

**TEST REPORT**

Applicant Name & Address : Leadfar Industry Co., Ltd.  
No.1-2 Tong Fu Rd Niu Jiao Long village ,Ping Huan, Ping Shan  
New District ShenZhen China

Manufacturing Site : Same as applicant

Sample Description

Product : EZ fold laptop table

Model No. : MS30-021500-01

Electrical Rating : 5V/DC

FCC ID : YFQMS3002150002

Date Received : 09 August 2010

Date Test Conducted : 09 August 2010-18 August 2010


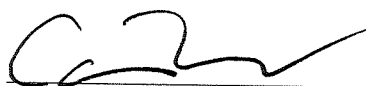
Test standards : FCC Part 15, Subpart B: 2009

Test Result : Pass

Conclusion : The submitted samples complied with the above rules/standards.

Remark : None.

\*\*\*\*\*End of Page\*\*\*\*\*

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***Team Leader***  
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***Sr. Project Engineer***  
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***20 August 2010*** ***Date***

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**TEST RESULTS SUMMARY****Classification of EUT: Class B**

<b>Test Item</b>	<b>Standard</b>	<b>Result</b>
<b>Conducted Emission</b>	<b>FCC Part 15, Subpart B: 2009</b>	<b>Pass</b>
<b>Radiated Emission</b>	<b>FCC Part 15, Subpart B: 2009</b>	<b>Pass</b>

**Remark: 1. The symbol “N/A” in above table means Not Applicable.**

**2. When determining the test results, measurement uncertainty of tests has been considered.**

**2****Test Results Conclusion**  
(with Justification)

RE: EMC Testing Pursuant to FCC Part 15, Subpart B: 2009 Performed On the EZ fold laptop table, Model: MS30-021500-01.

We tested the EZ fold laptop table, Model: MS30-021500-01, to determine if it was in compliance with the relevant FCC rules as marked on the Test Results Summary. We found that the unit met the requirement of FCC Part 15, Subpart B: 2009 when tested as received. The worst case's test data was presented in this test report. Test items Conducted Emission and Radiated Emission were subcontracted.

This report supersedes previous report GZ10080388-1 dated 18 August 2010.

The Equipment Under Test (EUT) is EZ fold laptop table, model: MS30-021500-01. It is powered by the USB port of computer. The EUT can provide functions that ergonomic multi-function laptop table, height adjustable for the perfect position and notebook stand with adjustable angle.

The EUT has a USB hub. During testing, the little USB port is connected with computer, one USB port is connected with LED light and other three USB ports are connected with USB flash memory. Data stream are transferred from computer to USB flash memory continuously.

The data on the below test result table lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

According 15.107, the worst case conducted emission at 0.190 MHz

Judgement: Passed by -14.6 dB

According 15.109, the worst case radiated emission at 959.984 MHz

Judgement: Passed by -4.1 dB

The production units are required to conform to the initial sample as received when the units are placed on the market.

### 3

## LABORATORY MEASUREMENTS

### Configuration Information

**Equipment Under Test (EUT):** EZ fold laptop table

**Model:** MS30-021500-01

**Serial No.** Not Labelled

#### Support Equipment:

Product Name	Manufacturer	Model
Computer	HP	2510P(RL487AV)
Adapter	HP	PPP009H
Hard disk	Smart.drive	HD3-SU2FW
USB flash memory	Sandisk	SDCZ6/2GB

**Rated Voltage:** 5V/DC

**Condition of Environment:**

Temperature	:	15~35°C
Relative Humidity:		35~60%
Atmosphere Pressure		86~106kPa

#### Notes:

##### 1. EUT Grounding

The unit was grounded as normally used.

##### 2. Test Environment

If ambient levels of emissions exceed the appropriate limit, the following steps were taken to assure compliance. First, the measurement bandwidth was reduced, if this did not affect the peak readings. Such a reduction can allow much closer examination of emissions close to local ambient signals. Second, the antenna could be brought closer to the EUT. Finally, in severe cases, testing was re-performed at night or other times when the offending signal was off the air. The measurements were made at nominal room temperature (25°C ± 10°C).

##### 3. Test Site

Conducted Emission test and Radiated Emission test were subcontracted to Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch and located at 6F, Block D, Huahan Building, Langshan Road, Nanshan District Shenzhen, P.R.China. This test facility and site measurement data have been fully placed on file with File Number 242492

##### 4. Test Platform

Radiated emission test was made on 0.8m high, 1m x 1.5m wide non-conductive platform. Conducted emission test was made on 0.8m high non-metallic table above earthed ground plane (Ground Reference Plane). The vertical conducting plane or wall of a screened room shall be located 40 cm to the rear of the EUT. All other surfaces of tabletop EUTs shall be at least 80 cm from any other grounded conducting surface, including the case or cases of one or more LISNs.

