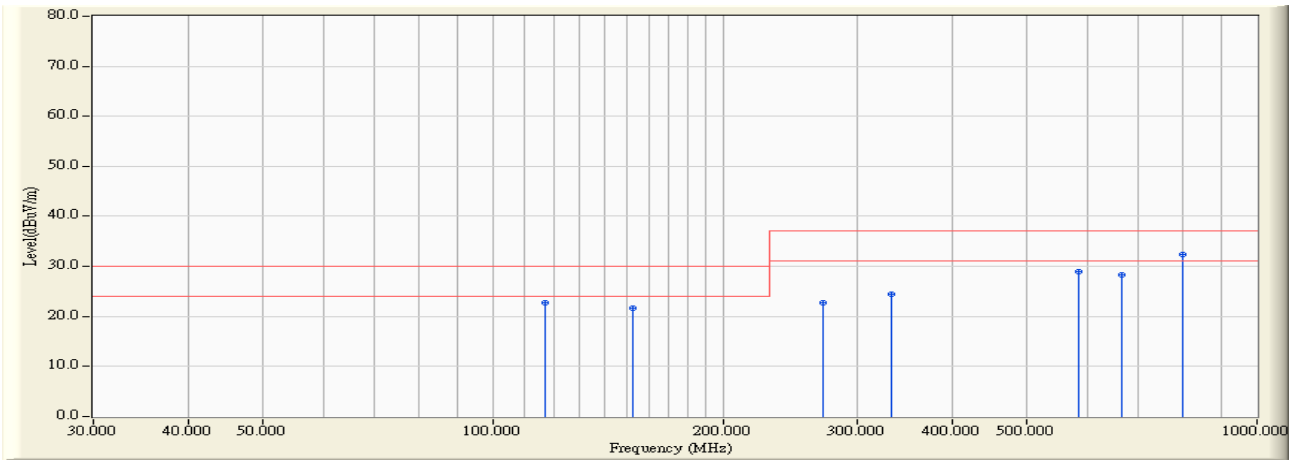
For class A, the measurement distance between the EUT and antenna is 10 meters for under 1GHz and above 1GHz.

For class B, the measurement distance between the EUT and antenna is 10 meters for under 1GHz and 3 meters for above 1GHz.

The bandwidth below 1GHz setting on the field strength meter (R&S Test Receiver ESCS 30) is 120 kHz and above 1GHz is 1MHz.

4.5. Test Result

Site : Site2	**Time : 2011/12/20 - 17:54**
Limit : CISPR_B_10M_QP	**Margin : 6**
EUT : Serial ATA Flash Drive	**Probe : Site2_CBL6112_10M_0726 - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode 1**

