

FCC TEST REPORT  
On Behalf of  
Cheng Fong International Limited

Tablet PC  
Model No.: TBQG774B, M720C

Prepared for : Cheng Fong International Limited  
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Report Number : 201402701F  
Date of Test : Feb. 26~ Mar. 11, 2014  
Date of Report : Mar. 12, 2014

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## TEST REPORT VERIFICATION

Applicant : Cheng Fong International Limited  
Manufacturer : Cheng Fong International Limited  
EUT : Tablet PC  
Model No. : TBQG774B, M720C  
Rating : Micro-5pin, 2A Via Adapter  
(AC 100-240V, 50/60Hz, 0.65A Max.)  
Trade Mark : N/A

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart B 15.107, 15.109 & FCC / ANSI C63.4-2009

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited To determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B Class B limits both radiated and conducted emissions. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited Is assumed full responsibility for the accuracy and completeness of these measurements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited

Date of Test : Feb. 26~ Mar. 11, 2014

Prepared by : Rock zeng  
(Tested Engineer / Rock Zeng)

Reviewer : Amy Ding  
(Project Manager / Amy Ding)

Approved & Authorized Signer : Tom Chen  
(Manager / Tom Chen)

## 1. GENERAL INFORMATION

### 1.1. Description of Device (EUT)

Description : Tablet PC

Model Number : TBQG774B, M720C  
(Note: All samples are the same except the model number & appearance, so we prepare “TBQG774B” for EMC test only.)

Test Power Supply : AC 120V/60Hz for adapter/  
DC 5V(With DC 3.7V battery inside)

Adapter : Model:THX-050200KE  
Input: AC 100-240V, 50/60Hz, 0.65A  
Output: DC 5V, 2000mA

Applicant : Cheng Fong International Limited

Address : RM A1701, High Tech Plaza Phase I, Tianan Cyber Park, Futian District, Shenzhen, China

Manufacturer : Cheng Fong International Limited

Address : RM A1701, High Tech Plaza Phase I, Tianan Cyber Park, Futian District, Shenzhen, China

Factory : Cheng Fong International Limited

Address : RM A1701, High Tech Plaza Phase I, Tianan Cyber Park, Futian District, Shenzhen, China

Date of receipt : Feb. 26, 2014

Date of Test : Feb. 26~ Mar. 11, 2014

## 1.2. Auxiliary Equipment Used during Test

PC	: Manufacturer: DELL M/N: OPTIPLEX 380 S/N: 1J63X2X CE , FCC: DOC
MONITOR	: Manufacturer: DELL M/N: E170Sc S/N: CN-00V539-64180-055-0UPS CE , FCC: DOC
KEYBOARD	: Manufacturer: DELL M/N: SK-8115 S/N: CN-0DJ313-71616-06C-02XN CE , FCC: DOC Cable: 1m, unshielded
MOUSE	: Manufacturer: DELL M/N: M-UARDEL7 S/N: N/A CE , FCC: DOC Cable: 1m, unshielded
Printer	: Manufacturer:Brother M/N: MFC-3360C S/N: N/A CE, FCC:DOC
Power Cord of Printer	: Non-shielded, Detachable, 0.8m, w/o core
USB Cable for Printer	: Non-Shielded , 1.5m
Power Line	Non-Shielded, 1.5m
VGA Cable	: Non-Shielded, 1.5m
Network Cable	: Non-Shielded, 1.5m
USB Cable for EUT	: Non-Shielded, 1.2m

### 1.3. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

#### **FCC-Registration No.: 463622**

EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 463622, June 14, 2011.

#### **IC-Registration No.: 46405-9469**

EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration 46405-9469, May 02, 2011.

#### **Test Location**

All Emissions tests were performed at

NINGBO EMTEK CO., LTD. at 1F Building 4, 1177#, Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, Zhejiang, China

### 1.4. Measurement Uncertainty

Radiation Uncertainty : Ur = 4.3dB

Conduction Uncertainty : Uc = 3.4dB

### 1.5. Test Summary

For the EUT described above. The standards used were FCC Part 15 Subpart B for Emissions.

