



# FCC 15B TEST REPORT

No. I20Z61670-EMC01

for

**Lenovo (Shanghai) Electronics Technology Co., Ltd.**

**Portable Tablet Computer**

**Model Name: Lenovo TB-J606L**

**FCC ID: O57TBJ606L**

with

**Hardware Version: Lenovo TB-J606L**

**Software Version: TB-J606L\_RF01\_200908**

**Issued Date: 2020-11-24**

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## **REPORT HISTORY**

<b>Report Number</b>	<b>Revision</b>	<b>Description</b>	<b>Issue Date</b>
I20Z61670-EMC01	Rev.0	1 <sup>st</sup> edition	2020-11-24

## **CONTENTS**

<b>1. TEST LABORATORY.....</b>	<b>4</b>
<b>1.1. TESTING LOCATION.....</b>	<b>4</b>
<b>1.2. TESTING ENVIRONMENT.....</b>	<b>4</b>
<b>1.3. PROJECT DATA.....</b>	<b>4</b>
<b>1.4. SIGNATURE.....</b>	<b>4</b>
<b>2. CLIENT INFORMATION.....</b>	<b>5</b>
<b>2.1. APPLICANT INFORMATION.....</b>	<b>5</b>
<b>2.2. MANUFACTURER INFORMATION.....</b>	<b>5</b>
<b>3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE).....</b>	<b>6</b>
<b>3.1. ABOUT EUT.....</b>	<b>6</b>
<b>3.2. INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST.....</b>	<b>6</b>
<b>3.3. INTERNAL IDENTIFICATION OF AE USED DURING THE TEST.....</b>	<b>6</b>
<b>3.4. EUT SET-UPS.....</b>	<b>7</b>
<b>4. REFERENCE DOCUMENTS.....</b>	<b>8</b>
<b>4.1. REFERENCE DOCUMENTS FOR TESTING.....</b>	<b>8</b>
<b>5. LABORATORY ENVIRONMENT.....</b>	<b>9</b>
<b>6. SUMMARY OF TEST RESULTS.....</b>	<b>10</b>
<b>7. TEST EQUIPMENTS UTILIZED.....</b>	<b>11</b>
<b>ANNEX A: MEASUREMENT RESULTS.....</b>	<b>12</b>
<b>ANNEX B: PERSONS INVOLVED IN THIS TESTING.....</b>	<b>30</b>

## 1. Test Laboratory

### 1.1. Testing Location

#### Location 1: CTTL(huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing,  
P. R. China 100191

### 1.2. Testing Environment

Normal Temperature: 15-35°C

Relative Humidity: 20-75%

### 1.3. Project data

Testing Start Date: 2020-09-28

Testing End Date: 2020-11-21

### 1.4. Signature



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An Hui


(Prepared this test report)



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Zhang Ying

(Reviewed this test report)



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Zhang Xia

Deputy Director of the laboratory

(Approved this test report)



## **2. Client Information**

### **2.1. Applicant Information**

Company Name: Lenovo (Shanghai) Electronics Technology Co., Ltd.  
Address /Post: Section 304-305, Building No. 4, # 222, Meiyue Road, China  
(Shanghai) Pilot Free Trade Zone  
City: Shanghai  
Postal Code: /  
Country: China  
Telephone: +86 18116118237

### **2.2. Manufacturer Information**

Company Name: Lenovo PC HK Limited  
Address /Post: 23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay,  
Hong Kong, P.R.China  
City: Hong Kong  
Postal Code: /  
Country: China  
Telephone: +86 18116118237

### **3. Equipment Under Test (EUT) and Ancillary Equipment (AE)**

#### **3.1. About EUT**

Description	Portable Tablet Computer
Model Name	Lenovo TB-J606L
FCC ID	O57TBJ606L

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of CTTL, Telecommunication Technology Labs, Academy of Telecommunication Research, MIIT.

#### **3.2. Internal Identification of EUT used during the test**

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1	863025050006637	Lenovo TB-J606L	TB-J606L_RF01_200908
EUT2	863025050004871	Lenovo TB-J606L	TB-J606L_RF01_200908
EUT3	863025050003998	Lenovo TB-J606L	TB-J606L_RF01_200908

\*EUT ID: is used to identify the test sample in the lab internally.

#### **3.3. Internal Identification of AE used during the test**

AE ID*	Description	SN	Remarks
AE1-1	Charger	/	/
AE1-2	Charger	/	/
AE8	USB Cable	/	/
AE15	USB Cable	/	/
AE9	Battery	/	/
AE10	Battery	/	/
AE11	Headset	/	/

##### AE1-1

Model	MC-201
Manufacturer	Acbel
Length of cable	/

##### AE1-2

Model	MC-201
Manufacturer	Chenyang
Length of cable	/

##### AE8

Model	S50B-05200100
Manufacturer	Saibao
Length of cable	/

**AE15**

Model	L50B-05200100
Manufacturer	Liqi
Length of cable	/

**AE9**

Model	L20D2P32
Manufacturer	SCUD
Capacitance	7500mAh
Nominal voltage	3.86V

**AE10**

Model	L20D2P32
Manufacturer	Sunwoda
Capacitance	7500mAh
Nominal voltage	3.86V

**AE11**

Model	Headset
Manufacturer	/
Length of cable	/

\*AE ID: is used to identify the test sample in the lab internally.

### **3.4. EUT set-ups**

<b>EUT set-up No.</b>	<b>Combination of EUT and AE</b>	<b>Remarks</b>
Set.1	EUT1 + AE1-1+ AE8 + AE9	Charger1+MP3+GNSS+GSM850 idle
Set.2	EUT1 + AE1-2+ AE8 + AE9	Charger2 + MP4 + WCDMA 850 idle
Set.3	EUT1 + AE8 + AE9	USB + Back Camera + LTE Band 5 idle
Set.4	EUT1 + AE9 + AE11	FM + Front Camera + LTE Band 19 idle
Set.5	EUT2 + AE1-1+ AE8 + AE9	Charger1 + MP3 + GSM 850 idle
Set.6	EUT3 + AE1-1+ AE8 + AE10	Charger1 + MP3 + GSM 850 idle

**Note:**

The device contains receivers which tune and operate between 30MHz-960MHz in the following bands: GSM850, WCDMA850, LTE B5, LTE B19.

## 4. Reference Documents

### 4.1. Reference Documents for testing

The following documents listed in this section are referred for testing.

<b>Reference</b>	<b>Title</b>	<b>Version</b>
FCC Part 15, Subpart B	Radio frequency devices - Unintentional Radiators	2019
ANSI C63.4	American National Standard for Methods of Measurement of Radio- Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2014

Note: The test methods have no deviation with standards.



## 5. LABORATORY ENVIRONMENT

**Semi-anechoic chamber SAC-1** (23 meters × 17meters × 10meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 15 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 M
Ground system resistance	< 4
Normalised site attenuation (NSA)	< ±4 dB, 10 m distance
Site voltage standing-wave ratio ( $S_{VSWR}$ )	Between 0 and 6 dB, from 1GHz to 6GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 MHz

**Shielded room** did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz, >60dB; 1MHz—1000MHz, >90dB.
Electrical insulation	> 2 M
Ground system resistance	< 4

## 6. SUMMARY OF TEST RESULTS

Abbreviations used in this clause:		
Verdict Column	P	Pass
	NA	Not applicable
	F	Fail
	BR	Re-use test data from basic model report.