##### 5. Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty of test has been considered.

## 4 TEST RESULTS

### 4.1 Conducted Emission Test

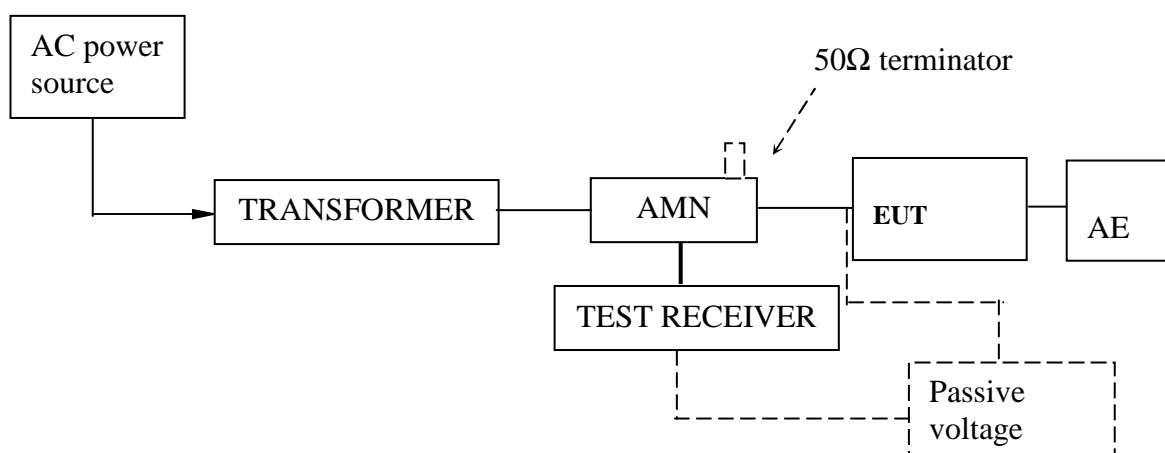
**Date of test: 18 August 2010**

**Test Result: Pass**

#### 4.1.1 Used Test Equipment

Equipment No.	Equipment	Model	Manufacturer	Serial No.	Cal. Date	Due Date
SZ185-02	EMI Test Receiver	ESCI	R&S	100692	23-Nov-09	23-Nov-10
SZ187-01	LISN	ENV216	R&S	100072	23-Nov-09	23-Nov-10
SZ067-03	Power Splitter	RVZ	R&S	100410	08-Mar-10	08-Mar-11
SZ066-01	Isolation Transformer	ISO TRAN	Erika Fiedler OHG	89	14-Jan-10	14-Jan-11
SZ067-01	Matching Pad	RAM	R&S	101055	08-Mar-10	08-Mar-11
SZ067-02	Matching Pad	RAM	R&S	101056	08-Mar-10	08-Mar-11
SZ062-09	RF Cable	RG58/AU	MIZU		/	/
SZ188-03	Shielding Room	ETS	RFD-100	4100	15-Sep-07	15-Sep-10

#### 4.1.2 Block Diagram of Test Setup



#### 4.1.3 Test Setup and Procedure

Test was performed according to ANSI C63.4: 2003. The EUT was set to achieve the maximum emission level. The mains terminal disturbance voltage was measured with the EUT in a shielded room. The EUT was connected to AC power source through an Artificial Mains Network which provides a  $50\Omega$  linear impedance. Artificial hand is used if appropriate (for handheld apparatus). The load/control terminal disturbance voltage was measured with passive voltage probe if appropriate.

The vertical conducting plane or wall of a screened room shall be located 40 cm to the rear of the EUT. All other surfaces of tabletop EUTs shall be at least 80 cm from any other grounded conducting surface, including the case or cases of one or more LISNs. The table-top EUT was placed on a 0.8m high non-metallic table above earthed ground plane (Ground Reference Plane). And for floor standing EUT, was placed on a 0.1m high non-metallic supported on GRP. The Artificial Mains Network is situated at a distance of 0.8m from the EUT.

During the test, mains lead of EUT excess 0.8m was folded back and forth parallel to the lead so as to form a horizontal bundle with a length between 0.3m and 0.4m.