Table 1 : Tests Carried Out Under FCC Part 15 Subpart B

Standard	Test Items	Status
FCC Part 15 Subpart B	Power Line Conducted Emission Test (150KHz To 30MHz)	✓
FCC Part 15 Subpart B	Radiated Emission Test (30MHz To 1000MHz)	✓

✓ Indicates that the test is applicable

x Indicates that the test is not applicable

## 2. POWER LINE CONDUCTED MEASUREMENT

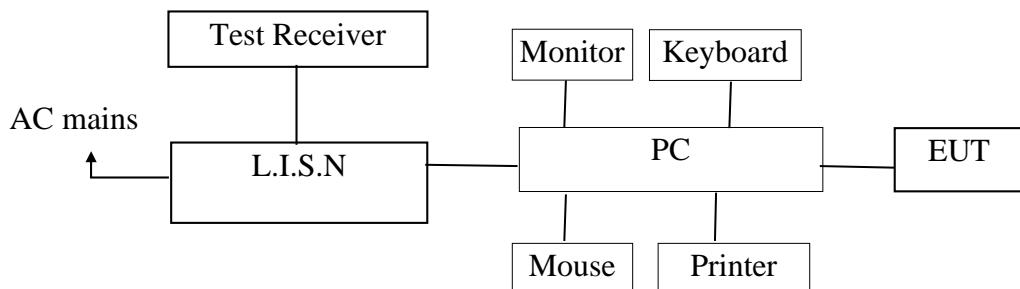
### 2.1. Test Equipment

The following test equipments are used during the power line conducted measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Two-Line V-network	Rohde & Schwarz	ENV216	100055	Apr. 23, 2013	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Apr. 23, 2013	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Apr. 23, 2013	1 Year

### 2.2. Block Diagram of Test Setup

#### 2.2.1. Block diagram of connection between the EUT and simulators



### 2.3. Power Line Conducted Emission Measurement Limits (FCC Part 15

#### Class B)

Frequency MHz	Limits dB( $\mu$ 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.  
2. The lower limit shall apply at the transition frequencies.

### 2.4. Configuration of EUT on Measurement

The following equipments are installed on power line conducted emission measurement to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

## 2.5. Operating Condition of EUT

- 2.5.1. Setup the EUT and simulator as shown as Section 2.2.
- 2.5.2. Turn on the power of all equipment.
- 2.5.3. Let the EUT work in test mode (Charging to adapter, Communication) and measure it.

## 2.6. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of DC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.4-2009 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9KHz.

The frequency range from 150KHz to 30MHz is checked.

The test result are reported on Section 2.7.

## 2.7. Power Line Conducted Emission Measurement Results

**PASS.**

The frequency range from 150KHz to 30 MHz is investigated.

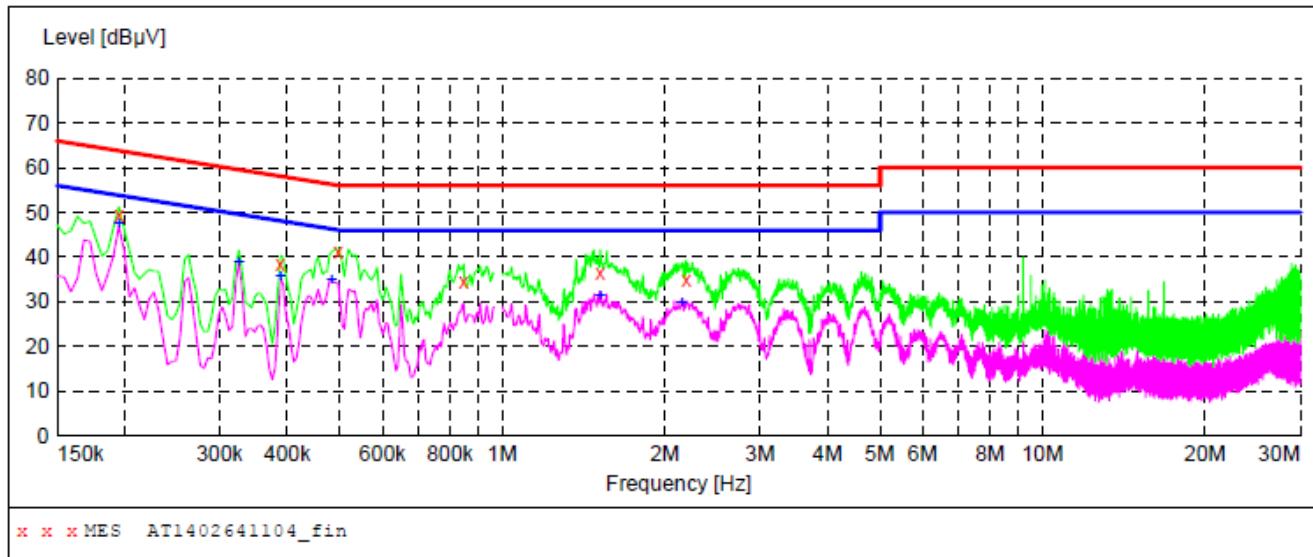
The EUT was tested on (Charging to adapter, Communication) modes, only the worst data of (Communication) are attached in the following pages.