Items	Test Name	Clause in FCC rules	Section in this report	Verdict	Test Location
1	Radiated Emission	15.109(a)	A.1	P	CTTL(huayuan North Road)
2	Conducted Emission	15.107(a)	A.2	P	CTTL(huayuan North Road)

## 7. Test Equipments Utilized

NO.	Description	TYPE	SERIES NUMBER	MANUFACTURE	CAL DUE DATE	CALIBRATION INTERVAL
1	LISN	ENV216	101200	Rohde & Schwarz	1 year	2021-05-19
2	Test Receiver	ESCI 7	100344	Rohde & Schwarz	1 Year	2021-02-26
3	Test Receiver	ESU26	100235	Rohde & Schwarz	1 Year	2021-03-03
4	BiLog Antenna	VULB9163	9163-1223	Schwarzbeck	1 Year	2021-03-18
5	Dual-Ridge Waveguide Horn Antenna	3115	6914	ETS-Lindgren	1 Year	2021-01-14
6	Universal Radio Communication Tester	CMW500	150344	R&S	1 Year	2020-11-17
7	PC	M4000e-17	M706GWXD	Lenovo	N/A	N/A
8	Printer	P1606dn	VNC3L52122	HP	N/A	N/A

Note: The Universal Radio Communication Tester with series number 150344 was used before Cal. Due Date.

Test Item	Test Software and Version	Software Vendor
Radiated Continuous Emission	EMC32 V9.01.0	R&S
Conducted Emission	EMC32 V8.52.0	R&S

## **ANNEX A: MEASUREMENT RESULTS**

### **A.1 Radiated Emission**

#### **Reference**

FCC: CFR Part 15.109(a).

#### **A.1.1 Method of measurement**

The field strength of radiated emissions from the unintentional radiator (charging mode and FM mode of MS) at distances of 10 meters (for 30MHz-1GHz) and 3 meters (for above 1GHz) is tested. Tested in accordance with the procedures of ANSI C63.4 – 2014, section 8.3.

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3/10 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

#### **A.1.2 EUT Operating Mode:**

The MS is operating in the charging mode. During the test MS is connected to a charger in the case of charging mode.

The EUT was tested while operating in licensed band Rx mode. All licensed band receivers that tune in the range of 30MHz-960MHz, as listed in Section 2.2, are investigated. Only the worst case emissions are reported.

All equipment is placed on the test table top and arranged in a typical configuration in accordance with ANSI C63.4-2014 and manipulated to obtain worst case emissions.

#### **A.1.3 Measurement Limit**

Frequency range (MHz)	Field strength limit ( $\mu\text{V}/\text{m}$ )		
	Quasi-peak	Average	Peak
30-88	100		
88-216	150		
216-960	200		
960-1000	500		
>1000		500	5000

Note: the above limit is for 3 meters test distance. 10 meters' limit is got by converting.

#### **A.1.4 Test Condition**

Frequency range (MHz)	RBW/VBW	Sweep Time (s)	Detector
30-1000	120kHz (IF Bandwidth)	5	Peak/Quasi-peak
Above 1000	1MHz/1MHz	15	Peak, Average

### A.1.5 Measurement Results

A "reference path loss" is established and the  $A_{Rpl}$  is the attenuation of "reference path loss". It includes the antenna factor of receive antenna and the path loss.

The measurement results are obtained as described below:

$$\text{Result} = P_{\text{Mea}} + A_{\text{Rpl}} = P_{\text{Mea}} + G_A + G_{\text{PL}}$$

Where

$G_A$ : Antenna factor of receive antenna

$G_{\text{PL}}$ : Path Loss

$P_{\text{Mea}}$ : Measurement result on receiver.

Measurement uncertainty (worst case): 30MHz-1GHz: 5.16dB, 1GHz-18GHz: 5.44dB,  $k=2$ .

#### Measurement results for Set.1:

##### EUT1 Charger1+MP3+GNSS + GSM850 idle Mode/QP detector

Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
39.843000	18.50	30.00	11.50	189.0	V	4.0
47.945000	23.94	30.00	6.06	103.0	V	120.0
72.001000	23.38	30.00	6.62	118.0	V	26.0
78.468000	9.48	30.00	20.52	291.0	V	75.0
257.761000	12.50	36.00	23.52	120.0	V	81.0
617.949000	18.10	36.00	17.92	206.0	V	240.0

##### EUT1 Charger1+MP3+GNSS + GSM850 idle Mode /Average detector

Frequency (MHz)	Result (dB $\mu$ V/m)	$G_{\text{PL}}$ (dB)	$G_A$ (dB/m)	$P_{\text{Mea}}$ (dB $\mu$ V)	Polarity	Limit (dB $\mu$ V/m)	Margin (dB)
17990.933	48.7	-17.7	45.6	20.800	H	54	5.3
17955.233	48.6	-17.7	45.6	20.700	H	54	5.4
17988.667	48.4	-17.7	45.6	20.500	V	54	5.6
17992.067	48.3	-17.7	45.6	20.400	H	54	5.7
17998.300	48.3	-17.7	45.6	20.400	H	54	5.7
17973.933	48.2	-17.7	45.6	20.300	H	54	5.8

##### EUT1 Charger1+MP3+GNSS + GSM850 idle Mode /Peak detector

Frequency (MHz)	Result (dB $\mu$ V/m)	$G_{\text{PL}}$ (dB)	$G_A$ (dB/m)	$P_{\text{Mea}}$ (dB $\mu$ V)	Polarity	Limit (dB $\mu$ V/m)	Margin (dB)
17973.933	58.1	-17.7	45.6	30.200	H	74	15.9
17971.667	57.9	-17.7	45.6	30.000	H	74	16.1
18000.000	57.7	-45.6	44.5	58.766	V	74	16.3
17998.867	57.7	-17.7	45.6	29.800	H	74	16.3
17997.167	57.6	-17.7	45.6	29.700	H	74	16.4
17884.967	57.5	-18.5	45.6	30.400	H	74	16.5

**Measurement results for Set.2:**
**EUT1 Charger2 + MP4 + WCDMA 850 idle Mode/QP detector**

Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
48.005000	26.61	30.00	3.39	187.0	V	210.0
72.001000	25.17	30.00	4.83	277.0	V	30.0
77.188000	8.28	30.00	21.72	210.0	V	150.0
96.020000	14.85	33.50	18.67	103.0	V	30.0
137.458000	12.94	33.50	20.58	107.0	V	86.0
234.453000	16.81	36.00	19.21	102.0	V	266.0

**EUT1 Charger2 + MP4 + WCDMA 850 idle Mode/Average detector**

Frequency (MHz)	Result (dB $\mu$ V/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	P <sub>Mea</sub> (dB $\mu$ V)	Polarity	Limit (dB $\mu$ V/m)	Margin (dB)
17981.867	48.8	-17.7	45.6	20.900	H	54	5.2
17993.200	48.8	-17.7	45.6	20.900	H	54	5.2
17990.933	48.6	-17.7	45.6	20.700	V	54	5.4
17992.067	48.3	-17.7	45.6	20.400	H	54	5.7
17962.600	48.3	-17.7	45.6	20.400	H	54	5.7
17998.300	48.1	-17.7	45.6	20.200	H	54	5.9