The bandwidth of test receiver was set at 9 kHz. The frequency range from 150 kHz to 30MHz was checked.

#### 4.1.4 Test Data

**At main terminal: Pass**

**Tested Wire: Live**

**Operation Mode: Lamp On and Transfer data continuously**

Frequency [MHz]	Quasi-Peak		Average	
	Disturbance level [dB(μV)]	Permitted limit [dB(μV)]	Disturbance level [dB(μV)]	Permitted limit [dB(μV)]
0.160	<55	65.5	<45	55.5
0.190	49.1	64.0	30.2	54.0
0.254	39.9	61.6	22.3	51.6
0.550	<46	56.0	<36	46.0
1.000	<46	56.0	<36	46.0
1.400	<46	56.0	<36	46.0
2.014	31.5	56.0	22.2	46.0
3.500	<46	56.0	<36	46.0
6.000	<50	60.0	<40	50.0
10.000	<50	60.0	<40	50.0
22.000	<50	60.0	<40	50.0
30.000	<50	60.0	<40	50.0



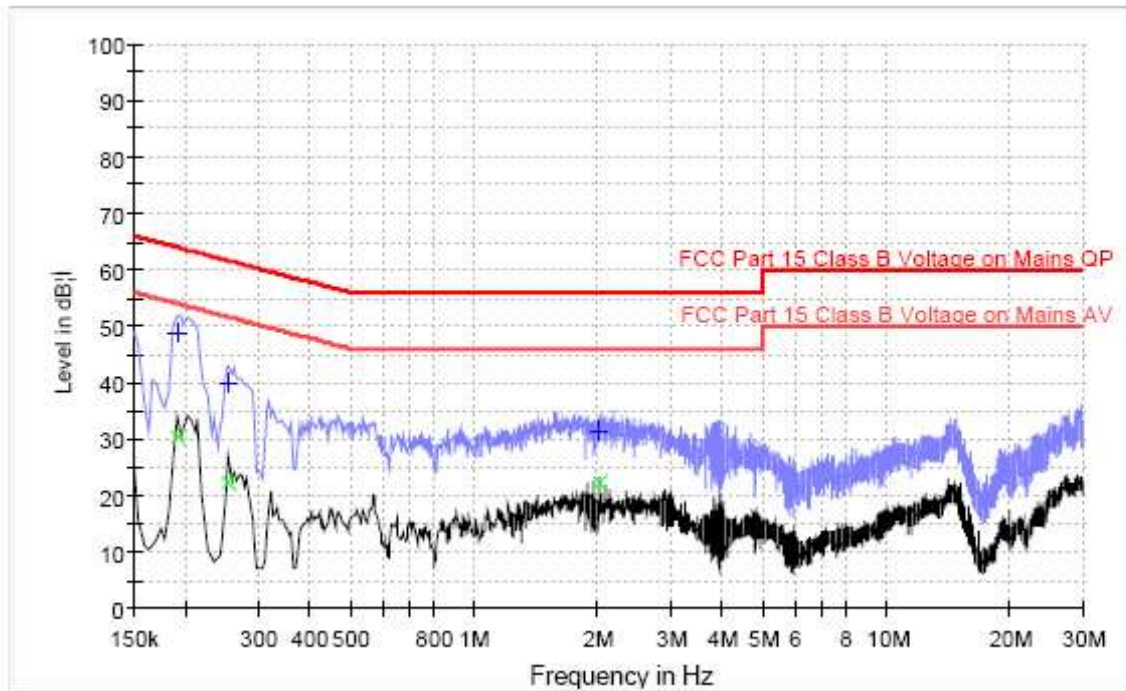
**Tested Wire: Neutral**

**Operation Mode: Lamp On and Transfer data continuously**

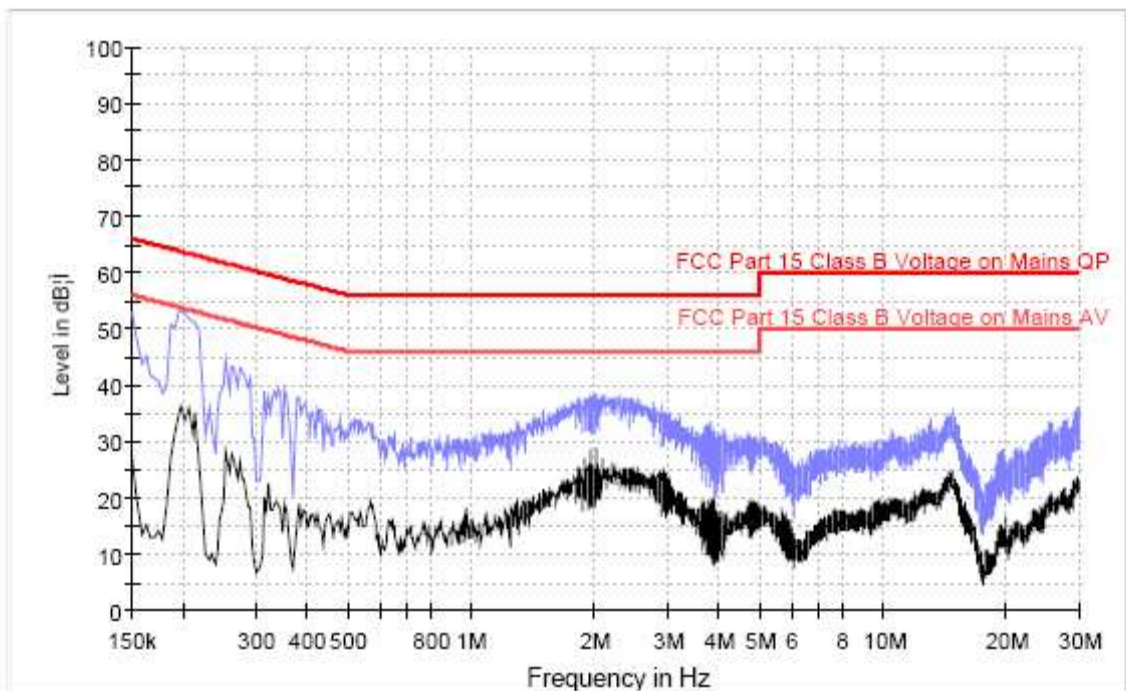
Frequency [MHz]	Quasi-Peak		Average	
	Disturbance level [dB(μV)]	Permitted limit [dB(μV)]	Disturbance level [dB(μV)]	Permitted limit [dB(μV)]
0.160	<55	65.5	<45	55.5
0.200	49.0	63.6	30.1	53.6
0.240	<52	62.1	<42	52.1
0.550	<46	56.0	<36	46.0
1.000	<46	56.0	<36	46.0
1.400	<46	56.0	<36	46.0
2.000	<46	56.0	<36	46.0
3.500	<46	56.0	<36	46.0
6.000	<50	60.0	<40	50.0
10.000	<50	60.0	<40	50.0
22.000	<50	60.0	<40	50.0
30.000	<50	60.0	<40	50.0