**CONDUCTED EMISSION TEST DATA**

Test Site: 1# Shielded Room  
 Operating Condition: Communication  
 Test Specification: DC 5V  
 Comment: L  
 Tem:25°C Hum:50%

**SCAN TABLE: "Voltage (150K~30M) FIN"**

Short Description: 150K-30M Disturbance Voltages

**MEASUREMENT RESULT: "AT1402641104\_fin"**

2/27/2014 11:09AM

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.195000	49.40	20.1	64	14.4	QP	L1	GND
0.388500	38.40	20.1	58	19.7	QP	L1	GND
0.496500	41.20	20.1	56	14.9	QP	L1	GND
0.847500	34.60	20.1	56	21.4	QP	L1	GND
1.517500	36.40	20.3	56	19.6	QP	L1	GND
2.188000	35.00	20.3	56	21.0	QP	L1	GND

**MEASUREMENT RESULT: "AT1402641104\_fin2"**

2/27/2014 11:09AM

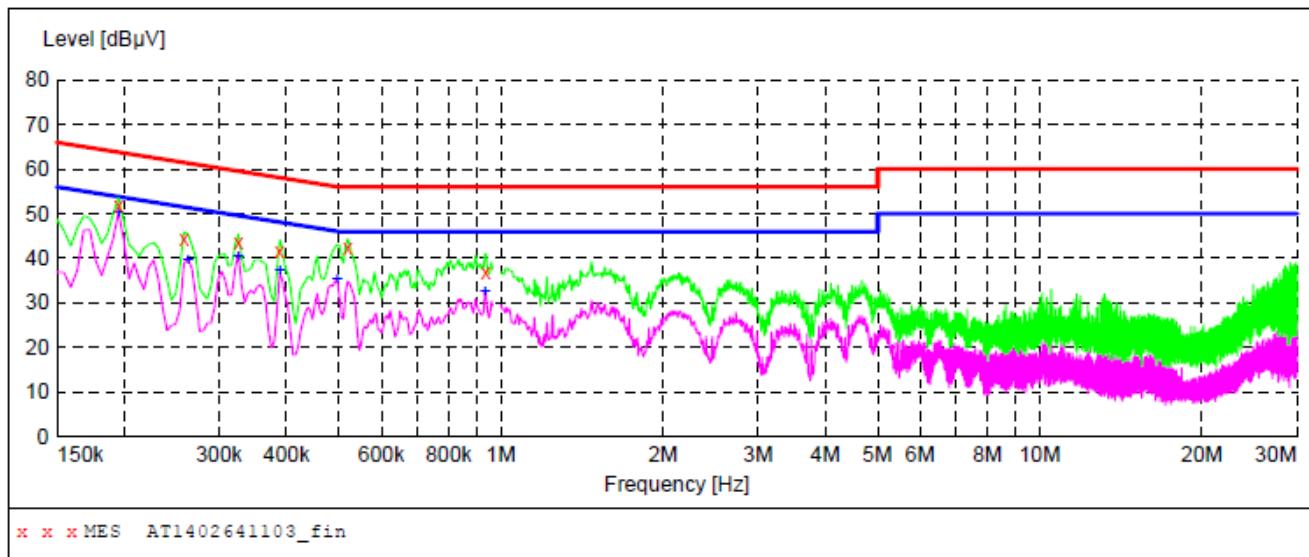
Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.195000	47.30	20.1	54	6.5	AV	L1	GND
0.325500	39.00	20.1	50	10.6	AV	L1	GND
0.388500	35.60	20.1	48	12.5	AV	L1	GND
0.483000	34.80	20.1	46	11.5	AV	L1	GND
1.517500	31.50	20.3	46	14.5	AV	L1	GND
2.152000	29.80	20.3	46	16.2	AV	L1	GND

**CONDUCTED EMISSION TEST DATA**

Test Site: 1# Shielded Room  
 Operating Condition: Communication  
 Test Specification: DC 5V  
 Comment: N  
 Tem:25°C Hum:50%

**SCAN TABLE: "Voltage (150K~30M) FIN"**

Short Description: 150K-30M Disturbance Voltages

**MEASUREMENT RESULT: "AT1402641103\_fin"**

2/27/2014 11:05AM

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.195000	51.80	20.1	64	12.0	QP	N	GND
0.258000	44.30	20.1	62	17.2	QP	N	GND
0.325500	43.70	20.1	60	15.9	QP	N	GND
0.388500	41.70	20.1	58	16.4	QP	N	GND
0.519000	42.50	20.1	56	13.5	QP	N	GND
0.937500	36.90	20.1	56	19.1	QP	N	GND