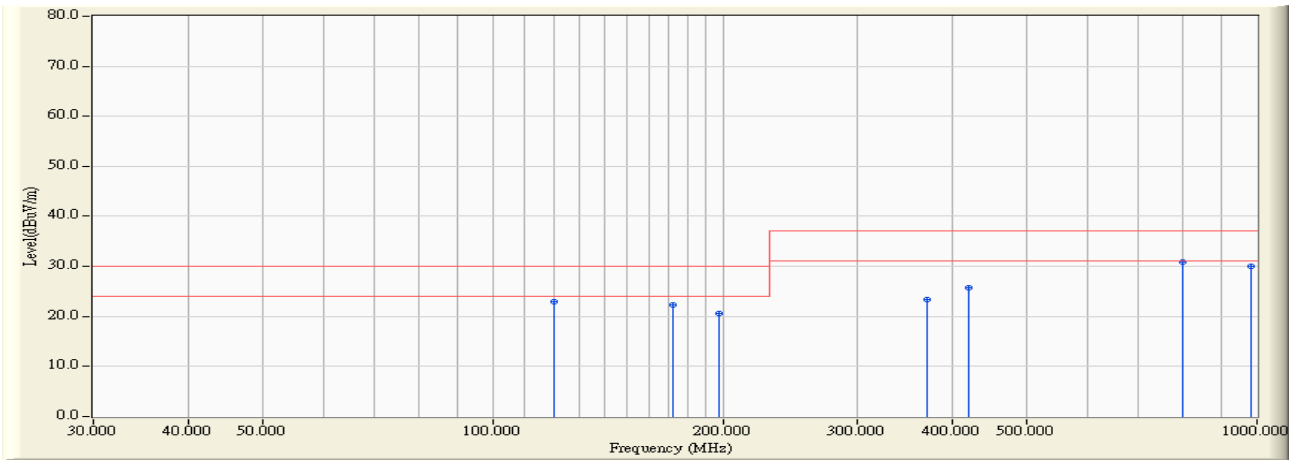


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		116.800	14.236	8.600	22.836	-7.164	30.000	QUASIPEAK
2		152.700	13.087	8.600	21.687	-8.313	30.000	QUASIPEAK
3		270.000	16.403	6.400	22.803	-14.197	37.000	QUASIPEAK
4		331.600	18.174	6.200	24.374	-12.626	37.000	QUASIPEAK
5		583.400	24.416	4.500	28.916	-8.084	37.000	QUASIPEAK
6		664.300	25.060	3.200	28.260	-8.740	37.000	QUASIPEAK
7	*	799.180	26.790	5.700	32.490	-4.510	37.000	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : Site2	**Time : 2011/12/20 - 17:45**
Limit : CISPR_B_10M_QP	**Margin : 6**
EUT : Serial ATA Flash Drive	**Probe : Site2_CBL6112_10M_0726 - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode 1**

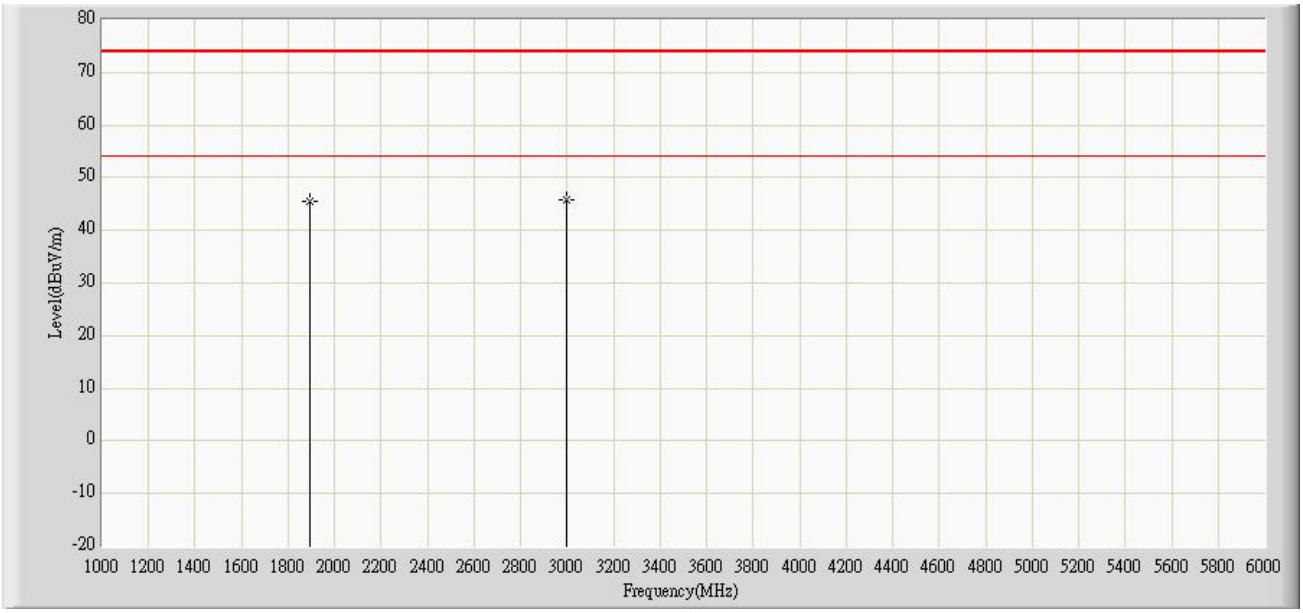


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		120.000	14.288	8.600	22.888	-7.112	30.000	QUASIPEAK
2		172.000	12.526	9.800	22.326	-7.674	30.000	QUASIPEAK
3		198.000	12.243	8.300	20.543	-9.457	30.000	QUASIPEAK
4		370.300	19.457	4.000	23.457	-13.543	37.000	QUASIPEAK
5		420.000	21.040	4.600	25.639	-11.361	37.000	QUASIPEAK
6	*	799.300	26.791	4.000	30.791	-6.209	37.000	QUASIPEAK
7		983.300	29.060	1.000	30.060	-6.940	37.000	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site: CB7	Time: 2011/12/21 - 15:42
Limit: FCC_B_(Above_1G)	Margin: 0
Probe: CB7_Horn_3117_0325	Polarity: Horizontal
EUT: Serial ATA Flash Drive	Power: BY PC
Note: Mode 1	