#### 4.1.5 Emission Curve

**Tested Wire: Live**



**Tested Wire: Neutral**



#### 4.1.6 Measurement Uncertainty

Uncertainty: 3.5 dB at a level of confidence of 95%

## 4.2 Radiated Emission

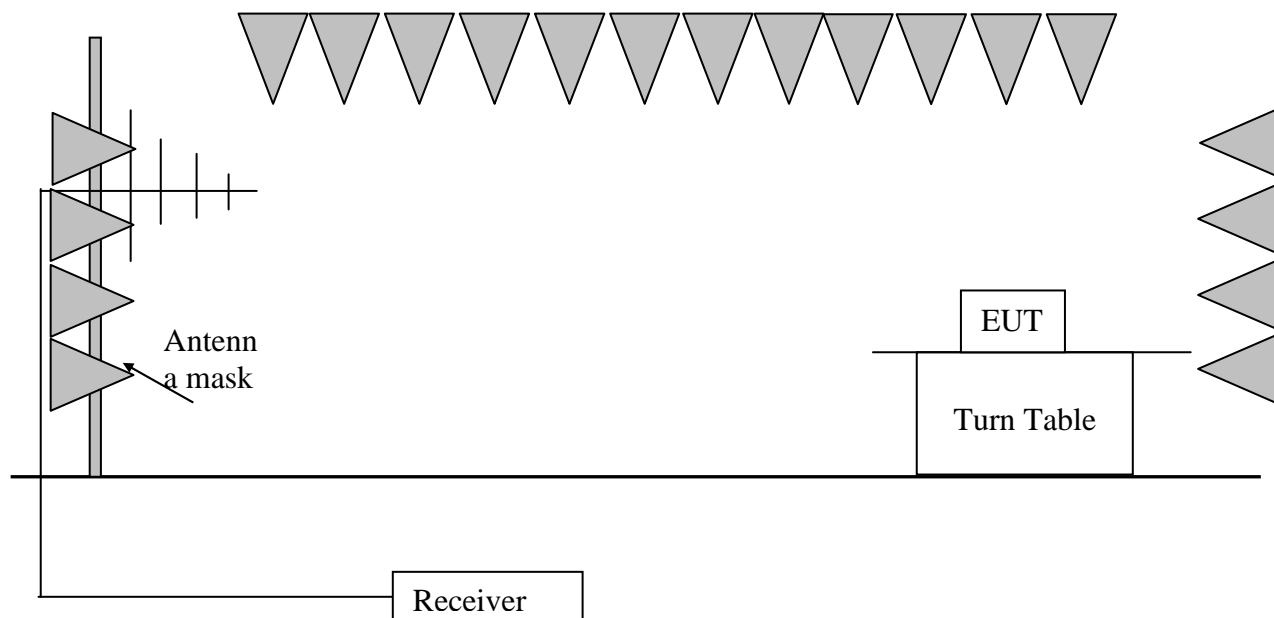
Date of test: 17 August 2010

Test Result: Pass

### 4.2.1 Used Test Equipment

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ061-03	BiConiLog Antenna	ETS	3142C	00066460	25-Nov-09	25-May-11
SZ185-01	EMI Receiver	R&S	ESCI	100547	08-Mar-10	08-Mar-11
SZ056-03	Spectrum Analyzer	R&S	FSP 30	101148	18-Mar-10	18-Mar-11
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	31-Oct-09	31-Oct-10
SZ062-04	RF Cable	RADIAL	RG 213U	--	05-Nov-09	05-Nov-10
SZ062-06	RF Cable	RADIAL	0.04-26.5GHz	--	17-Aug-09	17-Aug-10

### 4.2.2 Block Diagram of Test Setup



### 4.2.3 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any), Average Factor (optional) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG - AV$$

where FS = Field Strength in dB $\mu$ V/m

RA = Receiver Amplitude (including preamplifier) in dB $\mu$ V

CF = Cable Attenuation Factor in dB

AF = Antenna Factor in dB

AG = Amplifier Gain in dB

AV = Average Factor in dB

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows:

$$FS = RR + LF$$

where FS = Field Strength in dB $\mu$ V/m

RR = RA - AG - AV in dB $\mu$ V

LF = CF + AF in dB

Assume a receiver reading of 52.0 dB $\mu$ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB are added. The amplifier gain of 29 dB and average factor of 5 dB are subtracted, giving a field strength of 27 dB $\mu$ V/m. This value in dB $\mu$ V/m was converted to its corresponding level in  $\mu$ V/m.

$$RA = 52.0 \text{ dB}\mu\text{V/m}$$

$$AF = 7.4 \text{ dB}$$

$$CF = 1.6 \text{ dB}$$

$$AG = 29.0 \text{ dB}$$

$$AV = 5.0 \text{ dB}$$

$$FS = RR + LF$$

$$FS = 18 + 9 = 27 \text{ dB}\mu\text{V/m}$$

$$RR = 18.0 \text{ dB}\mu\text{V}$$

$$LF = 9.0 \text{ dB}$$

$$\text{Level in } \mu\text{V/m} = \text{Common Antilogarithm } [(27 \text{ dB}\mu\text{V/m})/20] = 22.4 \mu\text{V/m}$$

#### 4.2.4 Test Setup and Procedure

The measurement was applied in a 3 m semi-anechoic chamber. The EUT and simulators were placed on a 0.8m high wooden turntable above the horizontal metal ground plane. The turn table rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna which was mounted on an antenna mask. The antenna moved up and down between from 1meter to 4 meters to find out the maximum emission level.

Broadband antenna was used as receiving antenna. Both horizontal and vertical polarization of the antenna was set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4: 2003 requirement during radiated test. The bandwidth setting on R&S Test Receiver was 120 kHz. The frequency range from 30MHz to 1000MHz was checked

