



# Part 15B TEST REPORT

**No.I19Z62195-EMC01**

**for**

**Xiaomi Communications Co., Ltd.**

**Mobile Phone**

**Model Name: M2001J2G/M2001J1G**

**FCC ID: 2AFZZJAG**

**with**

**Hardware Version: P2.2**

**Software Version: MIUI 11**

**Issued Date: 2020-02-22**

**Note:**

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

**Test Laboratory:**

**CTTL-Telecommunication Technology Labs, CAICT**

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## **REPORT HISTORY**

<b>Report Number</b>	<b>Revision</b>	<b>Description</b>	<b>Issue Date</b>
I19Z62195-EMC01	Rev.0	1st edition	2020-02-22

Note: the latest revision of the test report supersedes all previous version.

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## **1. Test Laboratory**

### **1.1. Introduction & Accreditation**

**Telecommunication Technology Labs, CAICT** is an ISO/IEC 17025:2005 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0, and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (ISED#: 24849). The detail accreditation scope can be found on NVLAP website.

### **1.2. Testing Location**

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

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

**1.3. Testing Environment**

Normal Temperature: 15-35°C  
Extreme Temperature: -10/+55°C  
Relative Humidity: 20-75%

**1.4. Project data**

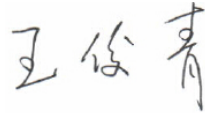
Testing Start Date: 2020-01-15  
Testing End Date: 2020-01-16

**1.5. Signature**

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Zhang Ying

(Prepared this test report)



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Wang Junqing

(Reviewed this test report)



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Liu Baodian

Deputy Director of the laboratory

(Approved this test report)



## **2. Client Information**

### **2.1. Applicant Information**

Company Name: Xiaomi Communications Co., Ltd.  
Address /Post: #019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District,  
Beijing, China, 100085  
City: /  
Postal Code: 100085  
Country: China  
Contact Person jiaoxiaogang  
Contact Email mi-compliance@xiaomi.com  
Telephone: 010-60606666-8088  
Fax: /

### **2.2. Manufacturer Information**

Company Name: Xiaomi Communications Co., Ltd.  
Address /Post: #019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District,  
Beijing, China, 100085  
City: /  
Postal Code: 100085  
Country: China  
Contact Person jiaoxiaogang  
Contact Email mi-compliance@xiaomi.com  
Telephone: 010-60606666-8088  
Fax: /

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

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

Description	Mobile Phone
Model name/HVIN	M2001J2G/M2001J1G
FCC ID	2AFZZJAG
Nominal Voltage	3.85V(M2001J2G)\3.87V(M2001J1G)

Note: Photographs of EUT are shown in ANNEX A of this test report.

#### **3.2. Internal Identification of EUT**

<b>EUT ID*</b>	<b>SN or IMEI</b>	<b>HW Version</b>	<b>SW Version</b>
EUT3 (M2001J2G)	860211040055024	P2.2	MIUI 11
EUT4 (M2001J1G)	861543040046515	P2.2	MIUI 11

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

#### **3.3. Internal Identification of AE**

<b>AE ID*</b>	<b>Description</b>	<b>SN</b>	<b>Remarks</b>
AE1	battery	/	/
AE3	Travel charger	/	/
AE6	USB Cable	/	/
AE7	USB Cable	/	/
AE11	battery		
AE13	Travel charger		
AE16	USB Cable		

##### **AE1**

Model	BM4N
Manufacturer	/
Capacitance	4680 mAh
Nominal voltage	3.85V

##### **AE3**

Model	MDY-09-EL
Manufacturer	Xiaomi Communications Co., Ltd.
Length of cable	/

##### **AE6**

Model	L63312
Manufacturer	LUXSHARE Precision Industry Co., Ltd.
Length of cable	/

##### **AE7**

Model	K63312
Manufacturer	SU ZHOU KELI SCIENCE&TECHNOLOGY DEVELOPMENT CO.,LTD.
Length of cable	/
AE11	
Model	BM4M
Manufacturer	/
Capacitance	4400 mAh
Nominal voltage	3.87V
AE13	
Model	MDY-11-EC
Manufacturer	Huizhou BYD Electronic Co.,Ltd.
Length of cable	/
AE16	
Model	L63512
Manufacturer	LUXSHARE Precision Industry Co., Ltd.
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	EUT3 + AE1 + AE3 + AE6	M2001J2G Charger
Set.2	EUT3 + AE1 + AE6 + PC	M2001J2G USB
Set.3	EUT4 + AE11 + AE13 + AE16	M2001J1G Charger
Set.4	EUT4 + AE11 + AE16 + PC	M2001J1G USB

## 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	2018
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



## 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, 10m distance, from 30 to 1000 Hz
Site voltage standing-wave ratio ( $S_{VSWR}$ )	Between 0 and 6 dB, from 1GHz to 18GHz
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 MΩ
Ground system resistance	< 4 Ω

## 6. SUMMARY OF TEST RESULTS

Abbreviations used in this clause:		
Verdict Column	P	Pass
	NA	Not applicable
	F	Fail

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

## 7. Test Equipments Utilized

NO.	Description	TYPE	SERIES NUMBER	MANUFACTURE	CAL DUE DATE	CALIBRATION INTERVAL
1	Test Receiver	ESU26	100235	R&S	2020-02-27	1 year
2	EMI Antenna	VULB9163	9163-1222	Schwarzbeck	2020-03-14	1 Year
3	EMI Antenna	3115	00167250	ETS-Lindgren	2020-05-21	1 year
4	Test Receiver	ESCI 7	100344	R&S	2020-03-14	1 year
5	LISN	ENV216	101200	Rohde & Schwarz	2020-04-27	1 Year
14	PC	OPTIPLEX 380	2X1YV2X	DELL	N/A	N/A
15	Printer	P1606dn	VNC3L52122	HP	N/A	N/A

Test Item	Test Software and Version	Software Vendor
Radiated Continuous Emission	EMC32 V9.01.00	R&S
Conducted Emission	EMC32 V8.51	R&S

## 8. Measurement Uncertainty

CTTL(huayuan North Road)

Test Item	Measurement uncertainty
Radiated Emission	Measurement uncertainty (worst case): $U = 4.3$ dB, $k=2$ .
Conducted Emission	Measurement uncertainty: $U = 2.9$ dB, $k=2$ .

## **ANNEX A: Detailed Test 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 (USB mode of MS and camera and charging 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 USB mode and camera and charging mode. During the test MS is connected to a PC via a USB cable in the case of USB mode and is connected to a charger in the case of charging mode. The model of the PC is DELL OPTIPLEX 380, and the serial number of the PC is 2X1YV2X. The software is used to let the PC keep on copying data to MS, reading and erasing the data after copy action was finished.

Note: I/O information: Printer – USB, Mouse – PS/2, Keyboard – USB.

#### **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 results for Set.1 M2001J2G:

##### Front camera and charging Mode/Average detector

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Antenna Pol. (H/V)
17971.100	33.3	-25.5	43.4	15.402	H
17992.067	33.2	-25.5	43.4	15.302	H
17984.700	33.2	-25.5	43.4	15.302	V
17950.700	33.2	-25.5	43.4	15.302	H
17949.000	33.2	-25.5	43.4	15.302	H
17884.967	33.1	-25.7	43.4	15.442	H

##### Front camera and charging Mode /Peak detector

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Antenna Pol. (H/V)
17947.300	45.0	-25.5	43.4	27.102	H
17970.533	44.8	-25.5	43.4	26.902	H
17850.967	44.7	-25.7	43.4	27.042	V
17935.400	44.7	-25.5	43.4	26.802	H
17896.300	44.7	-25.7	43.4	27.042	H
17640.167	44.6	-26.9	43.4	28.052	H

**Measurement results for Set.1 M2001J2G:**
**Rear camera and charging Mode /Average detector**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Antenna Pol. (H/V)
17990.367	33.5	-25.5	43.4	15.602	H
17971.100	33.4	-25.5	43.4	15.502	H
17955.800	33.3	-25.5	43.4	15.402	V
17970.533	33.3	-25.5	43.4	15.402	H
17962.033	33.3	-25.5	43.4	15.402	H
17975.633	33.2	-25.5	43.4	15.302	H

