

FCC PART 15 CLASS B
EMI MEASUREMENT AND TEST REPORT
For

AIKUN(CHINA) ELECTRONICS COMPANY LIMITED
A2 Building, Lianhe Industrial Park, Fengtang Road, Fuyong Town,
Shenzhen, China

FCC ID:RWCAT90H

March 15, 2013

| | |
|--|---|
| This Report Concerns: Original Report | Equipment Type: TABLET PC |
| Test Engineer: | Anna Lv <i>Anna Lv</i> |
| Test Engineer of performing the tests: | Hans Hu <i>Hans.Hu</i> |
| Report No.: | BST13011030YER-3 |
| Receive EUT Date/Test Date: | March 04, 2013/ March 04, 2013- March 15, 2013 |
| Reviewed By: | Mike Moo <i>Mike Moo</i> |
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1. GENERAL INFORMATION

1.1. Report information

1.1.1. This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that AIKUN(CHINA) ELECTRONICS COMPANY LIMITED approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that AIKUN(CHINA) ELECTRONICS COMPANY LIMITED in any way guarantees the later performance of the product/equipment.

1.1.2. The sample/s mentioned in this report is/are supplied by Applicant, AIKUN(CHINA) ELECTRONICS COMPANY LIMITED therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through AIKUN(CHINA) ELECTRONICS COMPANY LIMITED, unless the applicant has authorized AIKUN(CHINA) ELECTRONICS COMPANY LIMITED in writing to do so.

Test Facility -

The test site used to collect the radiated data is located on the address of Global United Technology Service Co., Ltd (FCC Registered Test Site Number: 600491) on 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China 518102

The Test Site is constructed and calibrated to meet the FCC requirements.

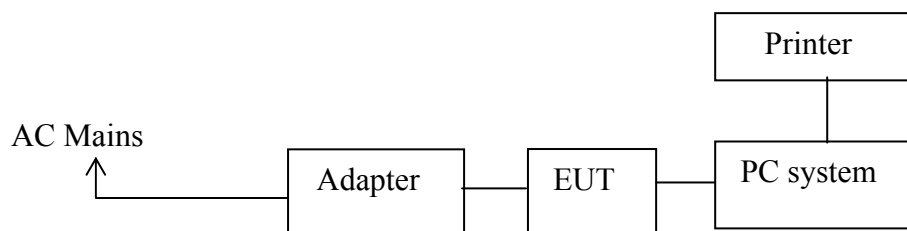
2. PRODUCT DESCRIPTION

2.1. EUT Description

Applicant : AIKUN(CHINA) ELECTRONICS COMPANY LIMITED
 Address : A2 Building, Lianhe Industrial Park, Fengtang Road,
 Fuyong Town, Shenzhen, China
 Manufacturer : AIKUN(CHINA) ELECTRONICS COMPANY LIMITED
 Address : A2 Building, Lianhe Industrial Park, Fengtang Road,
 Fuyong Town, Shenzhen, China
 EUT Description : TABLET PC
 Trade Name : AIKUN
 Model Number : AT90H, AT9, AT90, AT901HC, AT902HC, AT903, AT904,
 AT905, AT906, AT907, AT908, AT909, AT91H, AT92H,
 AT93HC, AT95G, AT96G, AT97, AT98HC, AT99H, AT910,
 AT920, AT930, AT950, AT960, AT970, AT971HC, AT972HC ,
 AT973HC, AT975HC, AT976HC
 Power Supply : DC 3.7V or DC 5V (Powered by 120V/60 Hz Adapter)

The series products, model name: AT90H, AT9, AT90, AT901HC, AT902HC, AT903, AT904, AT905, AT906, AT907, AT908, AT909, AT91H, AT92H, AT93HC, AT95G, AT96G, AT97, AT98HC, AT99H, AT910, AT920, AT930, AT950, AT960, AT970, AT971HC, AT972HC , AT973HC, AT975HC, AT976HC have the same circuit diagram, PCB layout, software, RF Module, Features and functionality. The differences are the model name, so, we select AT90H to test.

2.2. Block Diagram of EUT Configuration



2.3. Support Equipment List

| Name | Model No | S/N | Manufacturer | Used (Y/N) |
|---|-------------|-----|--------------|------------|
| Switching Adapter Input: 100-240Vac, 50/60Hz, Max 0.6A Output: 5Vdc, 2A | SAPA05010US | -- | -- | Y |
| PC system | AM1830 | N/A | Acer | Y |
| Printer | HP1020 | N/A | HP | Y |
| Router | PL-R860 | N/A | TP-LINK | Y |

2.4. Test Conditions

Temperature: 23~27°C

Relative Humidity: 50~63 %

2.5. TEST Results Summary**Table 1 Test Results Summary**

| Test Items | Test Results |
|-----------------------|--------------|
| Conducted disturbance | Pass |
| Radiated disturbance | Pass |

Remark: "N/A" means "Not applicable."