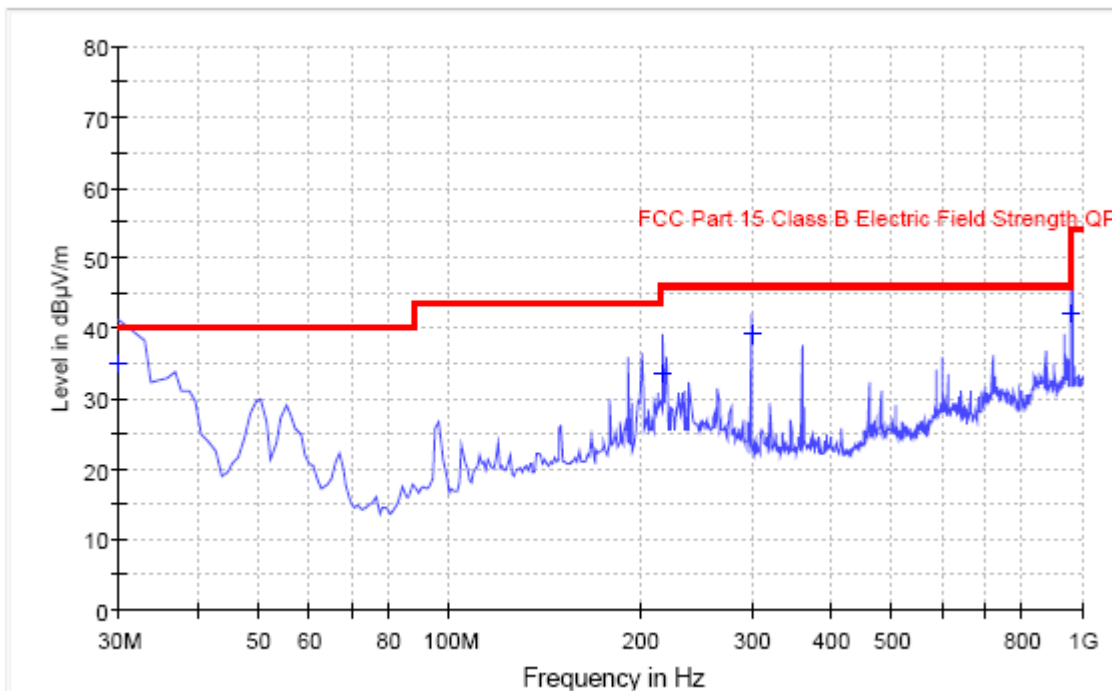
#### 4.2.5 Test Data

**Radiated Emissions**

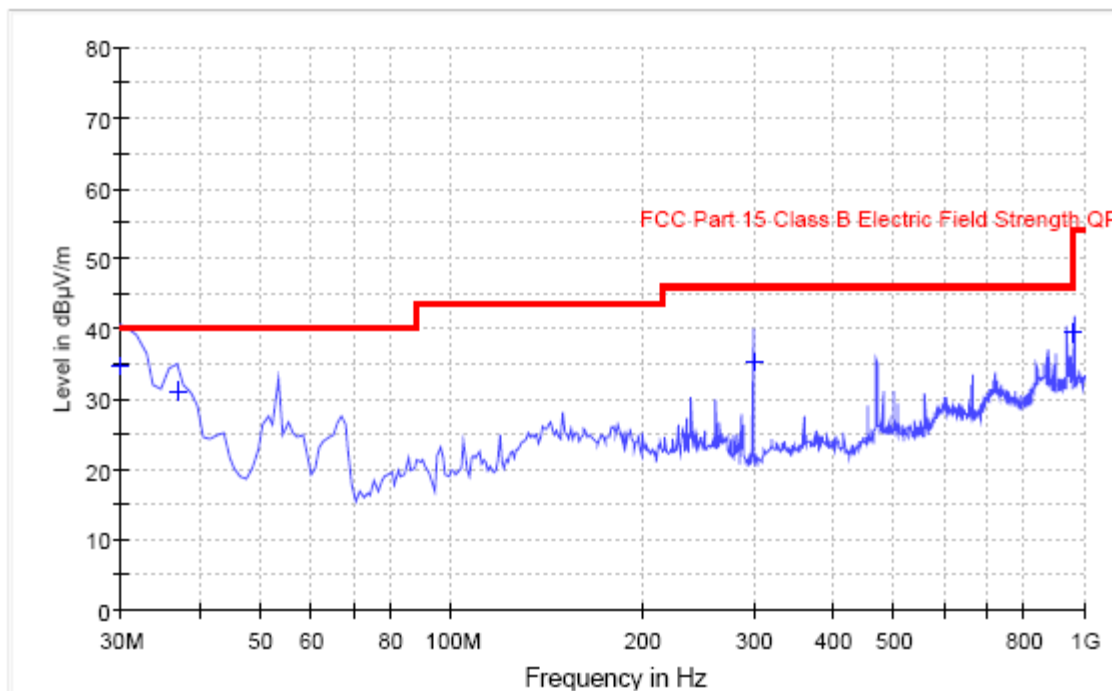
Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (-dB)	Net at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	30.020	35.5	20.0	19.4	-	34.9	40.0	-5.1
Horizontal	217.506	40.3	20.0	13.3	-	33.6	46.0	-12.4
Horizontal	300.000	44.3	20.0	14.8	-	39.1	46.0	-6.9
Horizontal	959.984	34.6	20.0	27.3	-	41.9	46.0	-4.1
Vertical	30.020	35.3	20.0	19.4	-	34.7	40.000	-5.3
Vertical	36.790	35.9	20.0	15.3	-	31.2	40.000	-8.8
Vertical	300.010	40.6	20.0	14.8	-	35.4	46.000	-10.6
Vertical	959.988	32.2	20.0	27.3	-	39.5	46.000	-6.5