**MEASUREMENT RESULT: "AT1402641103\_fin2"**

2/27/2014 11:05AM

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.195000	50.20	20.1	54	3.6	AV	N	GND
0.262500	39.80	20.1	51	11.6	AV	N	GND
0.325500	40.60	20.1	50	9.0	AV	N	GND
0.388500	37.10	20.1	48	11.0	AV	N	GND
0.496500	35.20	20.1	46	10.9	AV	N	GND
0.933000	32.60	20.1	46	13.4	AV	N	GND

### 3. RADIATED EMISSION MEASUREMENT

#### 3.1. Test Equipment

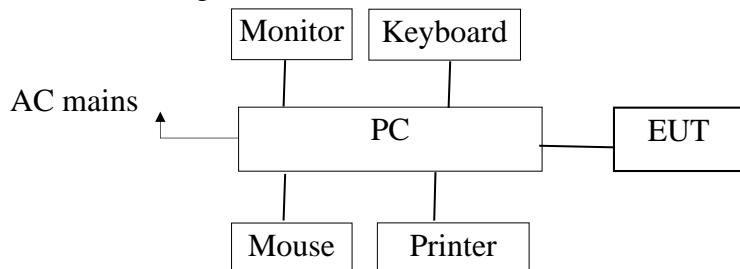
The following test equipments are used during the radiated emission measurement:

##### 3.1.1. For Anechoic Chamber

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	Rohde & Schwarz	ESPI	101604	Apr. 23, 2013	1 Year
2.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	May 14, 2013	3 Year
3.	Pre-amplifier	SONOMA	310N	186860	Aug. 09, 2013	1 Year

#### 3.2. Block Diagram of Test Setup

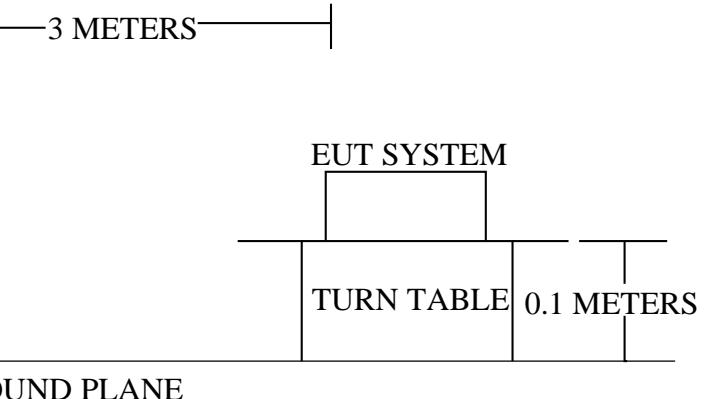
##### 3.2.1. Block diagram of connection between the EUT and simulators



##### 3.2.2. Anechoic Chamber Test Setup Diagram

###### ANTENNA TOWER

ANTENNA ELEVATION VARIES FROM 1 TO 4 METERS



#### 3.3. Radiated Emission Limit (Subpart B Class B)

FREQUENCY	DISTANCE	FIELD STRENGTHS LIMIT
-----------	----------	-----------------------

MHz	Meters	$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
30~88	3	100	40.0
88~216	3	150	43.5
216~960	3	200	46.0
960~1000	3	500	54.0

Remark :

- (1) Emission level (dB) $\mu\text{V}$  =  $20 \log \text{Emission level } \mu\text{V}/\text{m}$
- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

### 3.4. EUT Configuration on Measurement

The following equipments 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.

### 3.5. Operating Condition of EUT

3.5.1. Setup the EUT as shown in Section 3.2.

3.5.2. Let the EUT work in test mode (Charging to adapter, Communication, Camera Mode, WIFI Mode) and measure it.

### 3.6. Test Procedure

EUT and its simulators are placed on a turn table, which is 0.1 meter high above ground. The turn table 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 a antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (Trilog Broadband Antenna) is used as receiving antenna. 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 C63.4-2009 on radiated emission measurement.

The bandwidth of the EMI test receiver (ESCI) is set at 120kHz.