**EUT1 Charger2 + MP4 + WCDMA 850 idle Mode/Peak detector**

Frequency (MHz)	Result (dB $\mu$ V/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	P <sub>Mea</sub> (dB $\mu$ V)	Polarity	Limit (dB $\mu$ V/m)	Margin (dB)
17993.200	58.0	-17.7	45.6	30.100	H	74	16
17991.500	57.8	-17.7	45.6	29.900	H	74	16.2
17924.633	57.6	-17.7	45.6	29.700	V	74	16.4
17981.867	57.5	-17.7	45.6	29.600	H	74	16.5
17992.633	57.3	-17.7	45.6	29.400	H	74	16.7
17972.800	57.2	-17.7	45.6	29.300	H	74	16.8

**Measurement results for Set.3:**
**EUT1 USB + Back Camera + LTE Band 5 idle Mode/QP detector**

Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
43.871000	11.60	30.00	18.40	125.0	V	69.0
48.042000	22.27	30.00	7.73	186.0	V	30.0
100.034000	11.27	30.00	18.73	125.0	V	98.0
142.423000	18.00	30.00	12.00	107.0	V	169.0
165.994000	20.81	30.00	9.19	103.0	V	210.0
308.099000	26.51	37.00	10.49	101.0	V	102.0

**EUT1 USB + Back Camera + LTE Band 5 idle Mode /Average detector**

Frequency (MHz)	Result (dB $\mu$ V/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	P <sub>Mea</sub> (dB $\mu$ V)	Polarity	Limit (dB $\mu$ V/m)	Margin (dB)
18000.000	48.6	-45.6	44.5	59.266	H	54	5.4
17958.067	48.6	-17.7	45.6	30.000	H	54	5.4
17976.767	48.5	-17.7	45.6	30.000	V	54	5.5
17947.300	48.5	-17.7	45.6	29.300	H	54	5.5
17964.300	48.4	-17.7	45.6	29.100	H	54	5.6
17971.100	48.3	-17.7	45.6	28.900	H	54	5.7

**EUT1 USB + Back Camera + LTE Band 5 idle Mode /Peak detector**

Frequency (MHz)	Result (dB $\mu$ V/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	P <sub>Mea</sub> (dB $\mu$ V)	Polarity	Limit (dB $\mu$ V/m)	Margin (dB)
17982.4	58.2	-17.7	45.6	20.700	H	74	15.8
17870.2	57.9	-18.5	45.6	21.500	H	74	16.1
17992.6	57.9	-17.7	45.6	20.600	V	74	16.1
17983.6	57.2	-17.7	45.6	20.600	H	74	16.8
17993.2	57.0	-17.7	45.6	20.500	H	74	17
17997.7	56.8	-17.7	45.6	20.400	H	74	17.2

**Measurement results for Set.4:**
**EUT1 FM + Front Camera + LTE Band 19 idle Mode/QP detector**

Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
47.982000	16.58	30.00	13.42	103.0	V	68.0
72.001000	11.42	30.00	18.58	210.0	V	94.0
99.997000	13.81	33.50	19.71	325.0	V	259.0
120.002000	9.64	33.50	23.88	279.0	V	240.0
143.975000	18.02	33.50	15.50	104.0	V	-30.0
300.011000	16.63	36.00	19.39	114.0	V	150.0

**EUT1 FM + Front Camera + LTE Band 19 idle Mode /Average detector**

Frequency (MHz)	Result (dB $\mu$ V/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	P <sub>Mea</sub> (dB $\mu$ V)	Polarity	Limit (dB $\mu$ V/m)	Margin (dB)
17974.500	49.5	-17.7	45.6	21.600	H	54	4.5
17955.233	48.7	-17.7	45.6	20.800	H	54	5.3
17998.300	48.6	-17.7	45.6	20.700	V	54	5.4
17936.533	48.6	-17.7	45.6	20.700	H	54	5.4
17980.167	48.6	-17.7	45.6	20.700	H	54	5.4
17968.267	48.4	-17.7	45.6	20.500	H	54	5.6

**EUT1 FM + Front Camera + LTE Band 19 Mode /Peak detector**

Frequency (MHz)	Result (dB $\mu$ V/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	P <sub>Mea</sub> (dB $\mu$ V)	Polarity	Limit (dB $\mu$ V/m)	Margin (dB)
17963.733	57.8	-17.7	45.6	29.900	H	74	16.2
17999.433	57.7	-17.7	45.6	29.800	H	74	16.3
17990.367	57.5	-17.7	45.6	29.600	V	74	16.5
17994.900	57.1	-17.7	45.6	29.200	H	74	16.9
17993.767	57.1	-17.7	45.6	29.200	H	74	16.9
17967.700	57.0	-17.7	45.6	29.100	H	74	17



**Measurement results for Set.5:**
**EUT2 Charger1 + MP3 + GSM 850 idle Mode QP/detector**

Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
40.361000	20.01	30.00	9.99	1000.0	120.000	218.0
47.982000	23.65	30.00	6.35	1000.0	120.000	275.0
77.447000	17.02	30.00	12.98	1000.0	120.000	199.0
100.561000	10.28	33.50	23.24	1000.0	120.000	115.0
119.979000	12.46	33.50	21.06	1000.0	120.000	104.0
237.012000	17.47	36.00	18.55	1000.0	120.000	125.0

**EUT2 Charger1 + MP3 + GSM 850 idle Mode /Average detector**

Frequency (MHz)	Result (dB $\mu$ V/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	P <sub>Mea</sub> (dB $\mu$ V)	Polarity	Limit (dB $\mu$ V/m)	Margin (dB)
17955.233	48.5	-17.7	45.6	20.600	H	54	5.5
17966.567	48.4	-17.7	45.6	20.500	H	54	5.6
17992.633	48.4	-17.7	45.6	20.500	V	54	5.6
17750.100	48.3	-18.5	45.6	21.200	H	54	5.7
17886.100	48.2	-18.5	45.6	21.100	H	54	5.8
17975.067	48.2	-17.7	45.6	20.300	H	54	5.8

**EUT2 Charger1 + MP3 + GSM 850 idle Mode /Peak detector**

Frequency (MHz)	Result (dB $\mu$ V/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	P <sub>Mea</sub> (dB $\mu$ V)	Polarity	Limit (dB $\mu$ V/m)	Margin (dB)
17992.067	57.7	-17.7	45.6	29.800	H	74	16.3
17903.667	57.7	-18.5	45.6	30.600	H	74	16.3
17933.133	57.6	-17.7	45.6	29.700	V	74	16.4
17781.833	56.9	-18.5	45.6	29.800	H	74	17.1
17670.200	56.5	-18.9	45.6	29.800	H	74	17.5
17864.000	56.5	-18.5	45.6	29.400	H	74	17.5

**Measurement results for Set.6:**
**EUT3 Charger1 + MP3 + GSM 850 idle Mode QP/detector**

Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
39.977000	18.73	30.00	11.27	225.0	V	171.0
48.042000	27.94	30.00	2.06	325.0	V	64.0
72.024000	22.57	30.00	7.43	202.0	V	120.0
99.974000	13.69	33.50	19.83	100.0	V	61.0
191.990000	10.39	33.50	23.13	107.0	V	196.0
235.451000	16.81	36.00	19.21	113.0	V	-16.0