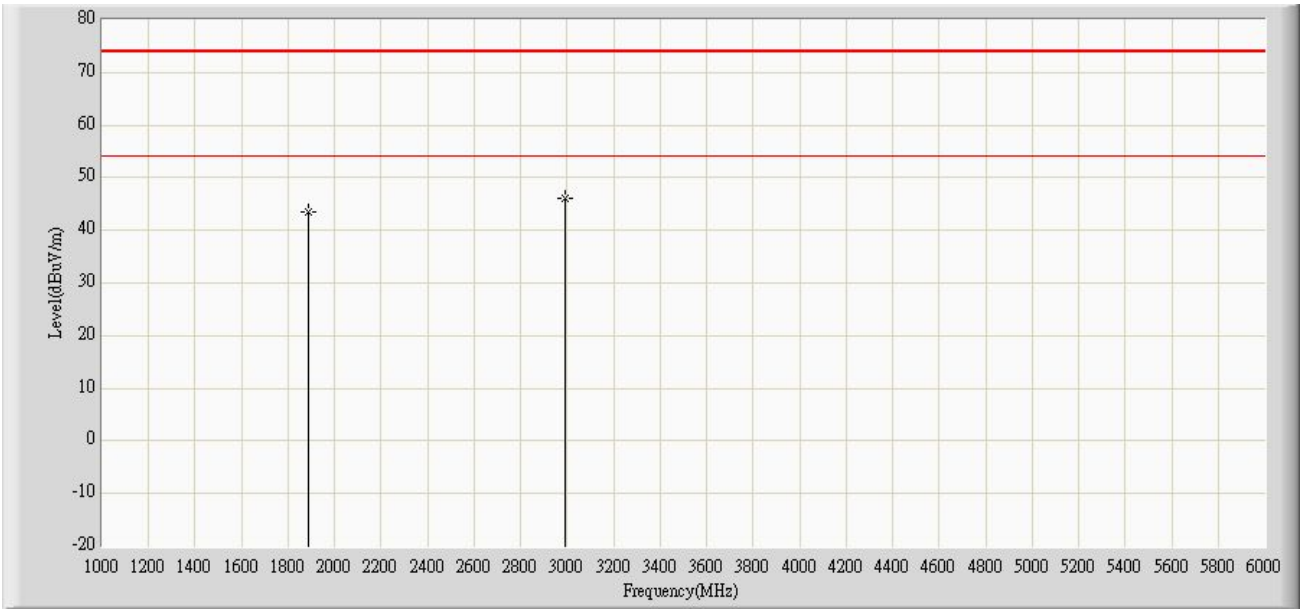


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			1894.000	45.412	46.957	-28.588	74.000	-1.545	PK
2		*	2996.000	45.817	44.584	-28.183	74.000	1.233	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

Site: CB7	Time: 2011/12/21 - 15:43
Limit: FCC_B_(Above_1G)	Margin: 0
Probe: CB7_Horn_3117_0325	Polarity: Vertical
EUT: Serial ATA Flash Drive	Power: BY PC
Note: Mode 1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			1888.000	43.385	45.000	-30.615	74.000	-1.615	PK
2		*	2993.000	46.080	45.230	-27.920	74.000	0.850	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