**Rear camera and charging Mode /Peak detector**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Antenna Pol. (H/V)
17997.167	44.9	-25.5	43.4	27.002	H
17882.133	44.5	-25.7	43.4	26.842	H
17937.100	44.4	-25.5	43.4	26.502	V
17964.300	44.4	-25.5	43.4	26.502	H
17794.867	44.3	-25.7	43.4	26.642	H
17782.967	44.3	-25.7	43.4	26.642	H

**Measurement results for Set.2 M2001J2G:**
**USB Mode/Average detector**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Antenna Pol. (H/V)
2600.267	35.6	-38.7	28.4	45.858	H
17985.833	33.9	-25.5	43.4	16.002	H
2599.700	33.9	-38.7	28.4	44.158	V
17977.333	33.7	-25.5	43.4	15.802	H
17951.833	33.7	-25.5	43.4	15.802	H
17976.200	33.6	-25.5	43.4	15.702	H

**USB Mode/ Peak detector**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Antenna Pol. (H/V)
17971.100	46.2	-25.5	43.4	28.302	H
17813.567	45.3	-25.7	43.4	27.642	H
17963.733	45.0	-25.5	43.4	27.102	V
17989.233	44.9	-25.5	43.4	27.002	H
17928.600	44.9	-25.5	43.4	27.002	H
17966.000	44.8	-25.5	43.4	26.902	H



**Measurement results for Set.3 M2001J1G:**
**Front camera and charging Mode/Average detector**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Antenna Pol. (H/V)
17984.700	33.3	-17.7	45.6	5.400	H
17998.300	33.2	-17.7	45.6	5.300	H
17975.633	33.1	-17.7	45.6	5.200	V
17981.300	33.0	-17.7	45.6	5.100	H
17969.400	32.9	-17.7	45.6	5.000	H
17998.867	32.9	-17.7	45.6	5.000	H

**Front camera and charging Mode /Peak detector**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Antenna Pol. (H/V)
17683.233	44.5	-18.9	45.6	17.800	H
17928.033	44.4	-17.7	45.6	16.500	H
17910.467	44.2	-18.5	45.6	17.100	V
17987.533	44.0	-17.7	45.6	16.100	H
17900.267	44.0	-18.5	45.6	16.900	H
17917.267	44.0	-17.7	45.6	16.100	H

**Measurement results for Set.3 M2001J1G:**
**Rear camera and charging Mode /Average detector**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Antenna Pol. (H/V)
17980.733	33.1	-17.7	45.6	5.200	H
17989.800	33.0	-17.7	45.6	5.100	H
17970.533	33.0	-17.7	45.6	5.100	V
17939.933	32.9	-17.7	45.6	5.000	H
17993.200	32.9	-17.7	45.6	5.000	H
17962.033	32.9	-17.7	45.6	5.000	H

**Rear camera and charging Mode /Peak detector**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Antenna Pol. (H/V)
17948.433	44.7	-17.7	45.6	16.800	H
17949.000	44.5	-17.7	45.6	16.600	H
17987.533	44.5	-17.7	45.6	16.600	V
17983.567	44.4	-17.7	45.6	16.500	H
17979.033	44.4	-17.7	45.6	16.500	H
17929.733	44.4	-17.7	45.6	16.500	H

**Measurement results for Set.4 M2001J1G:**
**USB Mode/Average detector**

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Antenna Pol. (H/V)
6052.400	36.8	-33.6	35.2	35.200	H
6052.967	36.7	-33.6	35.2	35.100	H
17964.300	33.0	-17.7	45.6	5.100	V
17959.200	32.9	-17.7	45.6	5.000	H
17977.333	32.9	-17.7	45.6	5.000	H
17929.733	32.9	-17.7	45.6	5.000	H

**USB Mode/ Peak detector**

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Antenna Pol. (H/V)
17837.933	45.0	-18.5	45.6	17.900	H
1210.233	45.0	-41.2	24.1	62.100	H
1210.800	44.7	-41.2	24.1	61.800	V
17946.167	44.2	-17.7	45.6	16.300	H
17887.800	44.1	-18.5	45.6	17.000	H
17883.267	44.0	-18.5	45.6	16.900	H

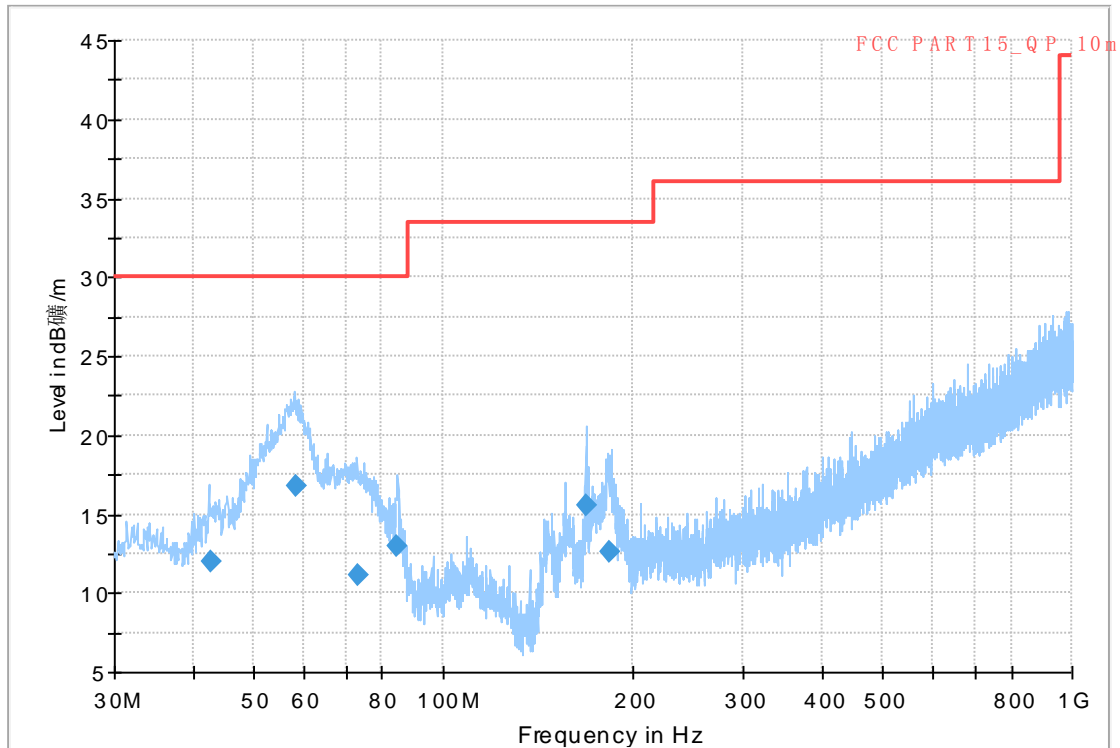
Sample: 17837.933MHz

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

$$\text{Result}(45.0\text{dB}\mu\text{V}/\text{m}) = P_{\text{Mea}}(17.90\text{dB}\mu\text{V}/\text{m}) + G_{\text{A}}45.6 (\text{dB}\mu\text{V}/\text{m}) + G_{\text{PL}}(-18.5\text{dB}\mu\text{V}/\text{m})$$

**Front camera and charging Mode, Set.1 M2001J2G**

Full Spectrum


**Fig A.1 Radiated Emission from 30MHz to 1GHz**
**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
42.679000	11.99	30.00	18.01	1000.0	120.000	225.0	V	295.0
58.310000	16.80	30.00	13.20	1000.0	120.000	282.0	V	94.0
73.451000	11.18	30.00	18.82	1000.0	120.000	183.0	V	300.0
84.191000	12.94	30.00	17.06	1000.0	120.000	125.0	V	210.0
168.692000	15.59	33.50	17.93	1000.0	120.000	325.0	V	8.0
184.392000	12.61	33.50	20.91	1000.0	120.000	125.0	V	6.0