3. TEST EQUIPMENT USED

| EQUIPMENT/FACILITIES | MANUFACTURER | MODEL | SERIAL NO. | DATE OF CAL. | CAL. INTERVAL |
|-------------------------------|------------------------------------|-------------------------------------|------------|--------------|---------------|
| 3m Semi-Anechoic Chamber | ZhongYu Electron | 9.2(L)*6.2(W)* 6.4(H) | GTS250 | Mar. 30 2012 | 1 Year |
| Control Room | ZhongYu Electron | 6.2(L)*2.5(W)* 2.4(H) | GTS251 | N/A | N/A |
| EMI Test Receiver | Rohde & Schwarz | ESU26 | GTS203 | Jul. 04 2012 | 1 Year |
| BiConiLog Antenna | SCHWARZBECK MESS-ELEKTRO NIK | VULB9163 | GTS214 | Feb. 24 2013 | 1 Year |
| Double -ridged waveguide horn | SCHWARZBECK MESS-ELEKTRO NIK | 9120D-829 | GTS208 | June 30 2012 | 1 Year |
| Horn Antenna | ETS-LINDGREN | 3160 | GTS217 | Mar. 30 2012 | 1 Year |
| EMI Test Software | AUDIX | E3 | N/A | N/A | N/A |
| Cable | Resenberger | N/A | NO.1 | Apr. 6, 2012 | 1 Year |
| Cable | SCHWARZBECK | N/A | NO.2 | Apr. 6, 2012 | 1 Year |
| Cable | SCHWARZBECK | N/A | NO.3 | Apr. 6, 2012 | 1 Year |
| Amplifier(100kHz-3GHz) | HP | 8347A | GTS204 | Jul. 04 2012 | 1 Year |
| Amplifier(2GHz-20GHz) | HP | 8349B | GTS206 | Jul. 04 2012 | 1 Year |
| Amplifier (18-26GHz) | R&S | AFS33-1800 2 650-30-8P-4 4 | GTS218 | June 30 2012 | 1 Year |
| Band filter | Amindeon | 82346 | GTS219 | Mar. 31 2012 | 1 Year |
| Active Loop Antenna | Beijing Daze | ZN30900A | GTS215 | Mar. 31 2012 | 1 Year |
| Shielding Room | ZhongYu Electron | 7.0(L)x3.0(W)x3.0(H) | GTS264 | Sep. 08 2012 | 1 Year |
| EMI Test Receiver | R&S | ESCS30 | GTS223 | Jul. 04 2012 | 1 Year |
| 10dB Pulse Limita | R&S | N/A | GTS224 | Jul. 04 2012 | 1 Year |
| Coaxial Switch | ANRITSU CORP | MP59B | GTS225 | Jul. 04 2012 | 1 Year |
| LISN | SCHWARZBECK MESS-ELEKTRO NIK | NSLK 8127 | GTS226 | Jul. 04 2012 | 1 Year |
| Coaxial Cable | SCHWARZBECK | N/A | NO.4 | Apr. 6, 2012 | 1 Year |
| EMI Test Software | AUDIX | E3 | N/A | N/A | N/A |