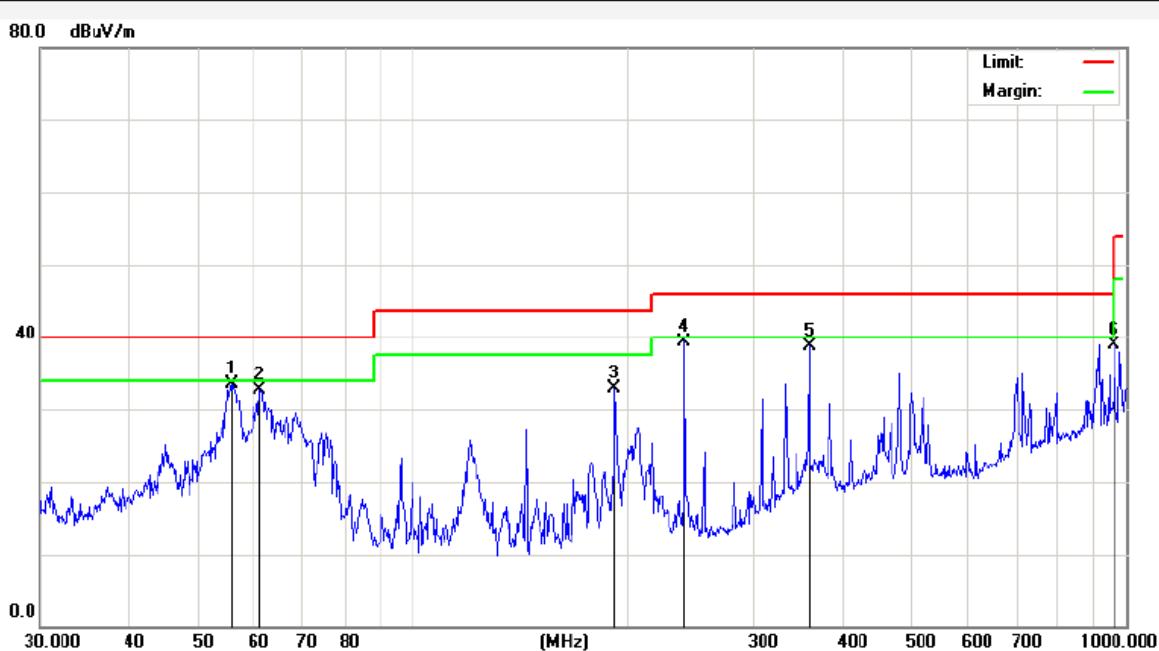
The frequency range from 30MHz to 1000MHz is checked.

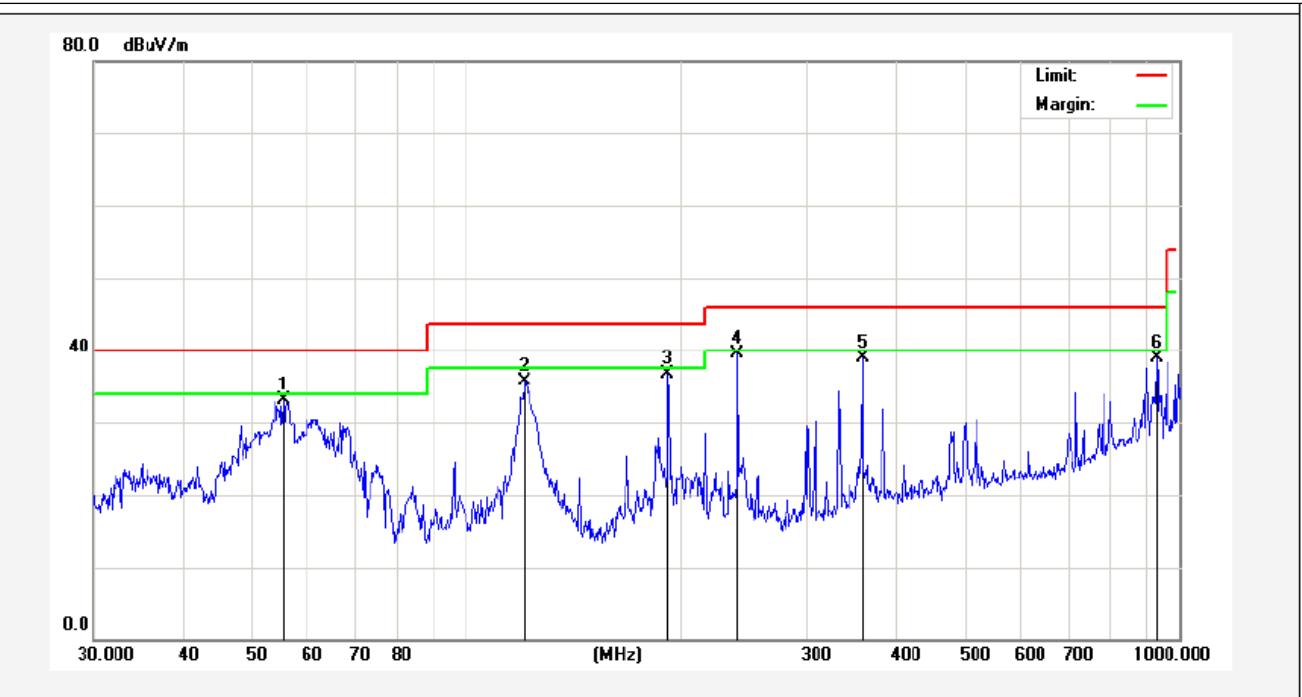
The test mode is tested in chamber and all the test results are listed in Section 3.7.