Remark: Antenna factor includes antenna and cable factor

#### 4.2.6 Test Curve Horizontal



#### Vertical



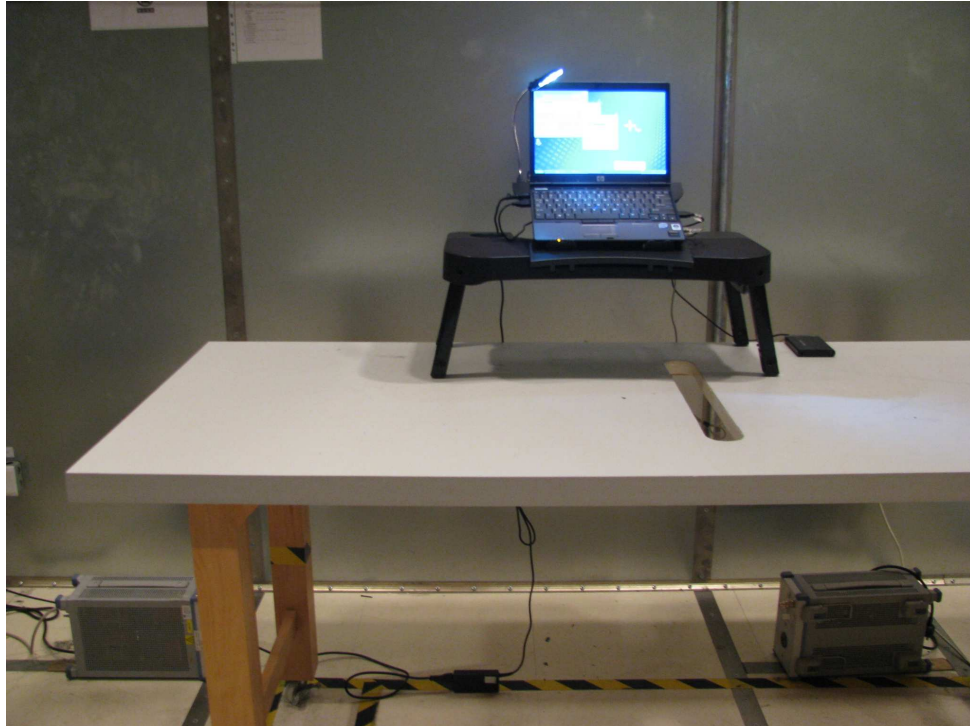
#### 4.2.7 Measurement uncertainty

Uncertainty: 4.8 dB in the frequency range of 30-1000 MHz at a level of confidence of 95%