**EUT3 Charger1 + MP3 + GSM 850 Mode /Average detector**

Frequency (MHz)	Result (dB $\mu$ V/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	P <sub>Mea</sub> (dB $\mu$ V)	Polarity	Limit (dB $\mu$ V/m)	Margin (dB)
17904.800	48.7	-18.5	45.6	21.600	H	54	5.3
17940.500	48.5	-17.7	45.6	20.600	H	54	5.5
17978.467	48.2	-17.7	45.6	20.300	V	54	5.8
17975.633	48.2	-17.7	45.6	20.300	H	54	5.8
17873.633	48.2	-18.5	45.6	21.100	H	54	5.8
17898.000	48.1	-18.5	45.6	21.000	H	54	5.9

**EUT3 Charger1 + MP3 + GSM 850 idle Mode /Peak detector**

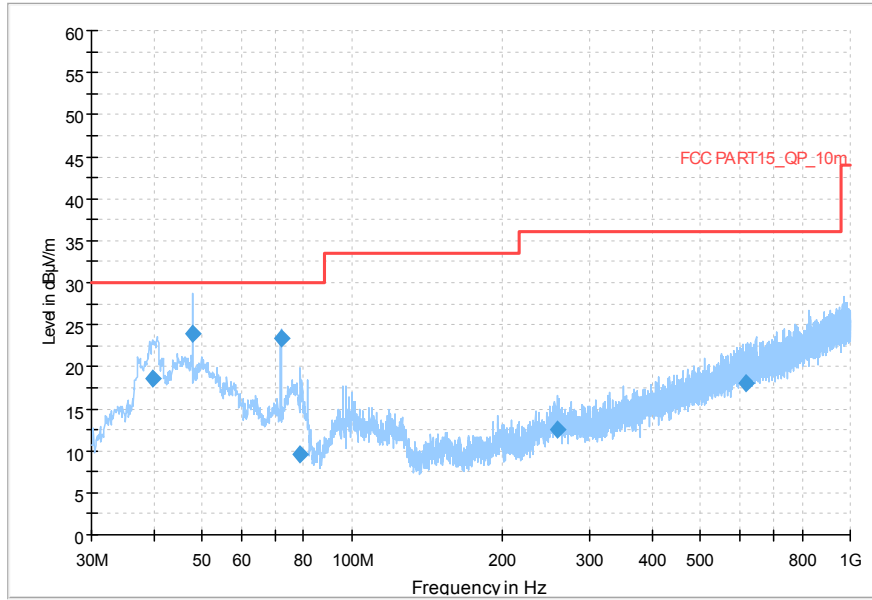
Frequency (MHz)	Result (dB $\mu$ V/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	P <sub>Mea</sub> (dB $\mu$ V)	Polarity	Limit (dB $\mu$ V/m)	Margin (dB)
17483.200	57.6	-19.2	41.5	35.300	H	74	16.4
18000.000	57.3	-45.6	44.5	58.366	H	74	16.7
17994.900	57.2	-17.7	45.6	29.300	V	74	16.8
17910.467	57.0	-18.5	45.6	29.900	H	74	17
17995.467	56.9	-17.7	45.6	29.000	H	74	17.1
17947.300	56.8	-17.7	45.6	28.900	H	74	17.2

Sample calculation: Peak detector, 17947.300MHz

Result = P<sub>Mea</sub> (28.9dB $\mu$ V) + G<sub>A</sub> (45.6dB/m) + G<sub>PL</sub> (-17.7 dB) = 56.8 dB $\mu$ V/m

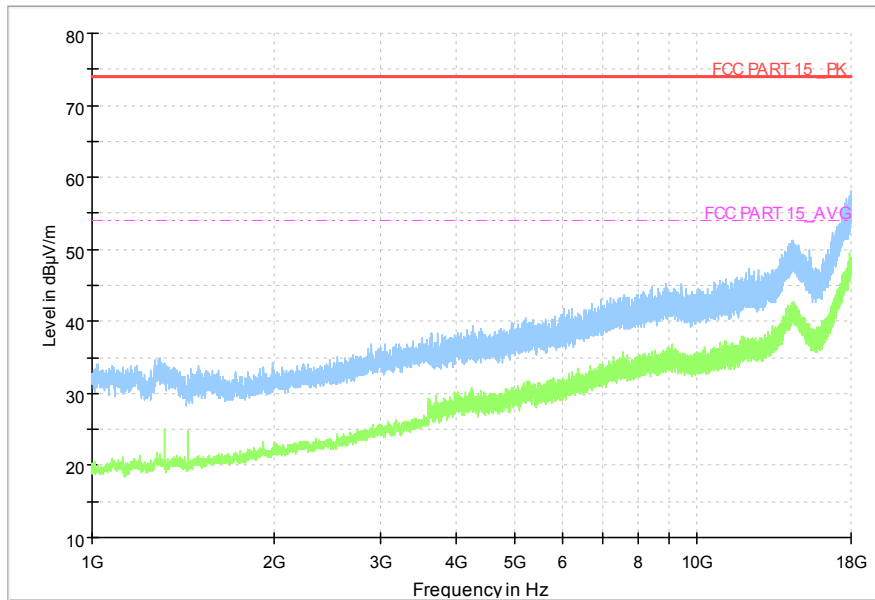
**EUT1 Charger1+MP3+GNSS+GSM850 IDLE,Set.1**

Full Spectrum



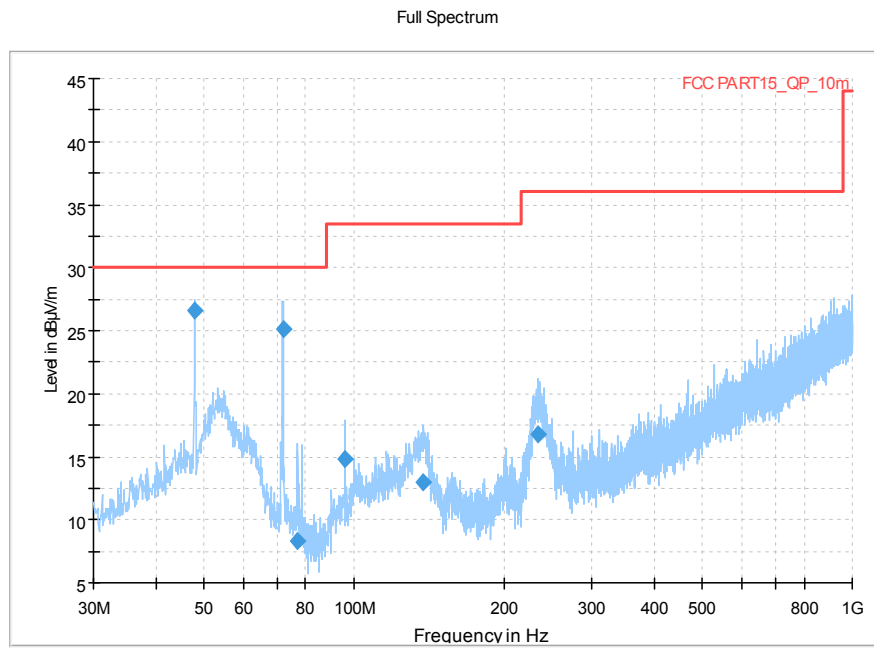
**Figure A.1 Radiated Emission from 30MHz to 1GHz**