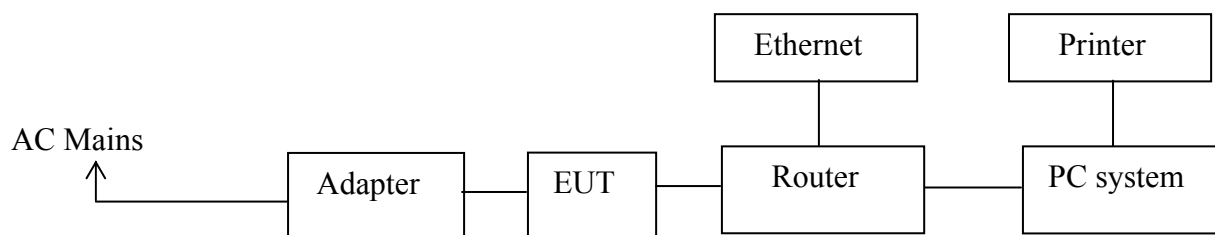
4. CONDUCTED EMISSION TEST

4.1. Measurement Uncertainty

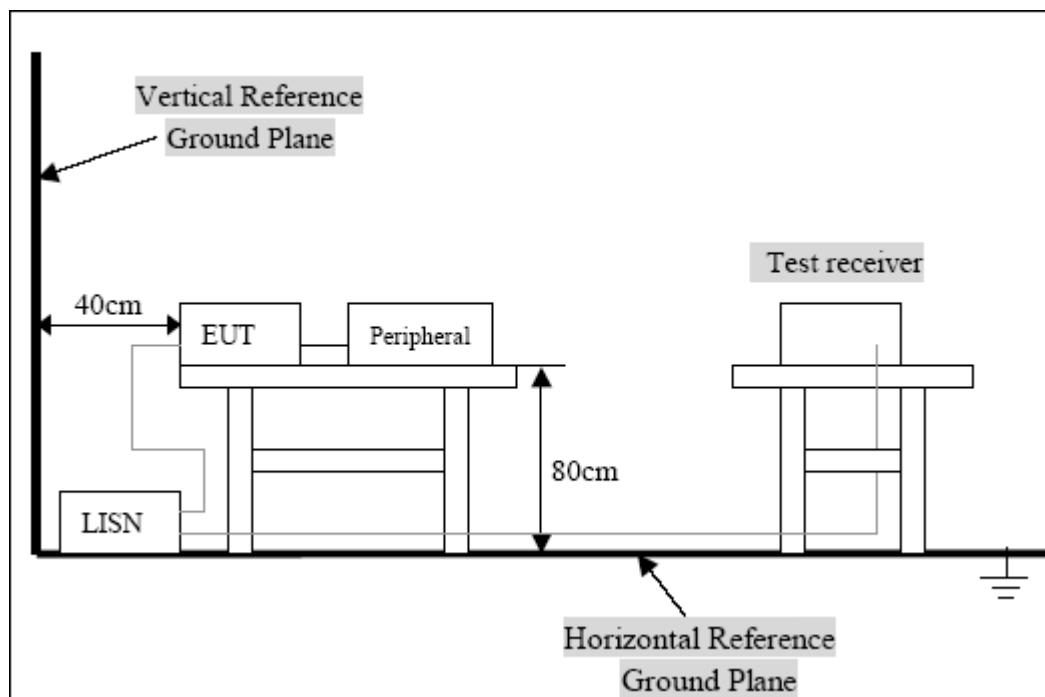
The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is + 2.88 dB.

4.2. Block Diagram of Test Setup

4.2.1. Block Diagram of connection between the EUT and the simulators



4.2.2. Test Setup Diagram



4.3. Test Standard

FCC Part 15 CLASS B

ANSI C63.4 2003

4.4. Conducted Emission Limit(Class B)

| Frequency MHz | Limits dB(μ V) | |
|------------------|---------------------|---------------|
| | Quasi-peak Level | Average Level |
| 0.15 ~ 0.50 | 66 ~ 56* | 56 ~ 46* |
| 0.50 ~ 5.00 | 56 | 46 |
| 5.00 ~ 30.00 | 60 | 50 |

Notes: 1. *Decreasing linearly with logarithm of frequency.

4.5. EUT Configuration on Test

The following equipments are installed on conducted emission test to meet FCC Part 15 requirement and operating in a manner, which tends to maximize its emission characteristics in a normal application.

4.6. Operating Condition of EUT

- 4.6.1. Setup the EUT and simulators as shown in Section 4.2.
- 4.6.2. Turn on the power of all equipments.
- 4.6.3. Let the EUT work in test mode (Connect to a router and the router attached to PC) and test it.

4.7. Test Procedure

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI test receiver is used to test the emissions form both sides of AC line. The bandwidth of EMI test receiver is set at 9kHz.