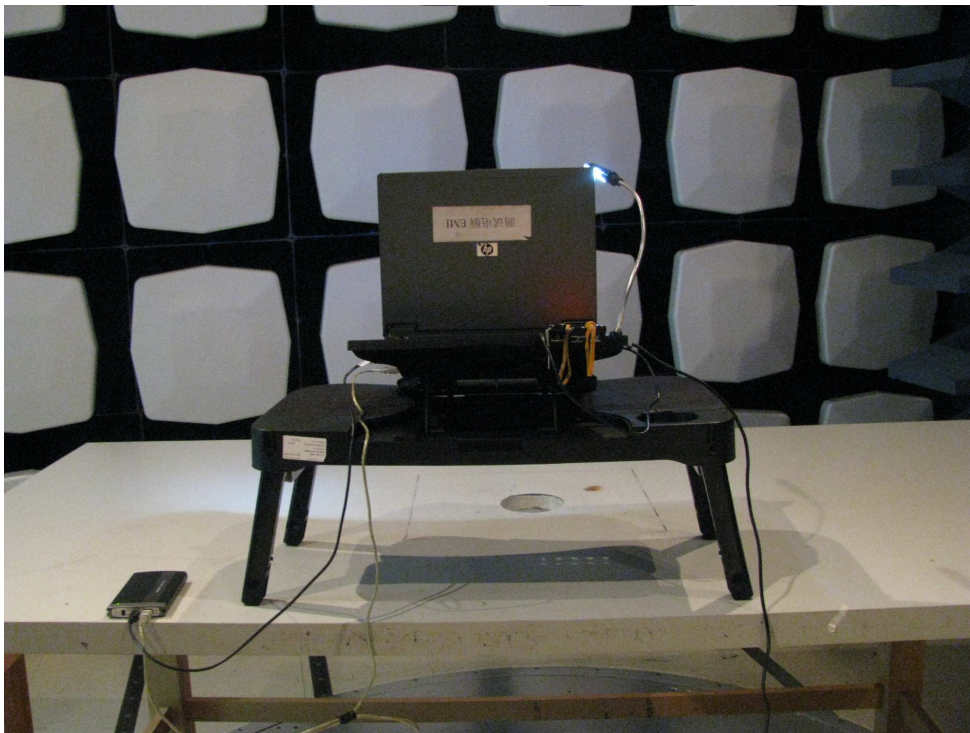


## 5 Appendix I - Photos of test setup

Conducted Emission



Radiated Emission





## 6 Appendix II - Photos of EUT

Outside

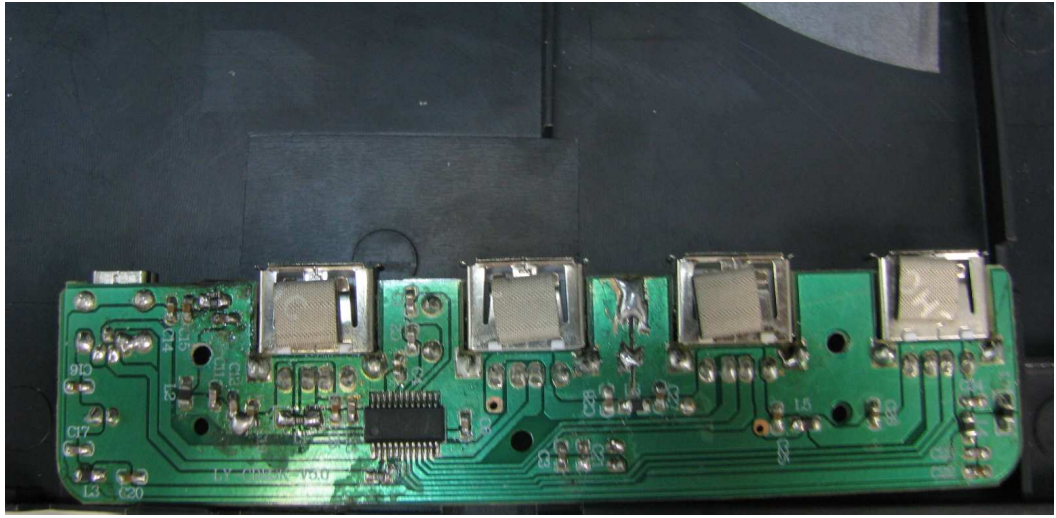


Aluminum foil in the bottom of box



PCB





## 7 Appendix III - Document List

Exhibit type	File Description	Filename
Test Report	Test Report	Report.pdf
Modification Report	Modification Report	Modification Report.pdf
Block Diagram	Block Diagram	Block.pdf
Schematics	Circuit Diagram	Circuit.pdf
Operation Description	Technical Description	Description.pdf
ID Label/Location	Label Artwork and Location	Label.pdf
User Manual	User Manual	Manual.pdf
Cover Letter	Letter of Agency	Agency.pdf

## 8 Appendix IIV - Nameplate

### FCC LABELLING AND INSTRUCTION MANUAL REQUIREMENTS

Devices subject to FCC Part 15, Subpart B: 2008 verification must be labeled with the following statement. The label can be affixed at any space external to the product except the battery door or detachable parts. If the label too small to hold the statement, this statement can be written into instruction manual.

**This device complies with Part 15 of the FCC 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.**

In addition, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

**Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.**

NOTE:

**This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:**

- Reorient or relocate the receiving antenna.**
- Increase the separation between the equipment and receiver.**
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.**
- Consult the dealer or an experienced radio/TV technician for help.**