### 3.7. Radiated Emission Measurement Results

**PASS.**

The EUT was tested on (Charging to adapter, Communication, Camera Mode, WIFI Mode) modes, only the worst data of (Communication) are attached in the following pages.

Job No.:	AT1402641F	Polarization:	Horizontal							
Standard:	(RE)FCC PART15 B _3m	Power Source:	DC 5V							
Test item:	Radiation Test	Temp.(C)/Hum.(%RH):	24.3( C)/55%RH							
Mode:	Communication	Distance:	3m							
										
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	55.8046	48.55	-15.00	33.55	40.00	-6.45	peak			
2	60.9176	48.47	-15.77	32.70	40.00	-7.30	peak			
3	191.7450	53.81	-20.92	32.89	43.50	-10.61	peak			
4	239.9874	57.49	-18.09	39.40	46.00	-6.60	peak			
5	359.1859	52.46	-13.70	38.76	46.00	-7.24	peak			
6	962.1622	42.76	-3.77	38.99	54.00	-15.01	peak			

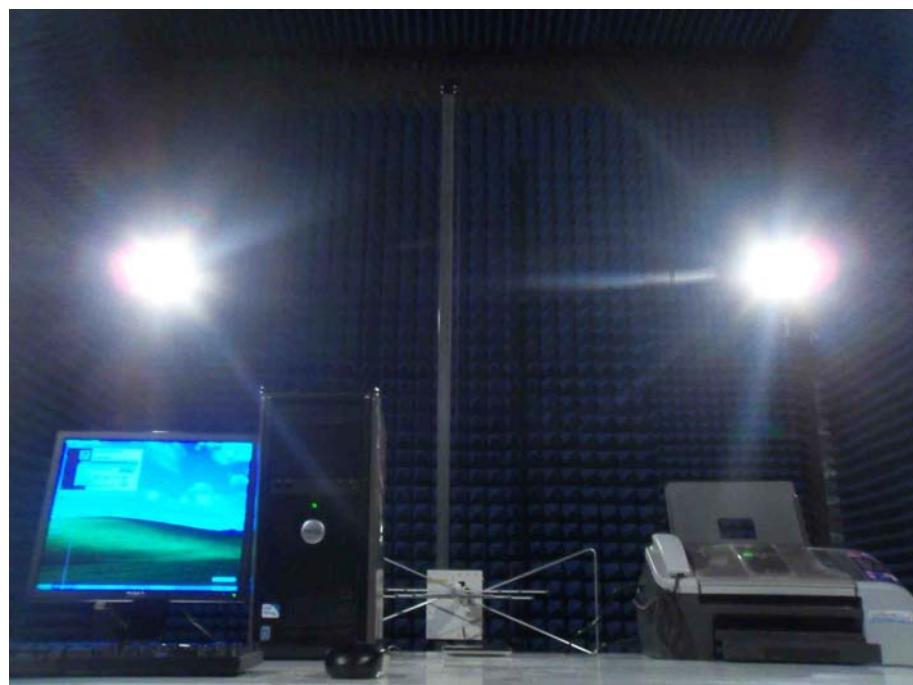
Job No.:	AT1402641F	Polarization:	Vertical							
Standard:	(RE)FCC PART15 B _3m	Power Source:	DC 5V							
Test item:	Radiation Test	Temp.(C)/Hum.(%RH):	24.3( C)/55%RH							
Mode:	Communication	Distance:	3m							
										
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	55.4147	48.16	-14.97	33.19	40.00	-6.81	peak			
2	120.6991	52.07	-16.43	35.64	43.50	-7.86	peak			
3	191.7450	52.70	-15.92	36.78	43.50	-6.72	peak			
4	239.9874	53.61	-14.09	39.52	46.00	-6.48	peak			
5	359.1859	51.65	-12.70	38.95	46.00	-7.05	peak			
6	929.0081	42.21	-3.30	38.91	46.00	-7.09	peak			