Full Spectrum

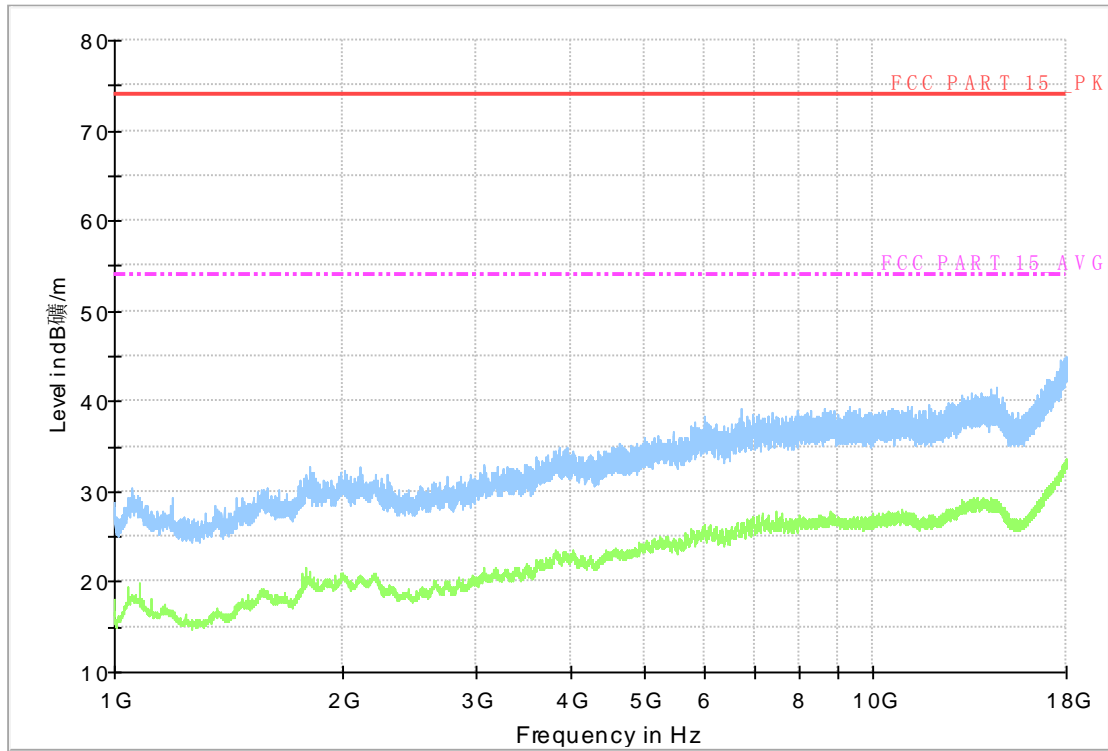
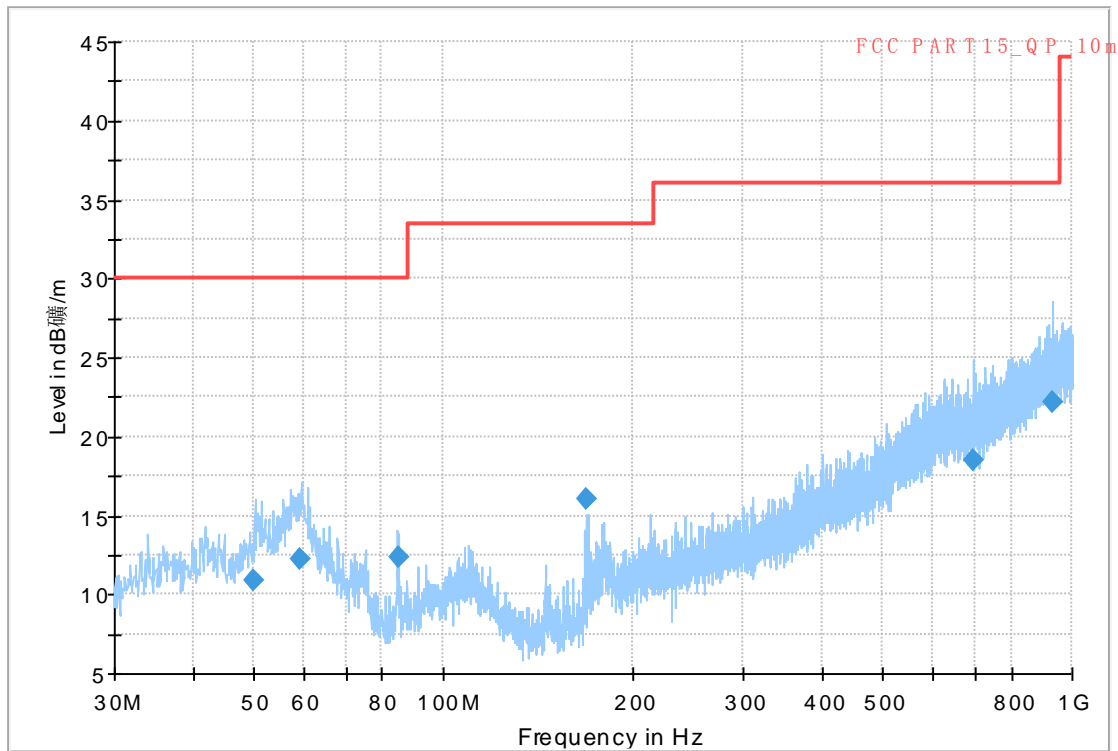


Fig A.2 Radiated Emission from 1GHz to 18GHz

**Rear camera and charging Mode, Set.1 M2001J2G**

Full Spectrum


**Fig A.3 Radiated Emission from 30MHz to 1GHz**
**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
50.056000	10.90	30.00	19.10	1000.0	120.000	106.0	V	188.0
59.068000	12.24	30.00	17.76	1000.0	120.000	102.0	V	7.0
84.731000	12.36	30.00	17.64	1000.0	120.000	217.0	V	210.0
169.514000	16.08	33.50	17.44	1000.0	120.000	107.0	V	30.0
695.050000	18.48	36.00	17.54	1000.0	120.000	225.0	V	99.0
930.931000	22.23	36.00	13.79	1000.0	120.000	125.0	V	153.0