Full Spectrum

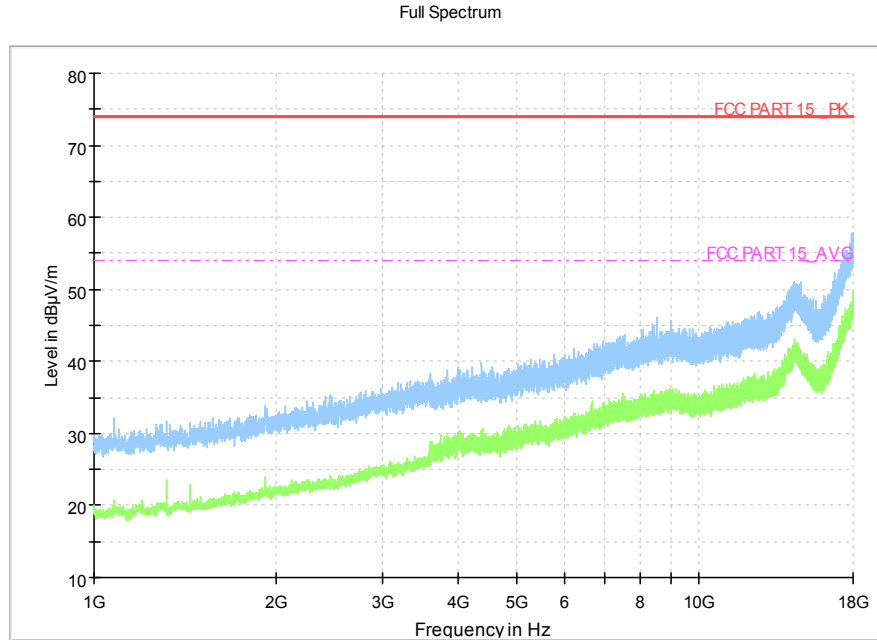


**Figure A.2 Radiated Emission from 1GHz to 18GHz**

**EUT1 Charger2 + MP4 + WCDMA 850 IDLE,Set.2**

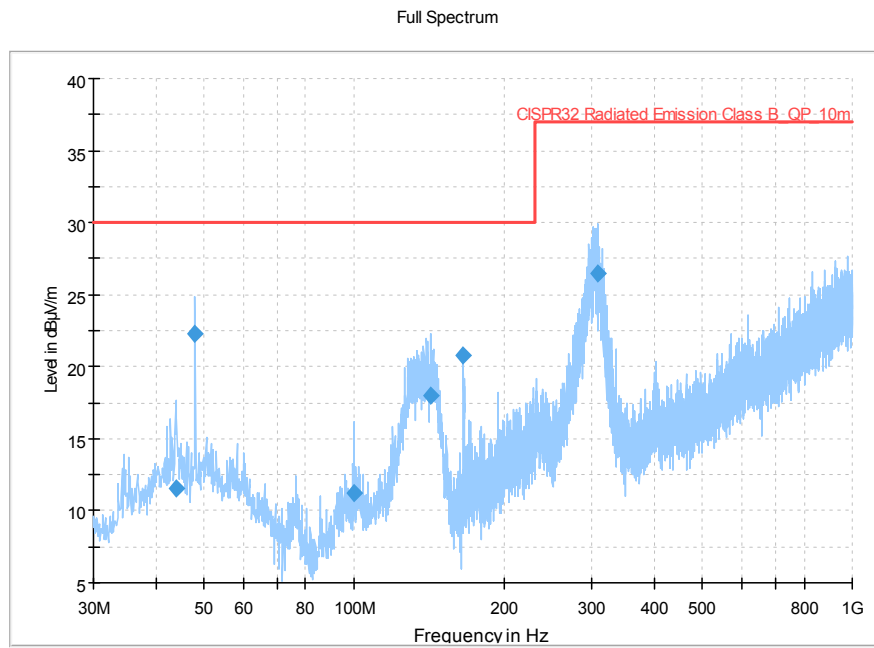


**Figure A.3 Radiated Emission from 30MHz to 1GHz**

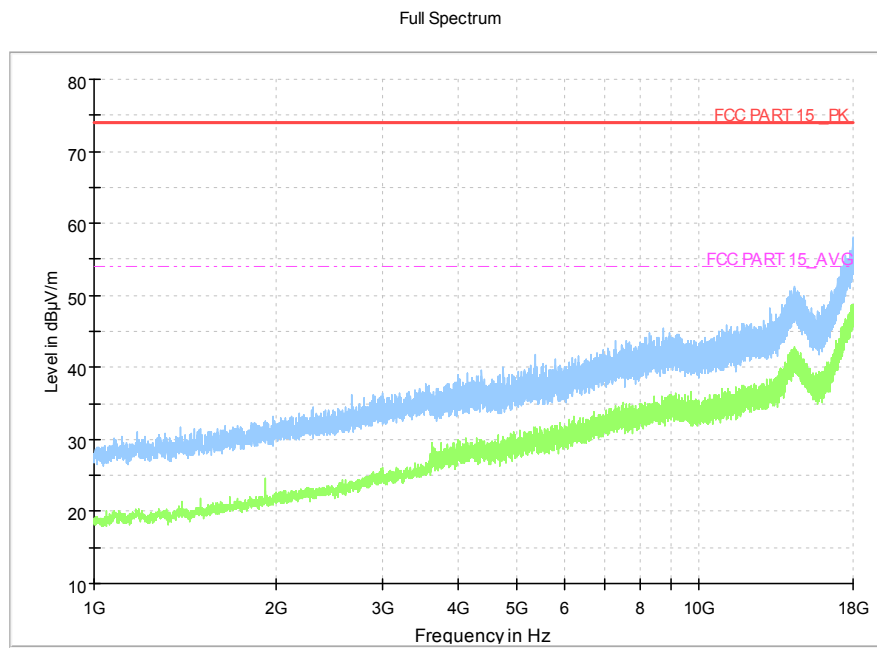


**Figure A.4 Radiated Emission from 1GHz to 18GHz**

**EUT1 USB + Back Camera + LTE Band 5 IDLE,Set.3**

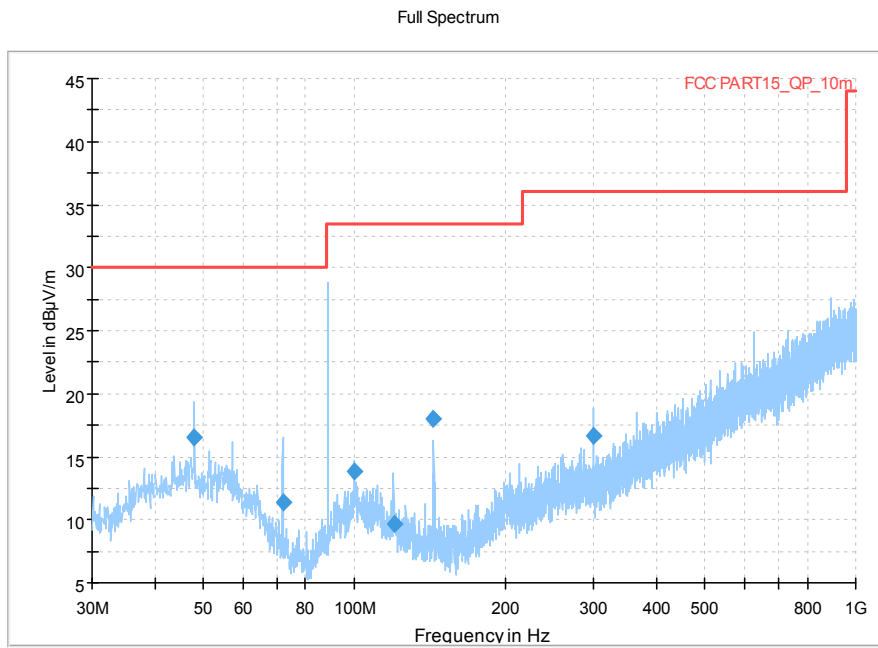


**Figure A.5 Radiated Emission from 30MHz to 1GHz**

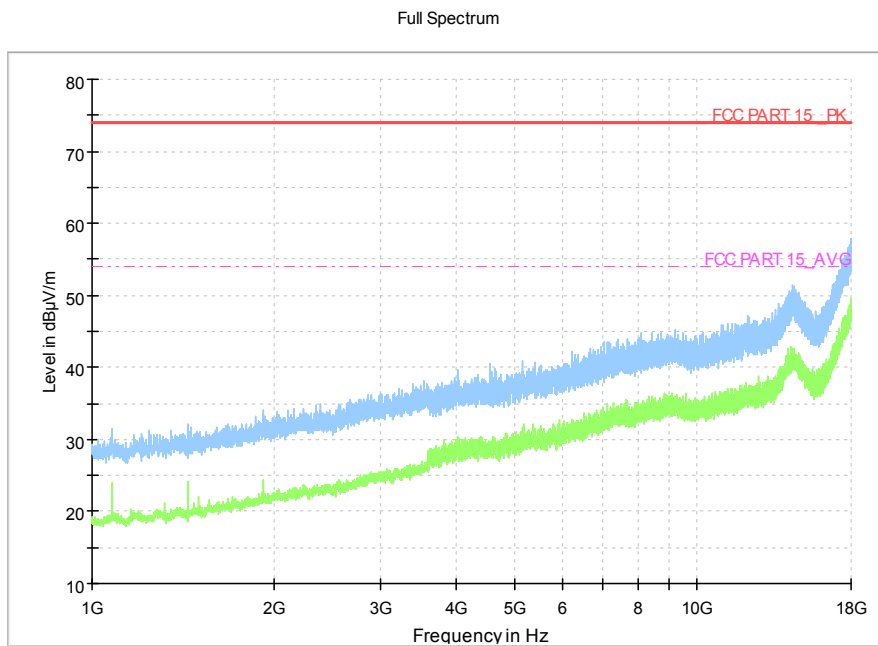


**Figure A.6 Radiated Emission from 1GHz to 18GHz**

**EUT1 FM + Front Camera + LTE Band 19 IDLE,Set.4**

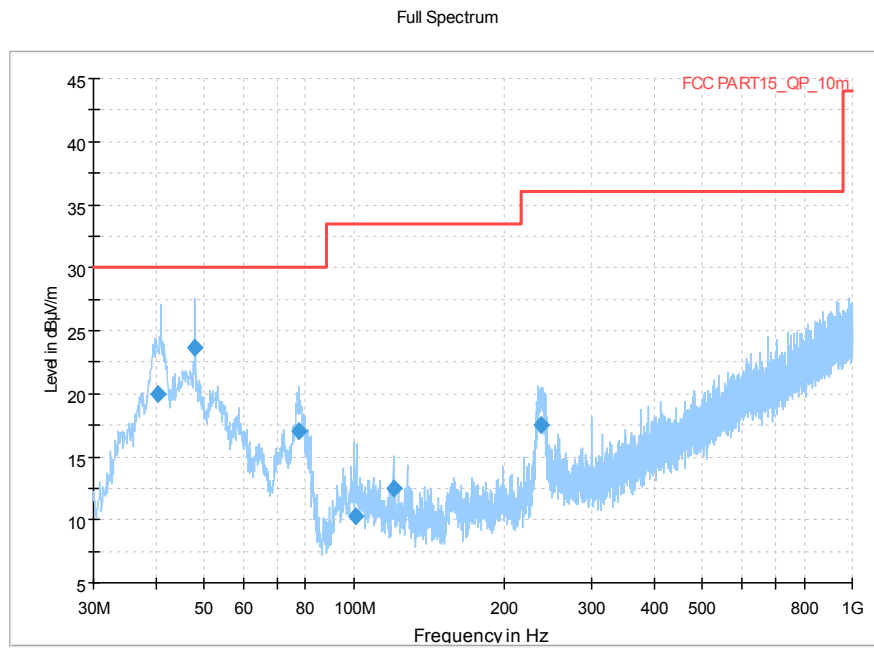


**Figure A.7 Radiated Emission from 30MHz to 1GHz**

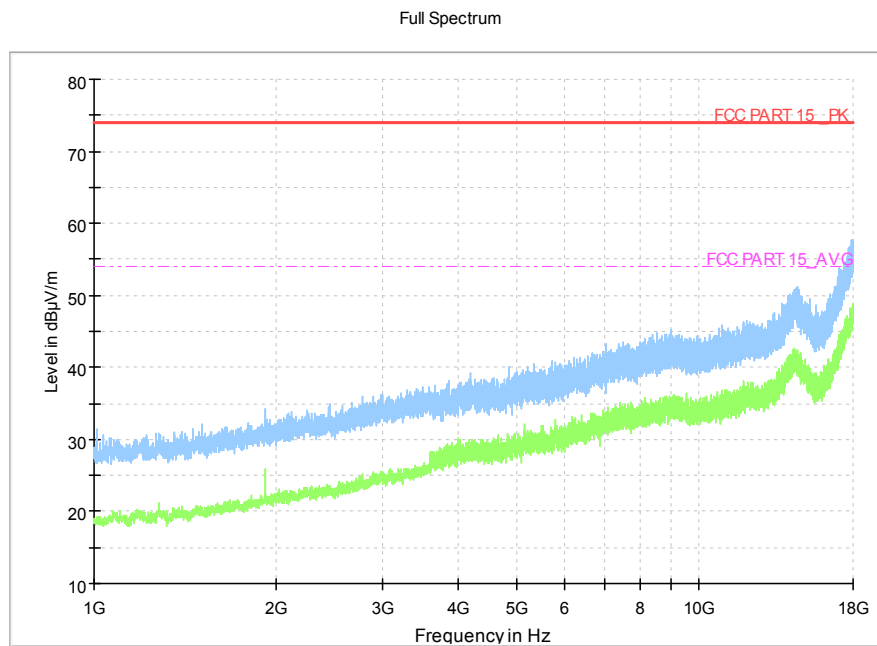