4.6. Test Photograph

Test Mode : Mode 1: Normal Operation

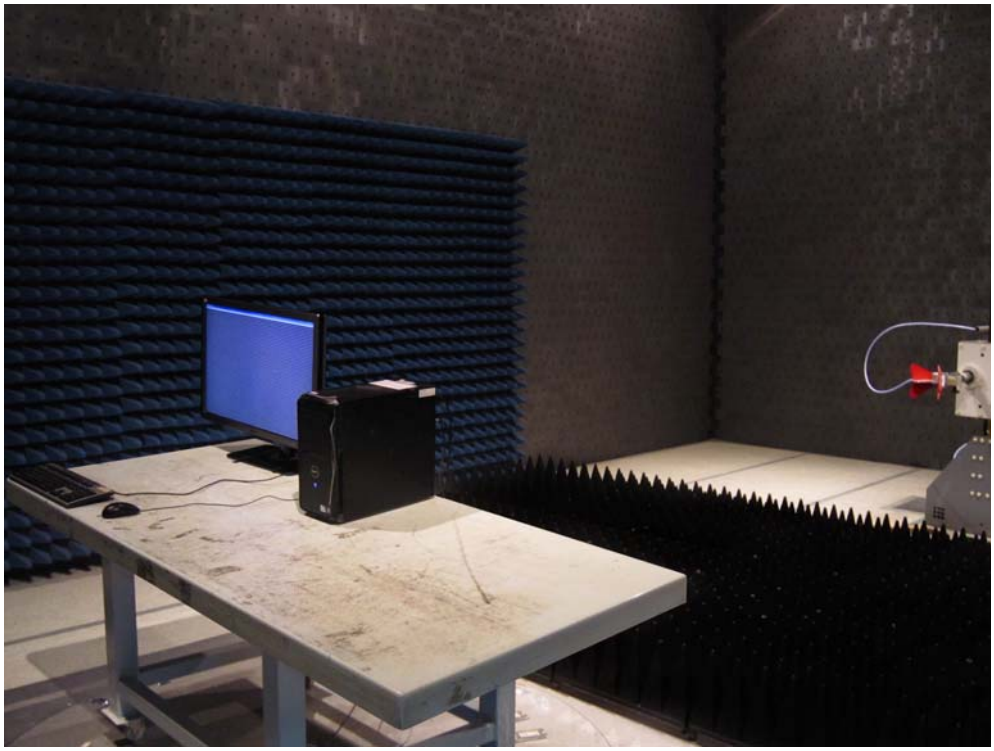
Description : Front View of Radiated Test

Test Mode : Mode 1: Normal Operation

Description : Back View of Radiated Test

Test Mode : Mode 1: Normal Operation

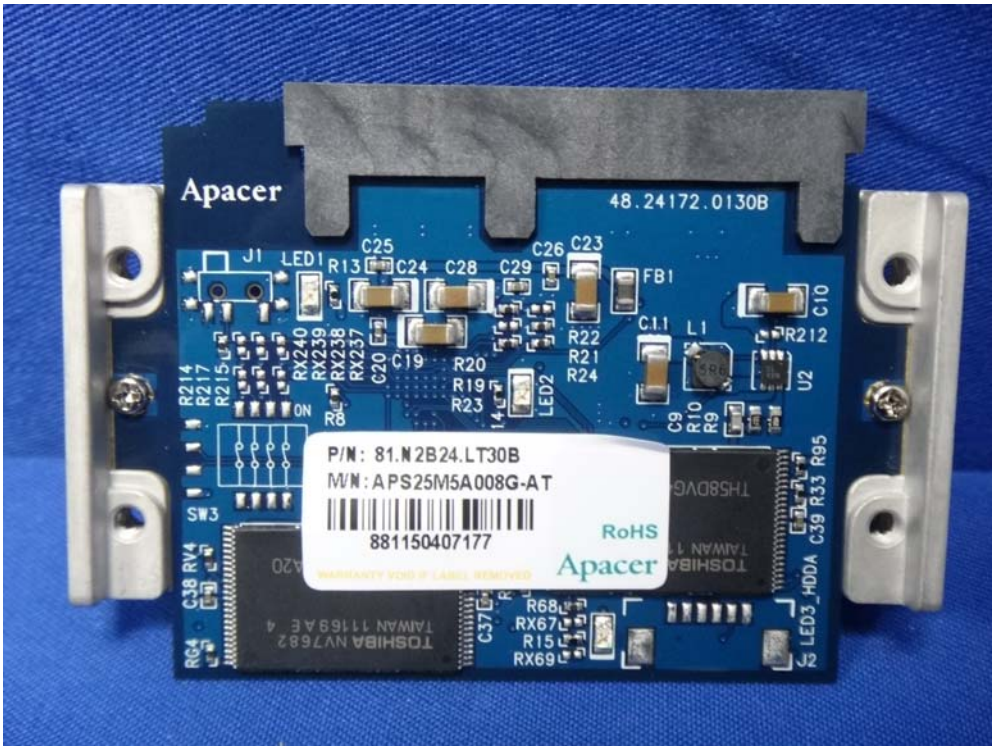
Description : Front View of High Frequency Radiated Test



5. Attachment

➢ EUT Photograph

(1) EUT Photo



(2) EUT Photo