Full Spectrum

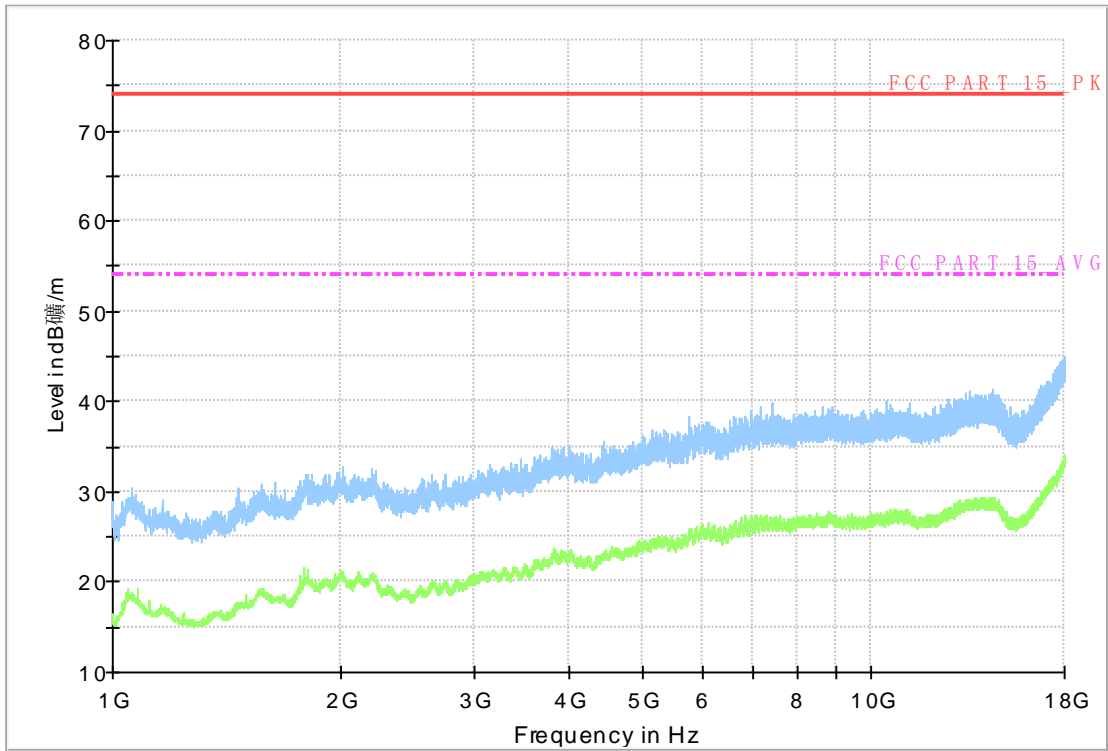


Fig A.4 Radiated Emission from 1GHz to 18GHz

## USB Mode, Set.2 M2001J2G

## Full Spectrum

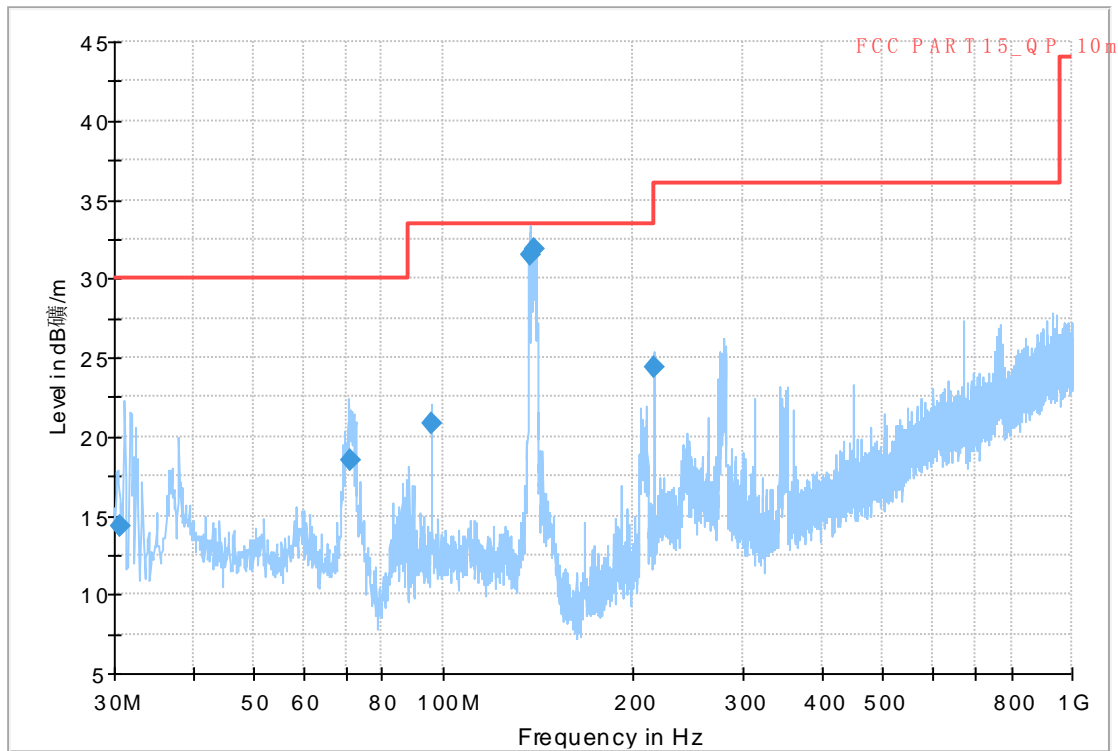


Fig A.5 Radiated Emission from 30MHz to 1GHz

## Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
30.744000	14.29	30.00	15.71	1000.0	120.000	102.0	V	273.0
70.994000	18.52	30.00	11.48	1000.0	120.000	225.0	V	268.0
96.020000	20.88	33.50	12.64	1000.0	120.000	202.0	V	77.0
137.130000	31.49	33.50	2.03	1000.0	120.000	107.0	V	165.0
140.040000	31.90	33.50	1.62	1000.0	120.000	120.0	V	170.0
216.046000	24.40	36.00	11.62	1000.0	120.000	120.0	V	178.0



Full Spectrum

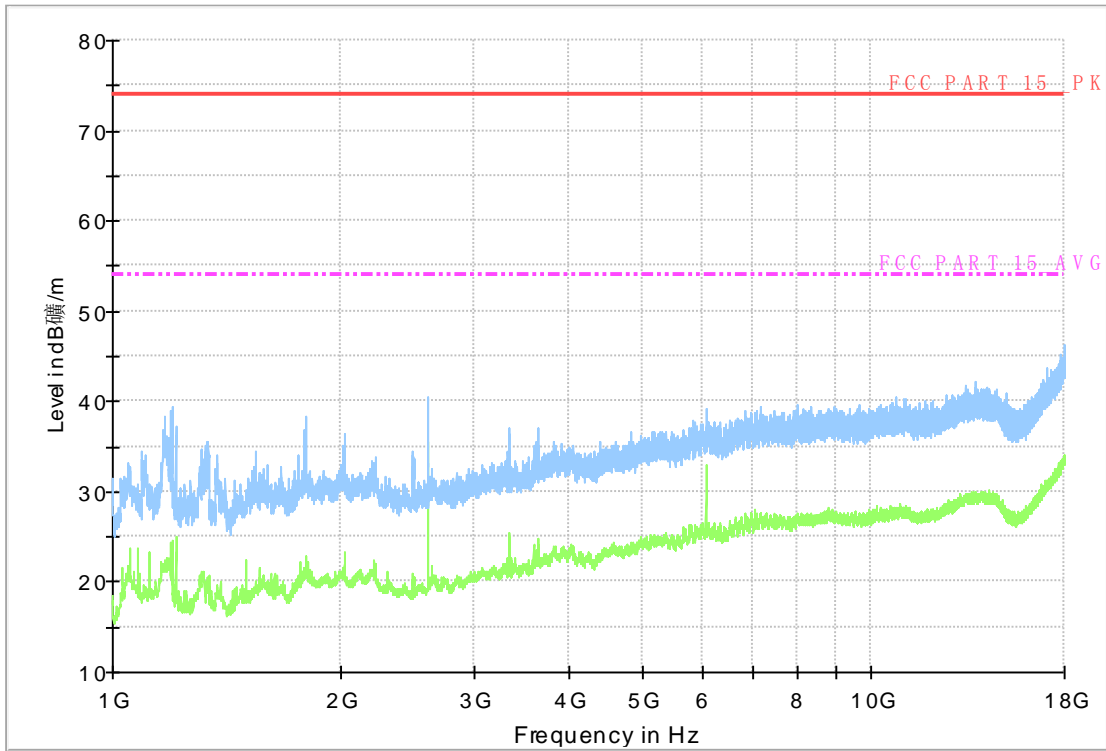
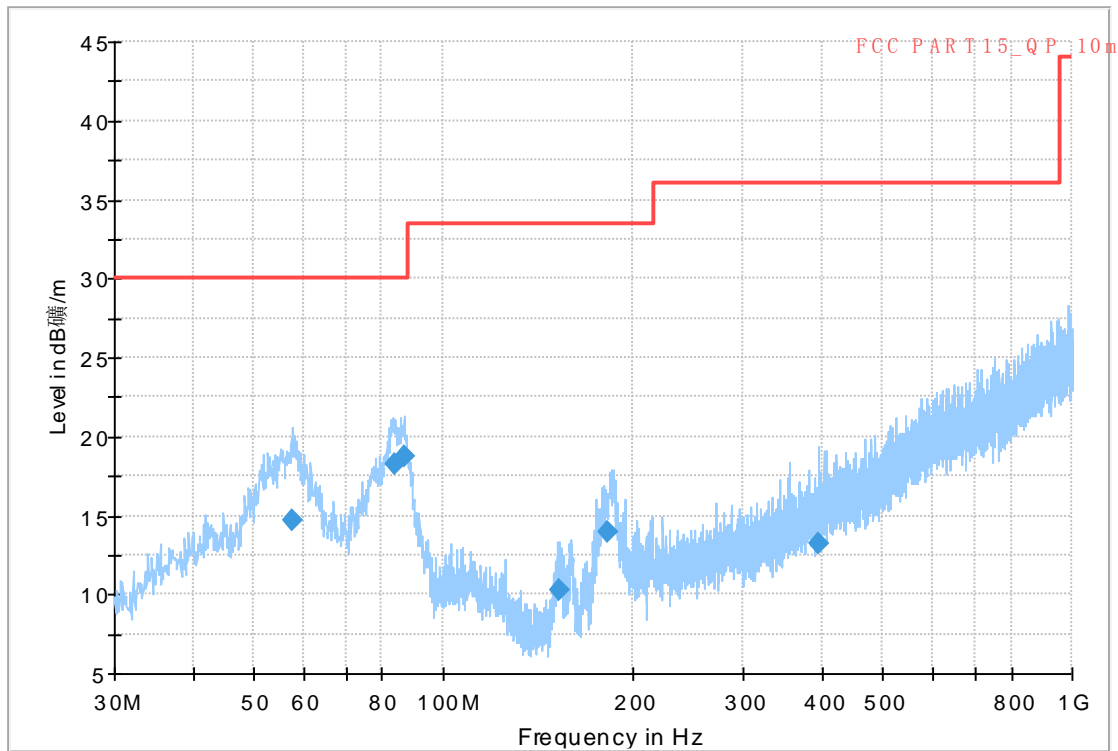