4.8. Test Result

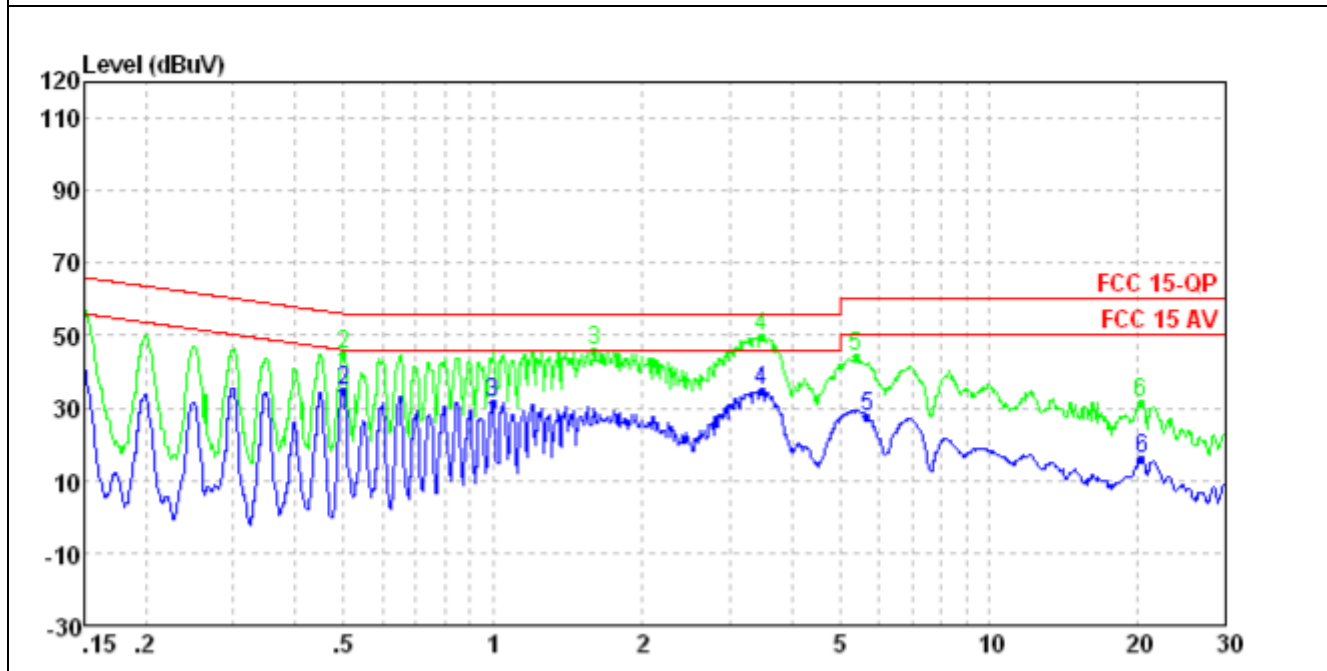
Pass

L Line

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV) | Limits (dBμV) | Margin (dB) | Detector Type |
|--------------------|-------------------------|----------------|--------------------------|------------------|----------------|---------------|
| 0.15 | 29.04 | 10.43 | 39.47 | 56.00 | -16.53 | AVG |
| 0.50 | 24.42 | 10.42 | 34.84 | 46.01 | -11.17 | AVG |
| 1.00 | 21.19 | 10.40 | 31.59 | 46.00 | -14.41 | AVG |
| 3.49 | 24.22 | 10.37 | 34.59 | 46.00 | -11.41 | AVG |
| 5.68 | 17.29 | 10.38 | 27.67 | 50.00 | -22.33 | AVG |
| 20.38 | 5.66 | 10.29 | 15.95 | 50.00 | -34.05 | AVG |
| 0.15 | 46.07 | 10.43 | 56.50 | 66.00 | -9.50 | QP |
| 0.50 | 34.29 | 10.42 | 44.71 | 56.01 | -11.30 | QP |
| 1.60 | 35.28 | 10.40 | 45.68 | 56.00 | -10.32 | QP |
| 3.49 | 39.24 | 10.37 | 49.61 | 60.00 | -6.39 | QP |
| 5.39 | 34.01 | 10.38 | 44.39 | 60.00 | -15.61 | QP |
| 20.27 | 21.37 | 10.29 | 31.66 | 60.00 | -28.34 | QP |