**Figure A.8 Radiated Emission from 1GHz to 18GHz**

**EUT2 Charger1 + MP3 + GSM 850 IDLE ,Set.5**

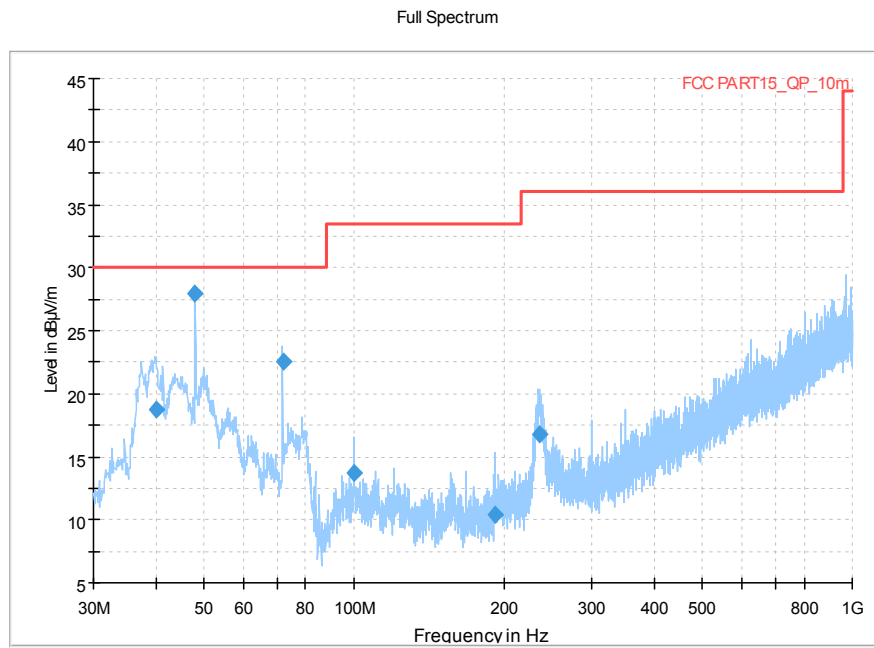


**Figure A.9 Radiated Emission from 30MHz to 1GHz**

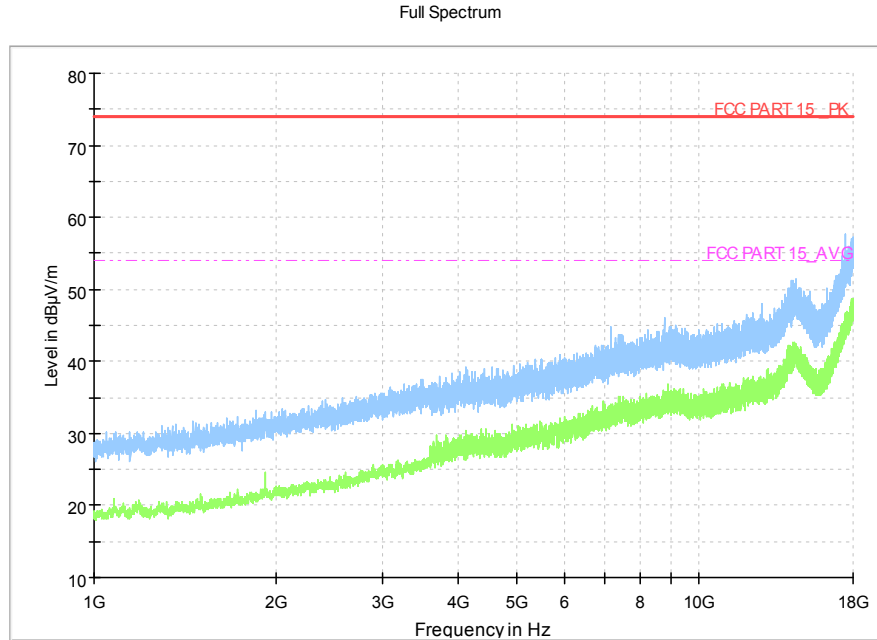


**Figure A.10 Radiated Emission from 1GHz to 18GHz**

**EUT3 Charger1 + MP3 + GSM 850 IDLE, Set.6**



**Figure A.11 Radiated Emission from 30MHz to 1GHz**



**Figure A.12 Radiated Emission from 1GHz to 18GHz**



## A.2 Conducted Emission

### Reference

FCC: CFR Part 15.107(a).

### A.2.1 Method of measurement

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits. Tested in accordance with the procedures of ANSI C63.4 – 2014, section 7.3.

### A.2.2 EUT Operating Mode

The MS is operating in the charging mode. During the test MS is connected to a charger in the case of charging mode.