Fig A.6 Radiated Emission from 1GHz to 18GHz

**Front camera and charging Mode, Set.3 M2001J1G**

Full Spectrum


**Fig A.7 Radiated Emission from 30MHz to 1GHz**
**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
57.585000	14.69	30.00	15.31	1000.0	120.000	276.0	V	-30.0
83.844000	18.30	30.00	11.70	1000.0	120.000	177.0	V	258.0
86.662000	18.71	30.00	11.29	1000.0	120.000	125.0	V	251.0
152.529000	10.25	33.50	23.27	1000.0	120.000	125.0	V	80.0
183.274000	13.96	33.50	19.56	1000.0	120.000	203.0	V	-9.0
395.085000	13.24	36.00	22.78	1000.0	120.000	109.0	V	251.0

Full Spectrum

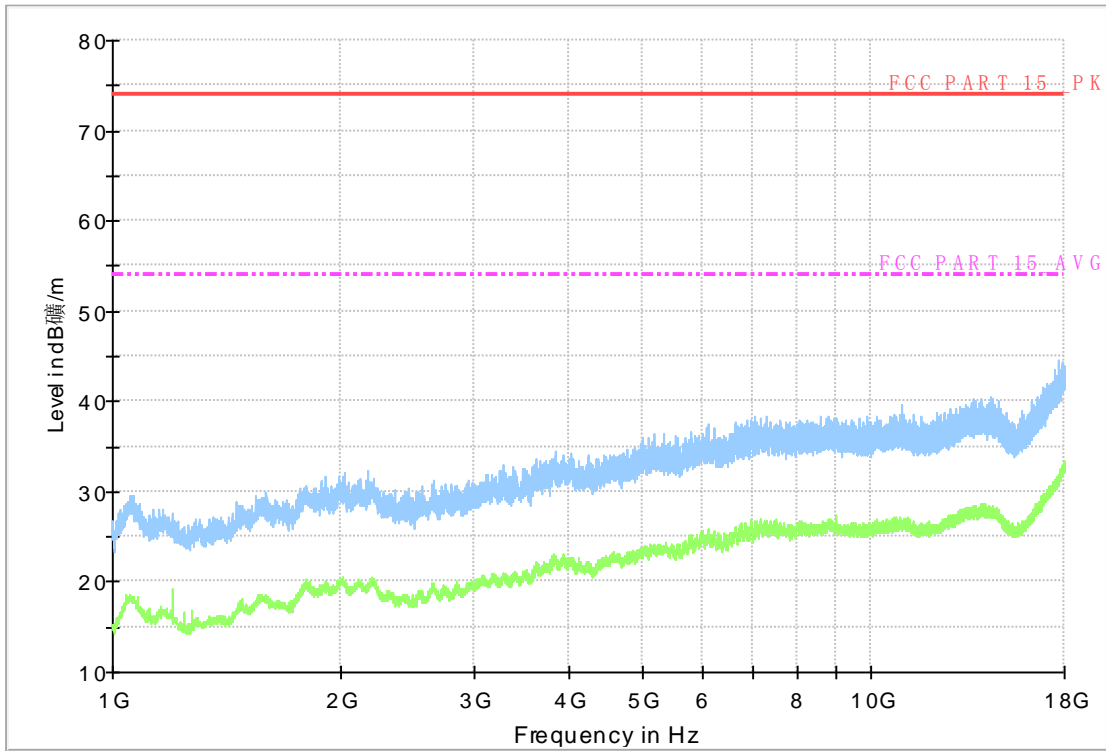
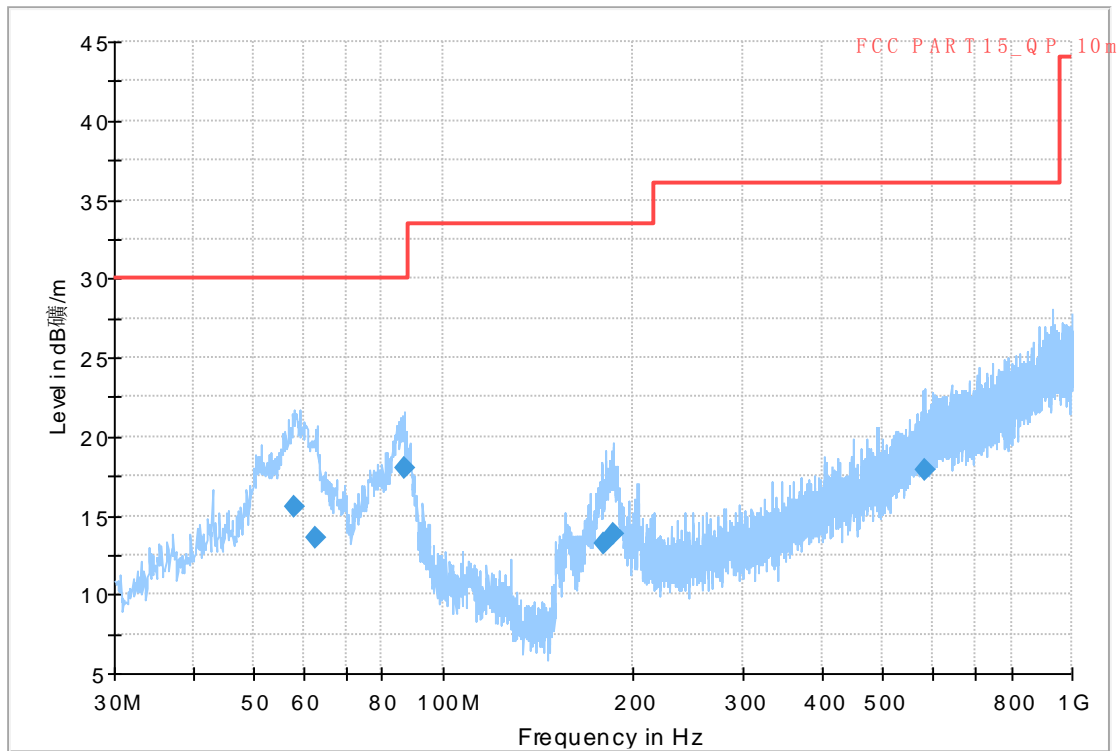


Fig A.8 Radiated Emission from 1GHz to 18GHz

**Rear camera and charging Mode, Set.3 M2001J1G**

Full Spectrum


**Fig A.9 Radiated Emission from 30MHz to 1GHz**
**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
57.793000	15.57	30.00	14.43	1000.0	120.000	103.0	V	-15.0
62.560000	13.59	30.00	16.41	1000.0	120.000	111.0	V	16.0
86.708000	18.04	30.00	11.96	1000.0	120.000	125.0	V	11.0
179.689000	13.24	33.50	20.28	1000.0	120.000	125.0	V	184.0
186.549000	13.85	33.50	19.67	1000.0	120.000	101.0	V	23.0
582.674000	17.87	36.00	18.15	1000.0	120.000	125.0	V	285.0