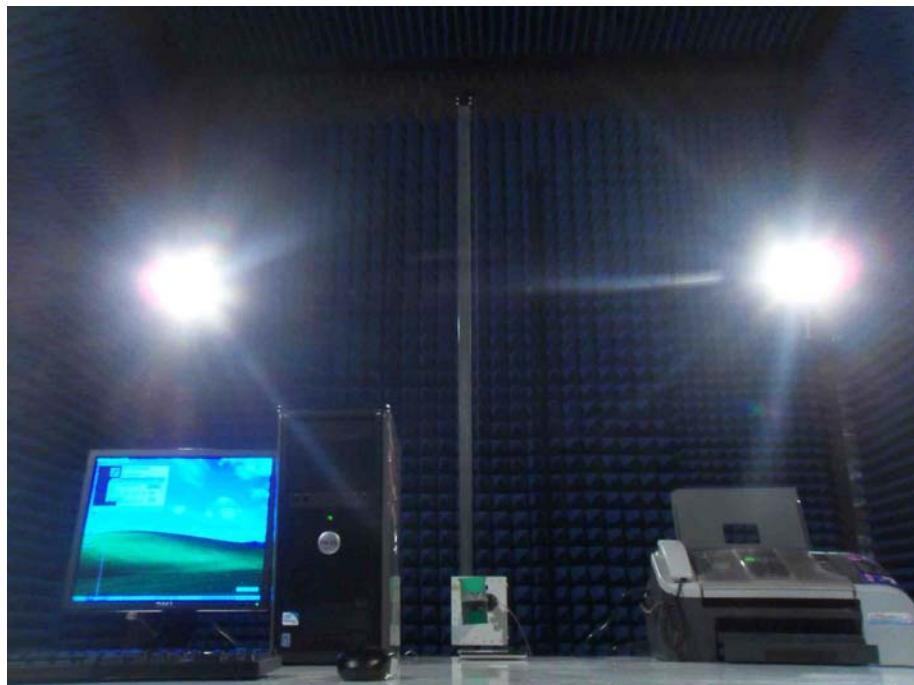
## 4. PHOTOGRAPH

### 4.1. Photo of Power Line Conducted Emission Test



### 4.2. Photo of Radiated Emission Test





## APPENDIX I (EXTERNAL PHOTOS)

Figure 1  
The EUT-Overall View



Figure 2  
The EUT- Front View



Figure 3  
The EUT- Back View



Figure 4  
The EUT- Side View



## APPENDIX II (INTERNAL PHOTOS)

Figure 5  