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

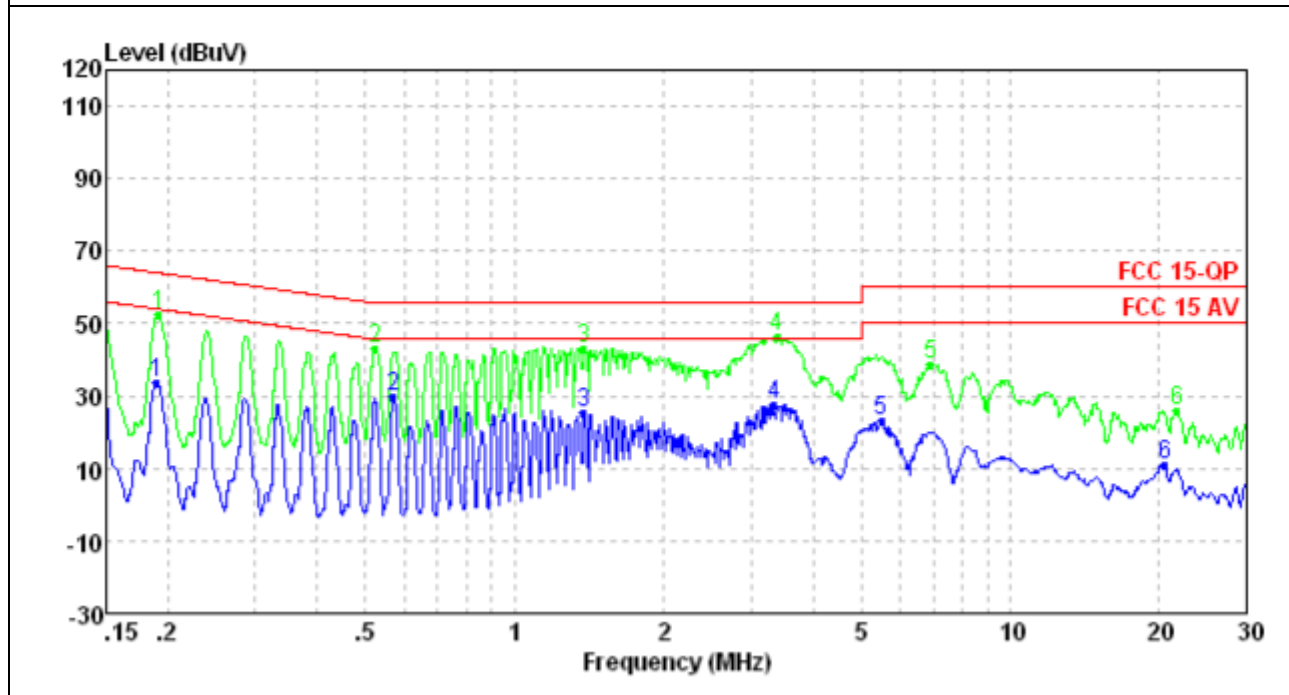


N Line

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|--------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV) | (dBμV) | (dB) | |
| 0.19 | 23.17 | 10.43 | 33.60 | 54.06 | -20.46 | AVG |
| 0.57 | 19.25 | 10.42 | 29.67 | 46.00 | -16.33 | AVG |
| 1.38 | 14.71 | 10.40 | 25.11 | 46.00 | -20.89 | AVG |
| 3.35 | 17.22 | 10.37 | 27.59 | 46.00 | -18.41 | AVG |
| 5.51 | 12.63 | 10.38 | 23.01 | 50.00 | -26.99 | AVG |
| 20.49 | 0.7 | 10.29 | 10.99 | 50.00 | -39.01 | AVG |
| 0.19 | 42.04 | 10.43 | 52.47 | 63.98 | -11.51 | QP |
| 0.52 | 32.73 | 10.42 | 43.15 | 56.00 | -12.85 | QP |
| 1.38 | 32.79 | 10.40 | 43.19 | 56.00 | -12.81 | QP |
| 3.38 | 36.24 | 10.37 | 46.61 | 56.00 | -9.39 | QP |
| 6.91 | 28.3 | 10.38 | 38.68 | 60.00 | -21.32 | QP |
| 21.71 | 15.77 | 10.29 | 26.06 | 60.00 | -33.94 | QP |

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



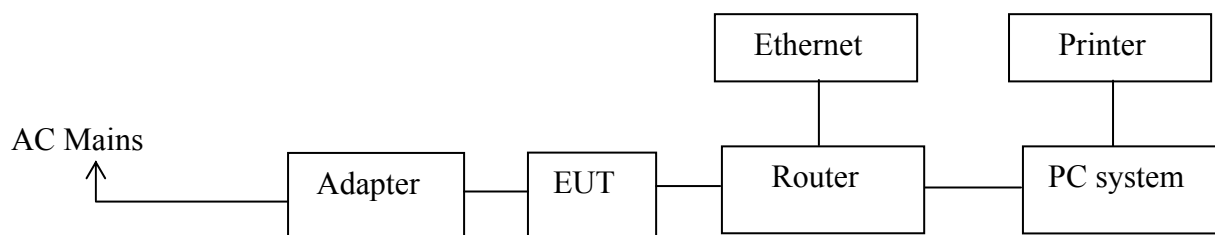
5. RADIATED EMISSION MEASUREMENT

5.1. Measurement Uncertainty

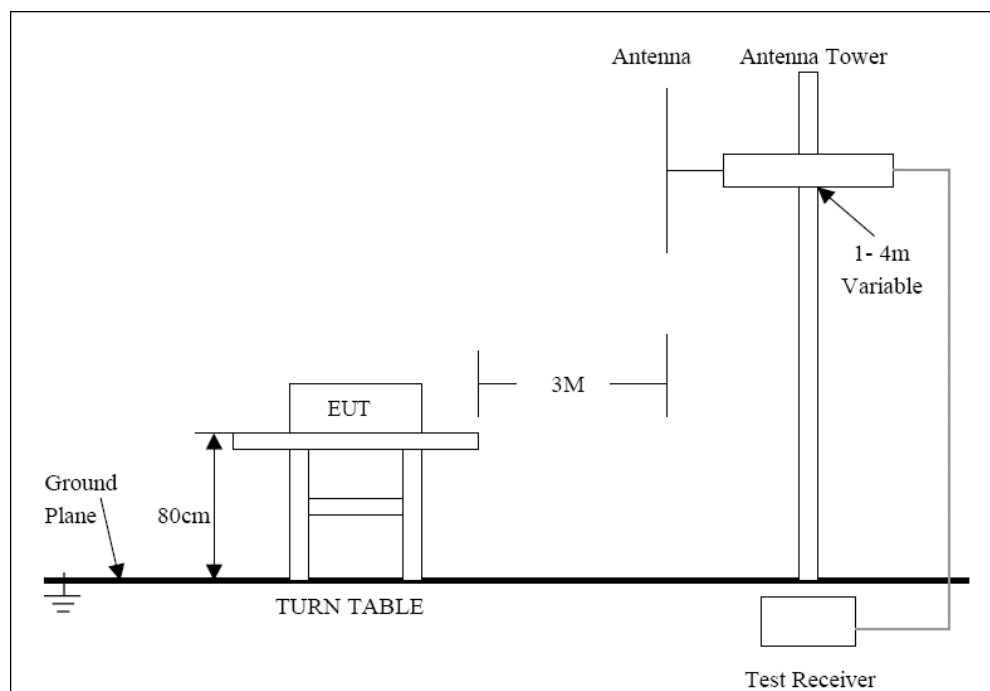
The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is + 5.10 dB.