Full Spectrum

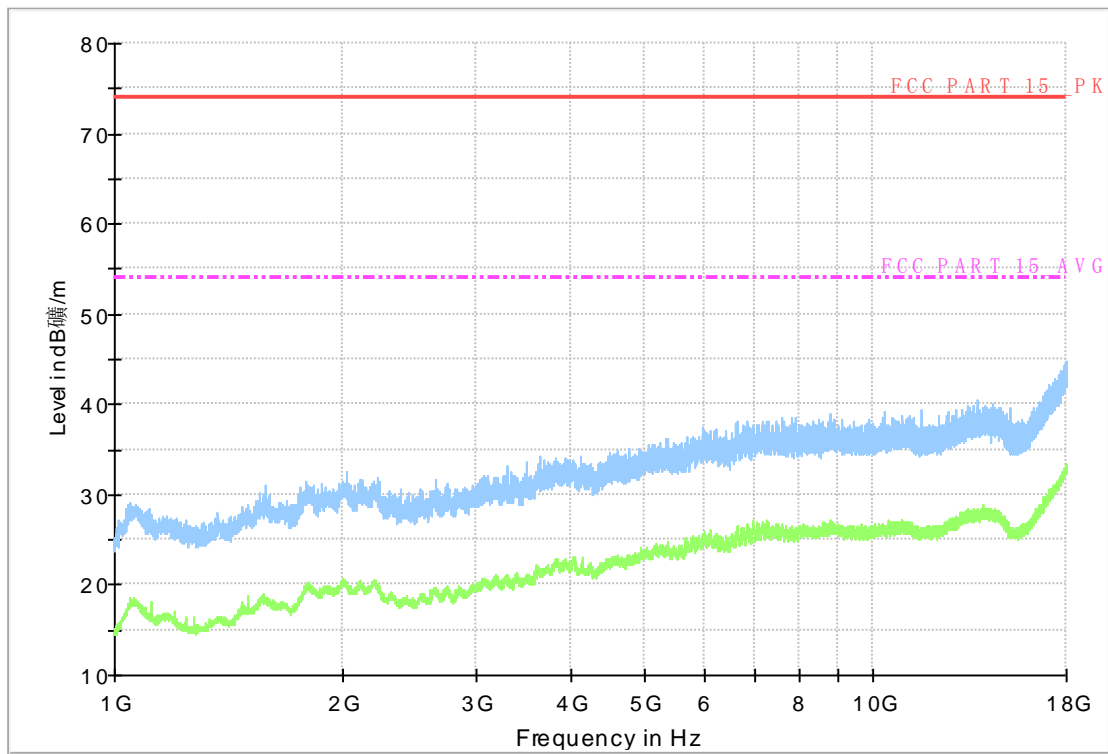
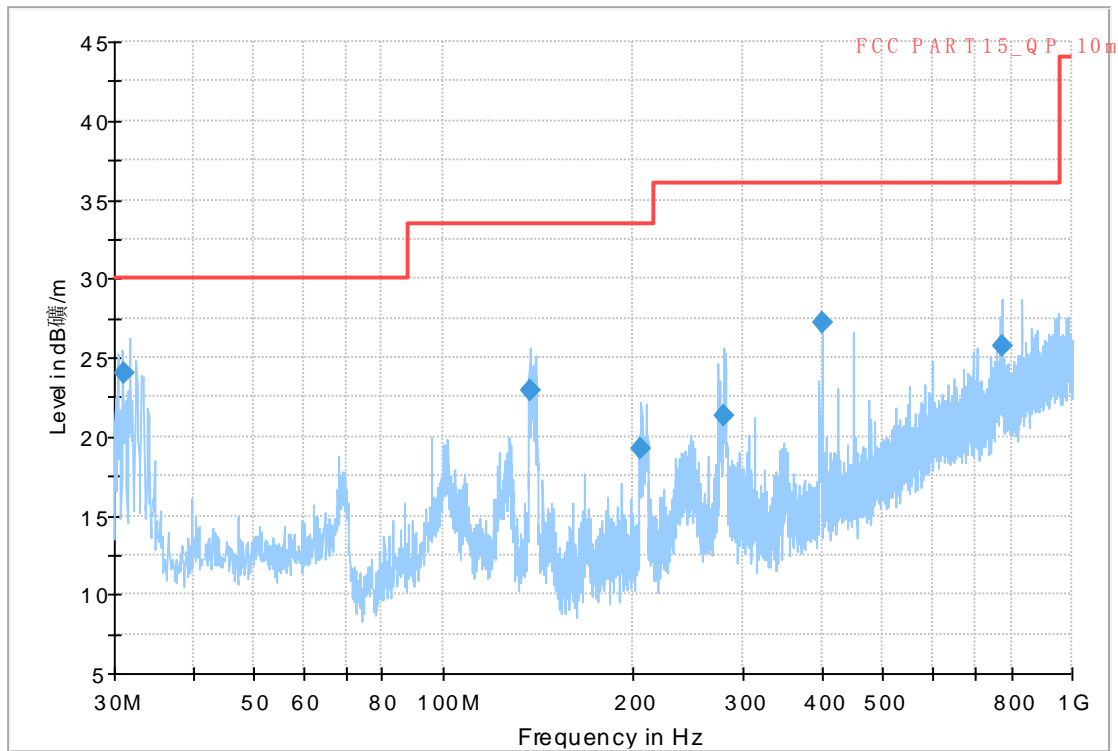


Fig A.10 Radiated Emission from 1GHz to 18GHz

**USB Mode, Set.4 M2001J1G**

## Full Spectrum


**Fig A.11 Radiated Emission from 30MHz to 1GHz**
**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
31.146000	23.97	30.00	6.03	1000.0	120.000	101.0	V	286.0
137.744000	22.90	33.50	10.62	1000.0	120.000	103.0	V	151.0
206.314000	19.29	33.50	14.23	1000.0	120.000	125.0	V	185.0
279.890000	21.35	36.00	14.67	1000.0	120.000	101.0	V	198.0
399.995000	27.23	36.00	8.79	1000.0	120.000	102.0	V	300.0
773.002000	25.75	36.00	10.27	1000.0	120.000	176.0	V	5.0

Full Spectrum

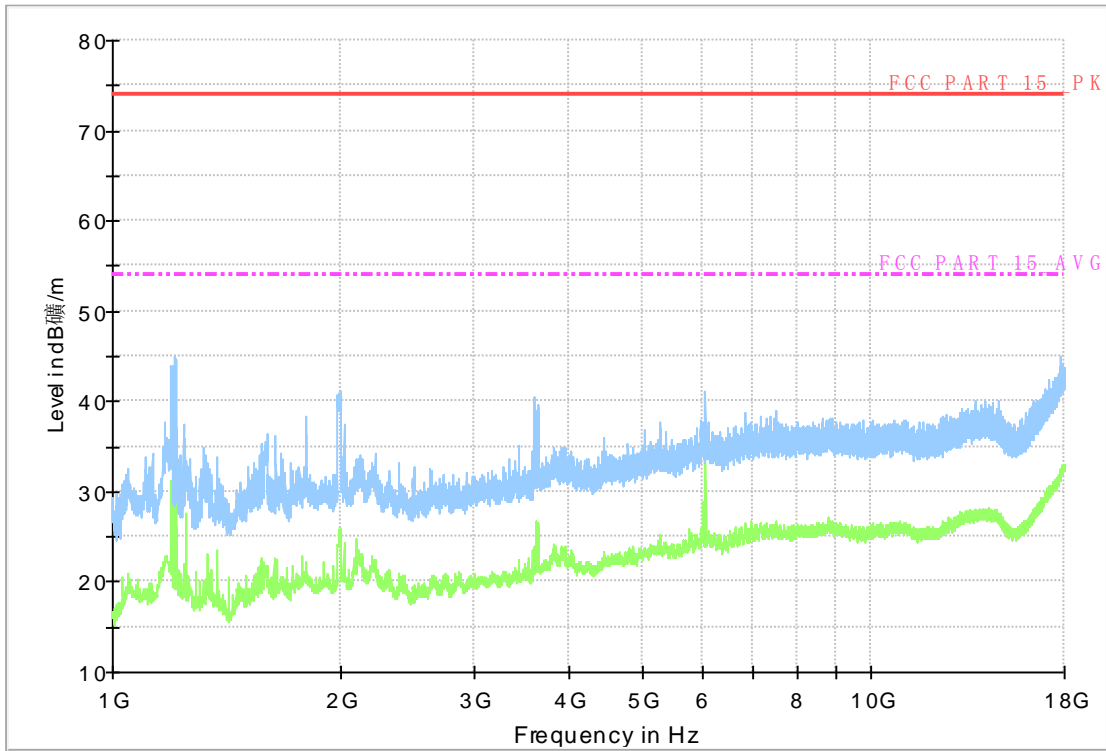


Fig A.12 Radiated Emission from 1GHz to 18GHz

## 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 USB mode and camera and charging mode. During the test MS is connected to a PC via a USB cable in the case of USB mode and is connected to a charger in the case of charging mode. The model of the PC is DELL OPTIPLEX 380, and the serial number of the PC is 2X1YV2X. The software is used to let the PC keep on copying data to MS, reading and erasing the data after copy action was finished.