### A.2.3 Measurement Limit

Frequency of emission (MHz)	Conducted limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

\*Decreases with the logarithm of the frequency

### A.2.4 Test Condition in charging mode

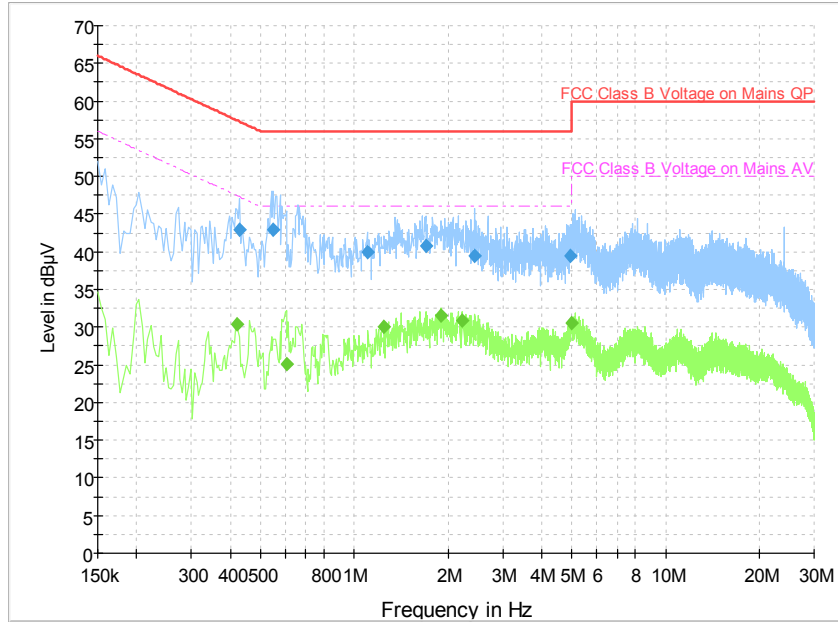
Voltage (V)	Frequency (Hz)
120	60

RBW/IF bandwidth	Sweep Time(s)
9kHz	1

### A.2.5 Measurement Results

Measurement uncertainty:  $U=3.08\text{dB}$ ,  $k=2$ .

#### EUT1 Charger1+MP3+GNSS+GSM850IDLE, Set.1



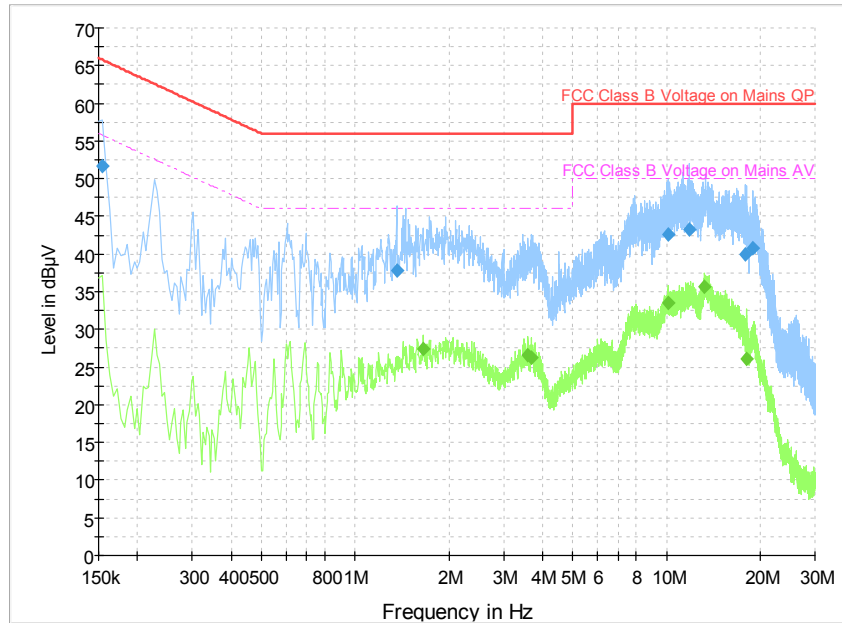
**Figure A.13 Conducted Emission**

#### Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.429000	42.9	GND	N	10.0	14.4
0.550500	42.9	GND	N	10.0	13.1
1.099500	39.9	GND	L1	10.0	16.1
1.693500	40.9	GND	L1	10.0	15.1
2.431500	39.4	GND	L1	10.0	16.6
4.960500	39.4	GND	L1	10.2	16.6