5.2. Block Diagram of EUT Configuration

5.2.1. Block Diagram of connection between the EUT and the simulators



5.2.2. Semi-anechoic Chamber Test Setup Diagram



5.3. Test Standard

FCC Part 15 CLASS B
ANSI C63.4 2003

5.4. Radiated Emission Limit(Class B)

| FREQUENCY (MHz) | DISTANCE (Meters) | FIELD STRENGTHS LIMITS (dB μ V/m) |
|--------------------|----------------------|--|
| 30 ~ 88 | 3 | 40.0 |
| 88 ~ 216 | 3 | 43.5 |
| 216 ~ 960 | 3 | 46.0 |
| Above 1000 | 3 | 54.0 |

Note:(1) The smaller 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 EUT or system.

5.5. EUT Configuration on Test

The following equipment are installed on Radiated Emission Measurement to meet the Commission requirements and operating regulations in a manner which tends to maximize Its emission characteristics in normal application.

5.6. Operating Condition of EUT

5.6.1.Setup the EUT as shown on Section 5.2.1

5.6.2.Turn on the power of all equipments.

5.6.3.Let the EUT work in test mode (Connect to a router and the router attached to PC) and test it.

5.7. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Calibrated Loop antenna is used as receiving antenna for frequencies below 30MHz, Calibrated Bilog antenna is used as receiving antenna for frequencies between 30 MHz and 1 GHz, Calibrated Horn antenna is used as receiving antenna for frequencies above 1000MHz. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated emission measurement.

The bandwidth of test receiver is set at 9kHz in below 30MHz. and set at 120kHz in 30-1000MHz.

The final measurement in band 9-90kHz, 110-490kHz and above 1000MHz is performed with Peak detector and Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

The frequency range from 9kHz to 1000MHz is checked. All the test results are listed in Section 6.8. The measurements greater than 20dB below the limit are not report.

Through three orthogonal axes to determine which attitude and equipment arrangement produces the highest emission relative to the limit. And X direction is worst mode