Note: I/O information: Printer – USB, Mouse – PS/2, Keyboard – USB.

### 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



## Front camera and charging Mode, Set.1 M2001J2G

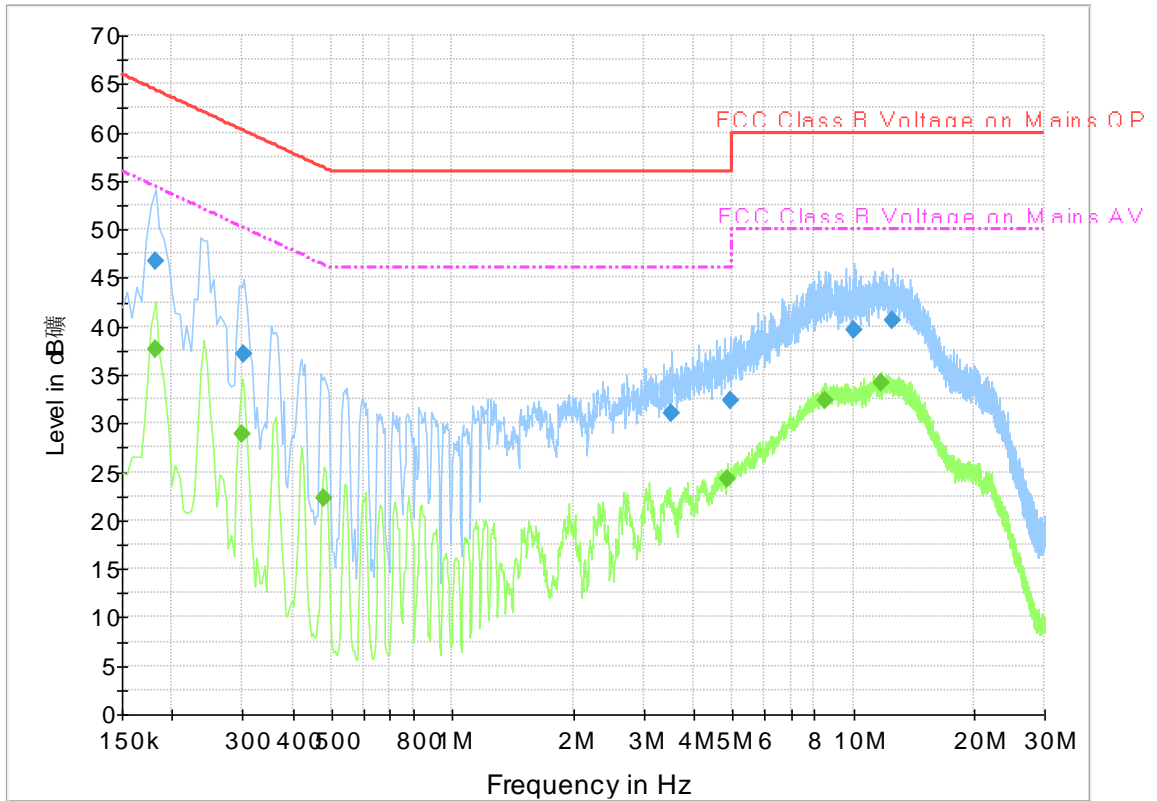


Fig A.13 Conducted Emission

## Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Line	Margin (dB)	Limit (dBµV)
0.181500	46.7	L1	17.7	64.4
0.303000	37.1	L1	23.1	60.2
3.534000	31.1	L1	24.9	56.0
4.924500	32.3	L1	23.7	56.0
10.045500	39.7	L1	20.3	60.0
12.475500	40.5	L1	19.5	60.0

## Final Result 2

Frequency (MHz)	Average (dBµV)	Line	Margin (dB)	Limit (dBµV)
0.181500	37.7	L1	16.7	54.4
0.298500	28.9	L1	21.4	50.3
0.478500	22.3	L1	24.1	46.4
4.870500	24.3	N	21.7	46.0
8.493000	32.4	N	17.6	50.0
11.715000	34.1	L1	15.9	50.0

## Rear camera and charging Mode, Set.1 M2001J2G

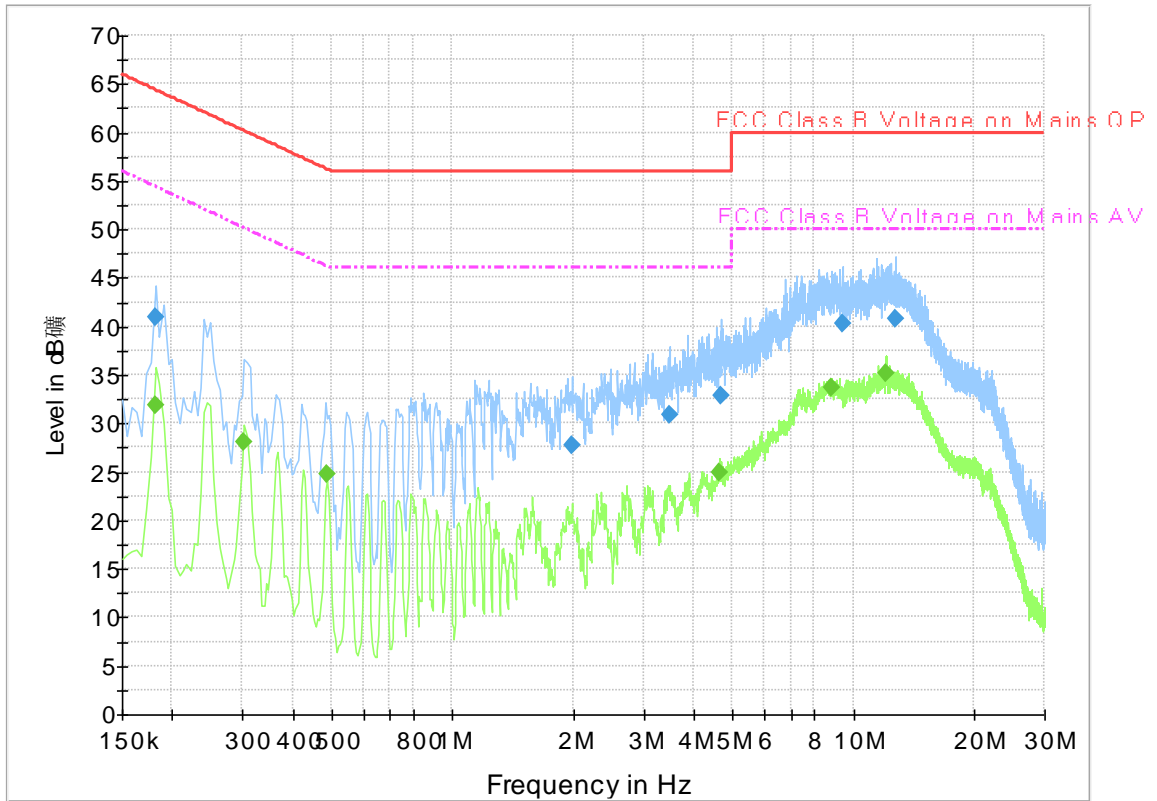


Fig A.14 Conducted Emission

## Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Line	Margin (dB)	Limit (dBµV)
0.181500	40.9	N	23.6	64.4
1.990500	27.7	L1	28.3	56.0
3.471000	30.8	L1	25.2	56.0
4.672500	32.8	L1	23.2	56.0
9.375000	40.3	L1	19.7	60.0
12.727500	40.8	L1	19.2	60.0