#### Final Result 2

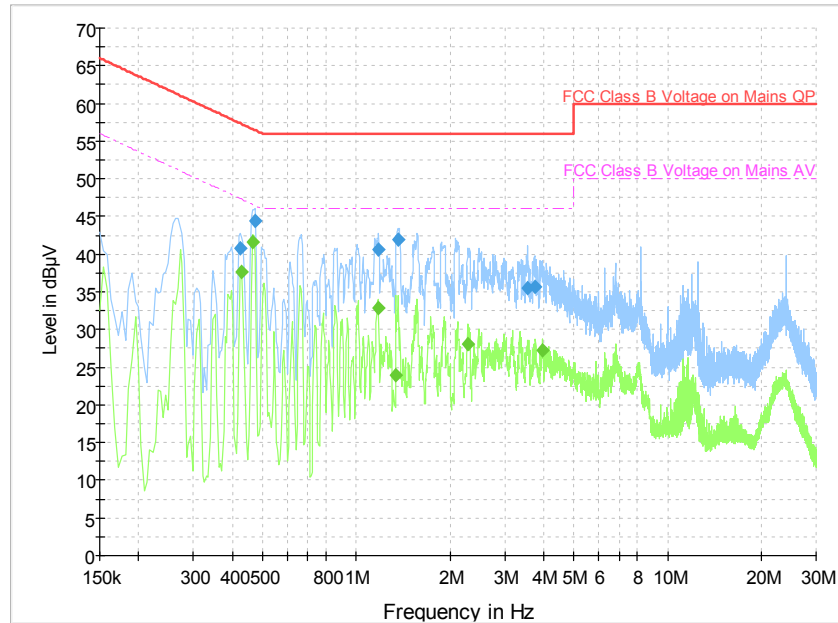
Frequency (MHz)	Average (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.420000	30.4	GND	N	10.0	17.1
0.604500	25.2	GND	L1	10.0	20.8
1.248000	30.0	GND	L1	10.0	16.0
1.896000	31.5	GND	L1	10.0	14.5
2.215500	30.8	GND	L1	10.0	15.2
4.996500	30.6	GND	L1	10.2	15.4

**EUT1 Charger2 + MP4 + WCDMA 850 IDLE, Set.2**

**Figure A.14 Conducted Emission**
**Final Result 1**

Frequency (MHz)	Average (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.154500	51.8	GND	L1	10.0	14.0
1.360500	37.9	GND	L1	10.0	18.1
10.126500	42.7	GND	L1	10.4	17.3
11.823000	43.3	GND	L1	10.6	16.7
17.938500	39.9	GND	L1	10.9	20.1
18.987000	40.7	GND	L1	11.0	19.3

**Final Result 2**

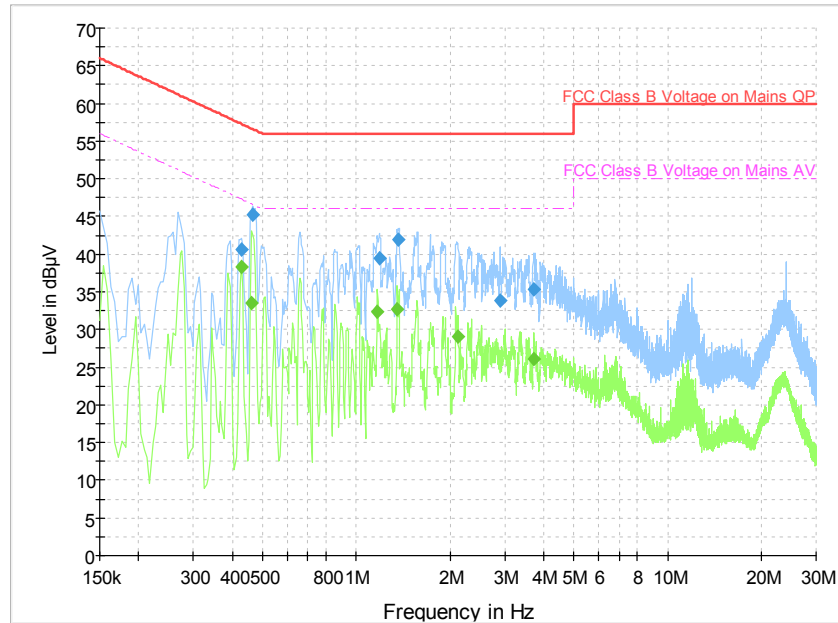
Frequency (MHz)	Average (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
1.653000	27.5	GND	L1	10.0	18.5
3.597000	26.7	GND	L1	10.1	19.3
3.696000	26.2	GND	L1	10.1	19.8
10.104000	33.5	GND	L1	10.4	16.5
13.290000	35.6	GND	L1	10.7	14.4
18.091500	26.0	GND	L1	10.9	24.0

**EUT2 Charger1 + MP3 + GSM 850 IDLE ,Set.5**

**Figure A.15 Conducted Emission**
**Final Result 1**

Frequency (MHz)	Average (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.424500	40.9	L1	19.6	16.5	57.4
0.474000	44.5	L1	19.6	12.0	56.4
1.180500	40.6	N	19.6	15.4	56.0
1.365000	41.9	L1	19.6	14.1	56.0
3.547500	35.6	N	19.6	20.4	56.0
3.736500	35.7	N	19.6	20.3	56.0

**Final Result 2**

Frequency (MHz)	Average (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.429000	37.6	N	19.6	9.7	47.3
0.465000	41.5	N	19.6	5.1	46.6
1.176000	32.8	N	19.6	13.2	46.0
1.338000	24.0	N	19.6	22.0	46.0
2.287500	28.0	L1	19.6	18.0	46.0
3.970500	27.2	N	19.7	18.8	46.0

**EUT3 Charger1 + MP3 + GSM 850 IDLE, Set.6**

**Figure A.16 Conducted Emission**
**Final Result 1**

Frequency (MHz)	Average (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.429000	40.6	L1	19.6	16.7	57.3
0.465000	45.2	N	19.6	11.4	56.6
1.185000	39.5	L1	19.6	16.5	56.0
1.369500	42.0	L1	19.6	14.0	56.0
2.908500	33.9	N	19.6	22.1	56.0
3.718500	35.3	N	19.6	20.7	56.0

**Final Result 2**

Frequency (MHz)	Average (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.429000	38.3	L1	19.6	9.0	47.3
0.460500	33.4	L1	19.6	13.2	46.7
1.171500	32.3	N	19.6	13.7	46.0
1.356000	32.7	L1	19.6	13.3	46.0
2.125500	29.1	N	19.5	16.9	46.0
3.714000	26.0	N	19.6	20.0	46.0



**ANNEX B: Persons involved in this testing**

Test Item	Tester
Conducted Continuous Emission	Wang Huan
Radiated Continuous Emission	Yan Hanchen

**\*\*\*END OF REPORT\*\*\***