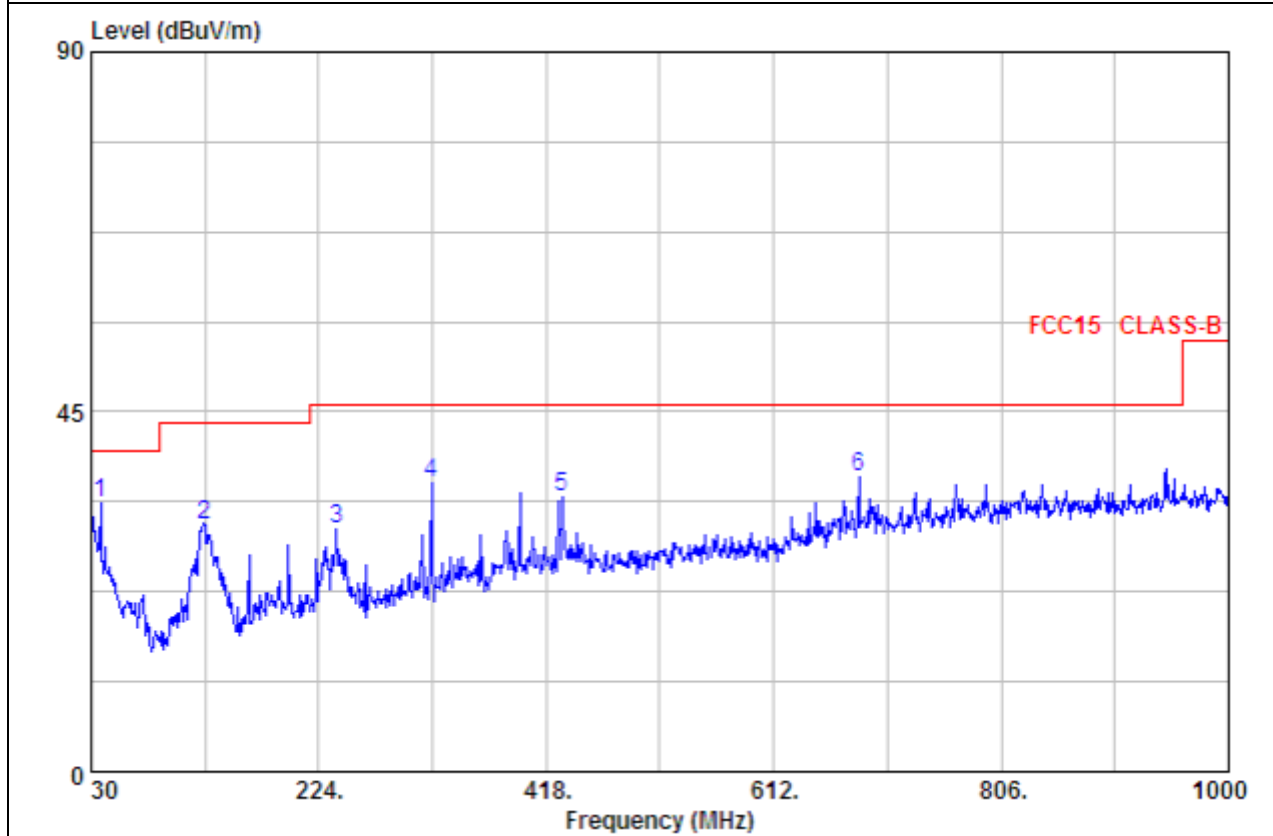
5.8. Test Result

PASS

Horizontal

| Frequency (MHz) | Meter Reading (dBµV) | Factor (dB) | Emission Level (dBµV/m) | Limits (dBµV/m) | Margin (dB) | Detector Type |
|--------------------|-------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 37.76 | 21.63 | 11.93 | 33.56 | 40.00 | -6.44 | QP |
| 126.03 | 20.49 | 10.42 | 30.91 | 43.50 | -12.59 | QP |
| 239.52 | 20.45 | 9.87 | 30.32 | 46.00 | -15.68 | QP |
| 320.03 | 26.41 | 9.65 | 36.06 | 46.00 | -9.94 | QP |
| 431.58 | 26.03 | 8.36 | 34.39 | 46.00 | -11.61 | QP |
| 684.75 | 28.11 | 8.72 | 36.83 | 46.00 | -9.17 | QP |