The EUT-Inside View



Figure 6  
The EUT-Inside View



Figure 7  
PCB of the EUT-Front View

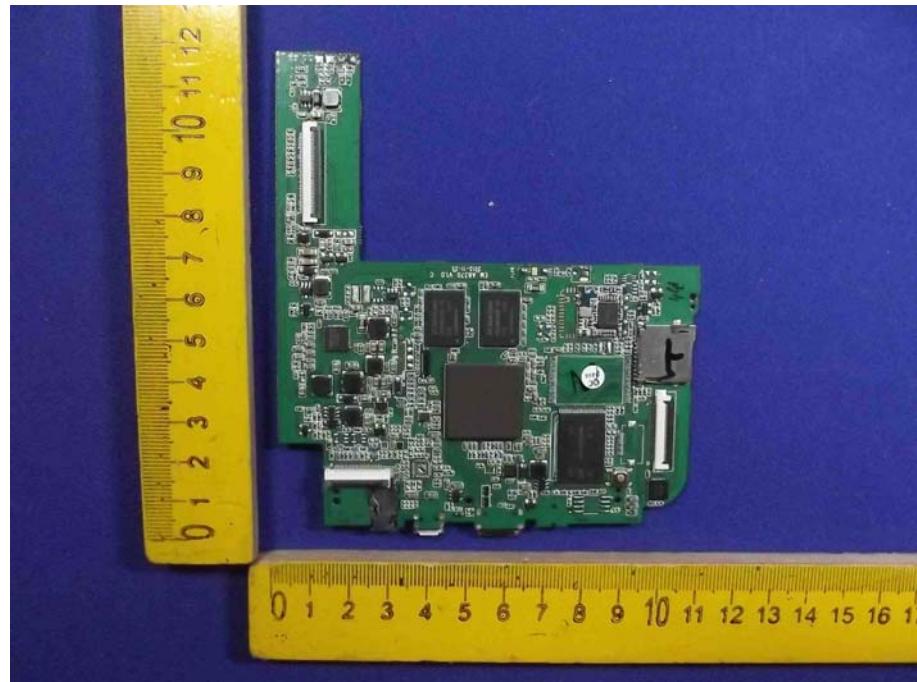


Figure 8  
PCB of the EUT-Back View

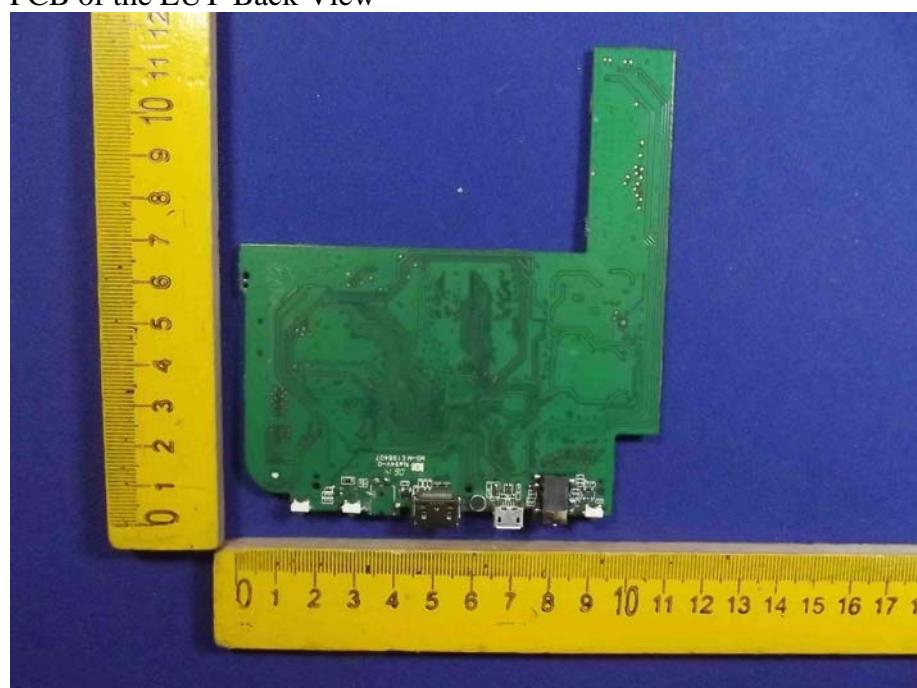


Figure 9  
PCB of the EUT-Front View

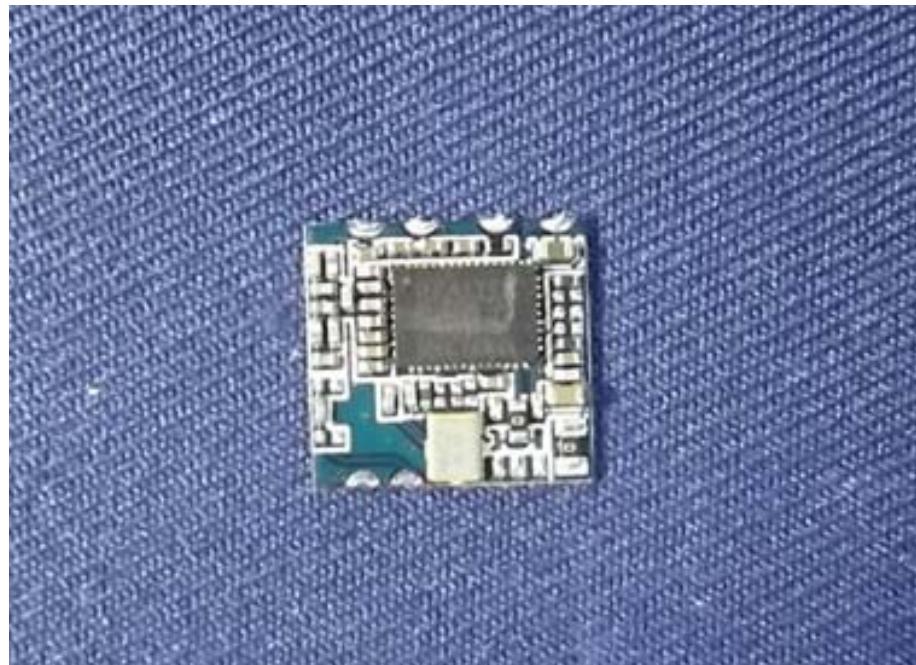


Figure 10  
PCB of the EUT-Back View