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

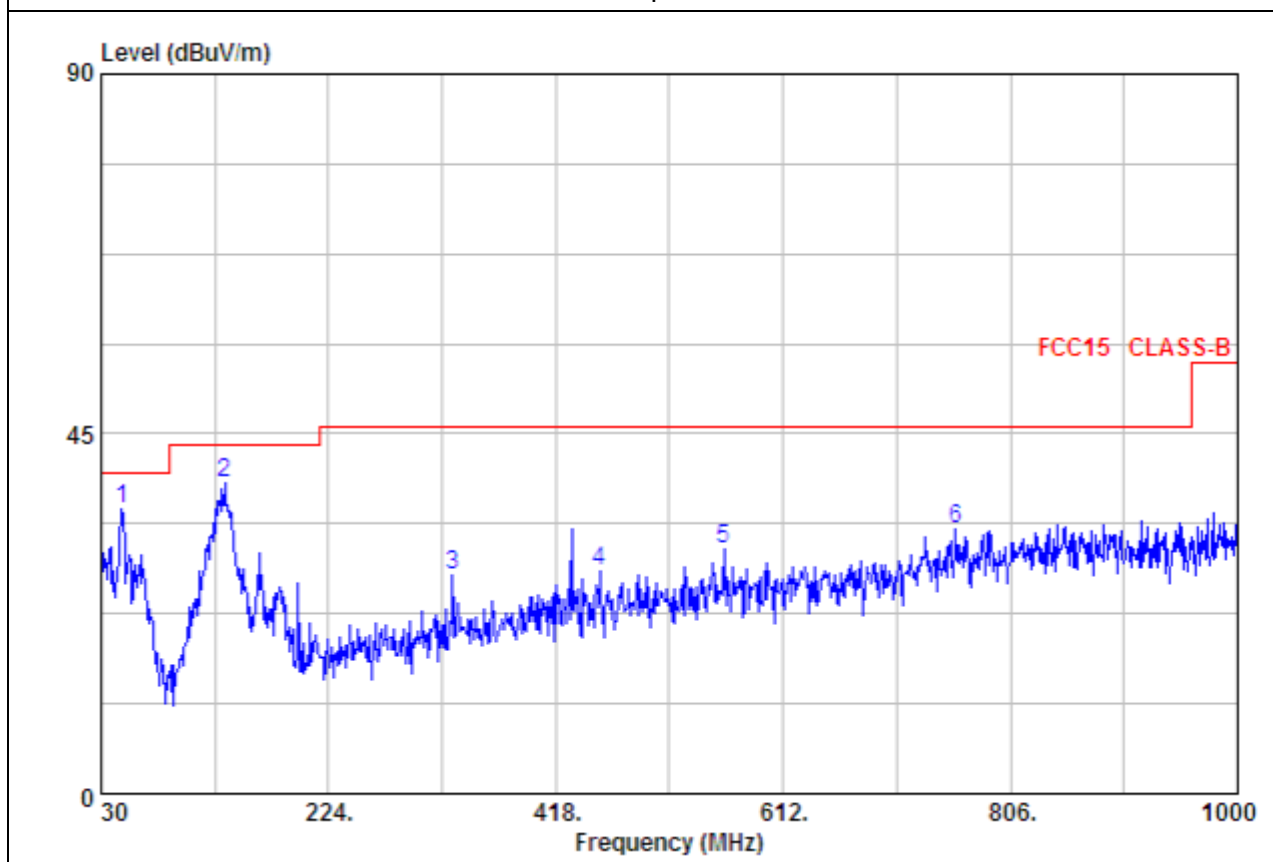


Vertical

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector Type |
|--------------------|-------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 47.46 | 26.79 | 8.72 | 35.51 | 40.00 | -4.49 | QP |
| 135.73 | 28.52 | 10.25 | 38.77 | 43.50 | -4.73 | QP |
| 329.73 | 16.08 | 11.32 | 27.40 | 46.00 | -18.60 | QP |
| 455.83 | 18.17 | 9.57 | 27.74 | 46.00 | -18.26 | QP |
| 561.56 | 21.91 | 8.65 | 30.56 | 46.00 | -15.44 | QP |
| 759.44 | 19.18 | 13.99 | 33.17 | 46.00 | -12.83 | QP |

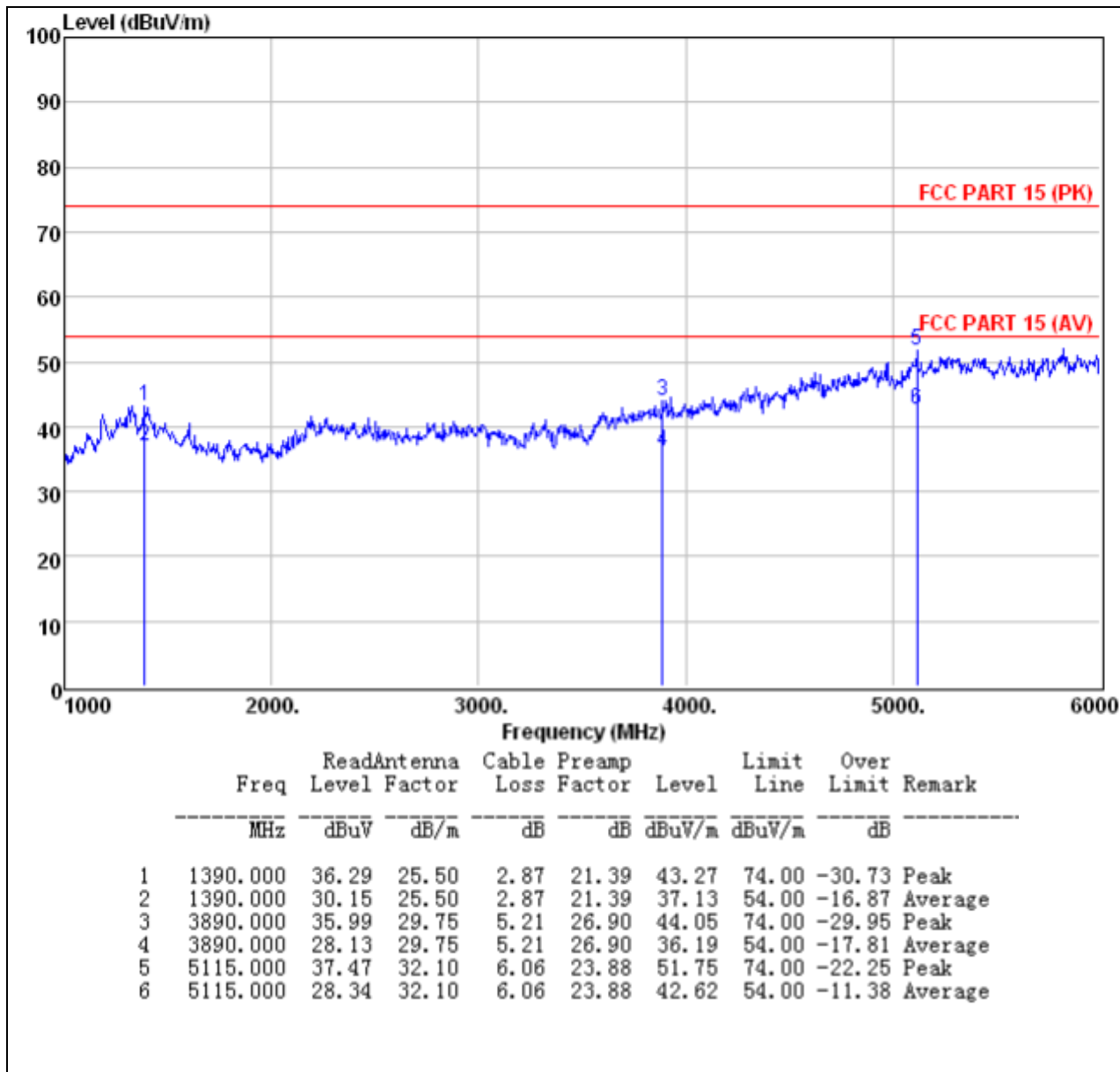
Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Plot of Radiation Emissions Test Data (Above 1GHz)

Horizontal



Vertical