## Final Result 2

Frequency (MHz)	Average (dBµV)	Line	Margin (dB)	Limit (dBµV)
0.181500	31.9	N	22.5	54.4
0.303000	28.1	N	22.1	50.2
0.487500	24.8	N	21.4	46.2
4.645500	25.0	L1	21.0	46.0
8.826000	33.7	L1	16.3	50.0
12.039000	35.2	L1	14.8	50.0

USB Mode, Set.2 M2001J2G

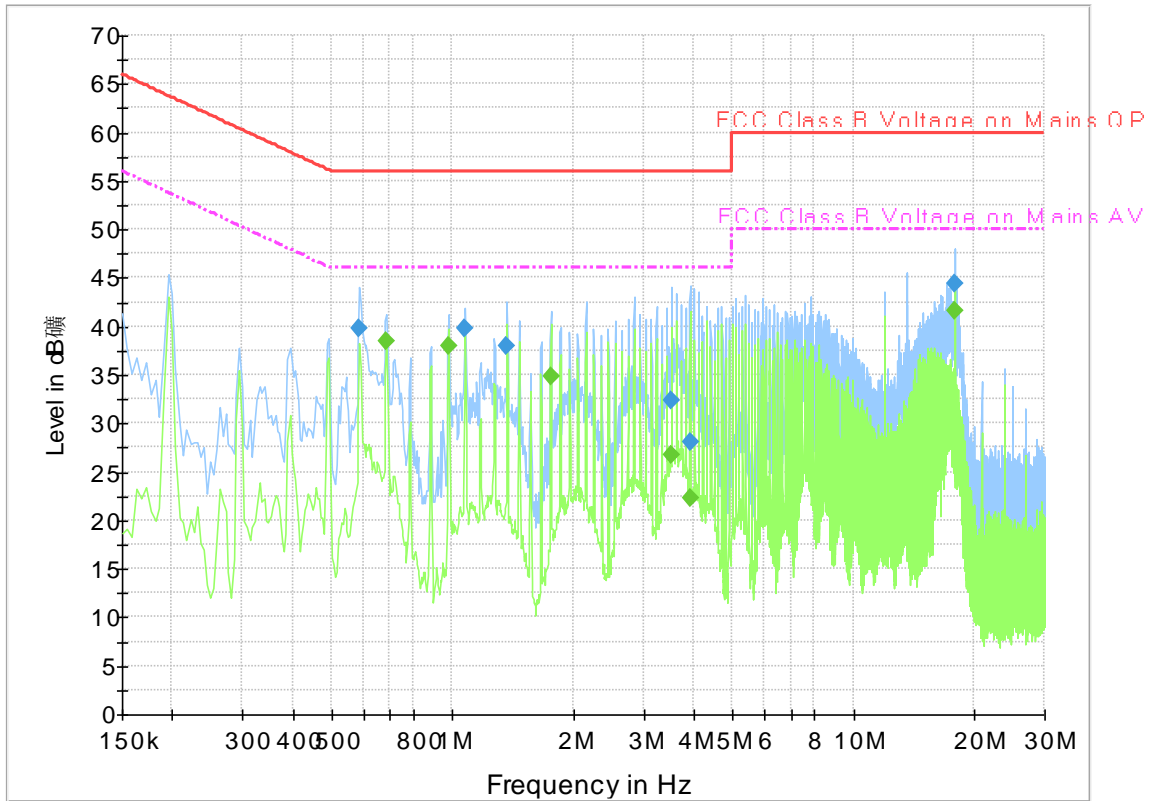


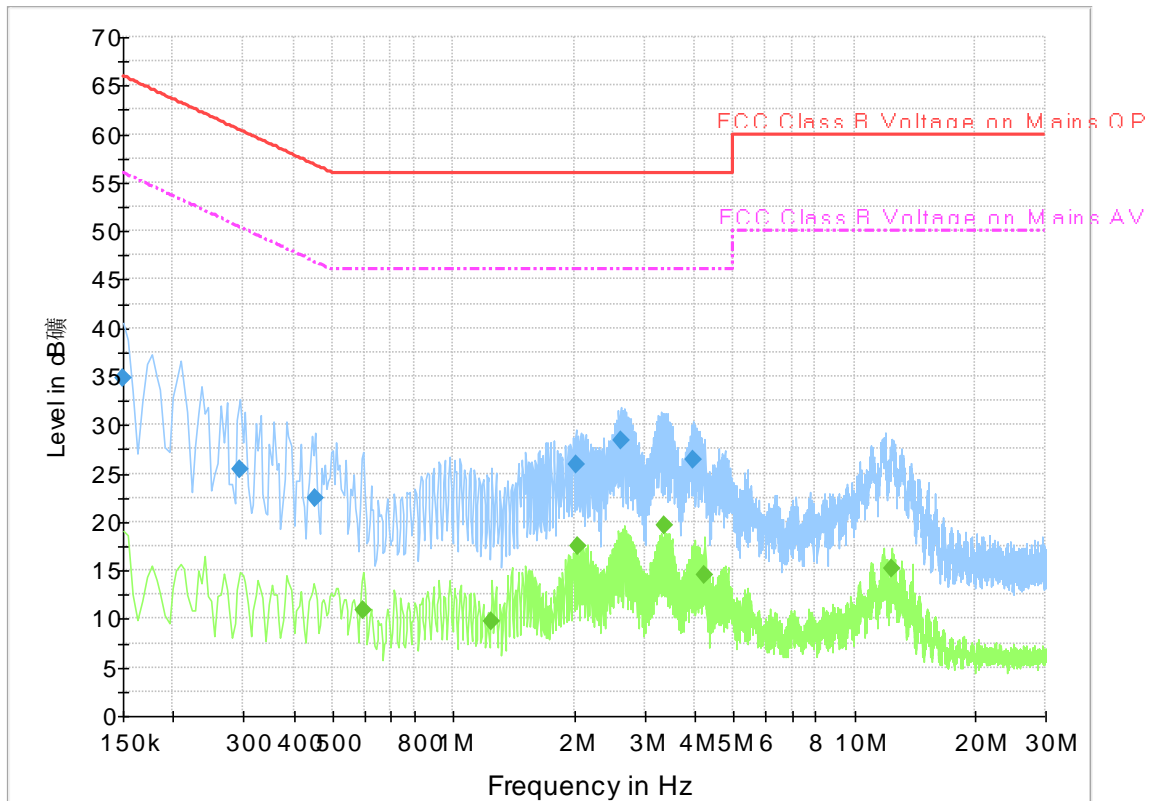
Fig A.15 Conducted Emission

**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV)	Line	Margin (dB)	Limit (dBµV)
0.586500	39.8	L1	16.2	56.0
1.077000	39.8	L1	16.2	56.0
1.369500	38.0	L1	18.0	56.0
3.520500	32.4	L1	23.6	56.0
3.912000	28.1	L1	27.9	56.0
17.884500	44.5	N	15.5	60.0

**Final Result 2**

Frequency (MHz)	Average (dBµV)	Line	Margin (dB)	Limit (dBµV)
0.685500	38.5	L1	7.5	46.0
0.978000	37.9	L1	8.1	46.0
1.761000	34.8	L1	11.2	46.0
3.520500	26.7	L1	19.3	46.0
3.912000	22.2	L1	23.8	46.0
17.884500	41.6	N	8.4	50.0

**Front camera and charging Mode, Set.3 M2001J1G**

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

Frequency (MHz)	QuasiPeak (dB $\mu$ V)	Line	Margin (dB)	Limit (dB $\mu$ V)
0.150000	34.8	N	31.2	66.0
0.294000	25.4	L1	35.0	60.4
0.451500	22.4	L1	34.4	56.8
2.017500	25.9	L1	30.1	56.0
2.611500	28.4	L1	27.6	56.0
3.975000	26.4	L1	29.6	56.0

**Final Result 2**

Frequency (MHz)	Average (dB $\mu$ V)	Line	Margin (dB)	Limit (dB $\mu$ V)
0.595500	11.0	N	35.0	46.0
1.248000	9.7	L1	36.3	46.0
2.049000	17.4	L1	28.6	46.0
3.349500	19.6	L1	26.4	46.0
4.240500	14.5	L1	31.5	46.0
12.372000	15.3	N	34.7	50.0

## Rear camera and charging Mode, Set.3 M2001J1G

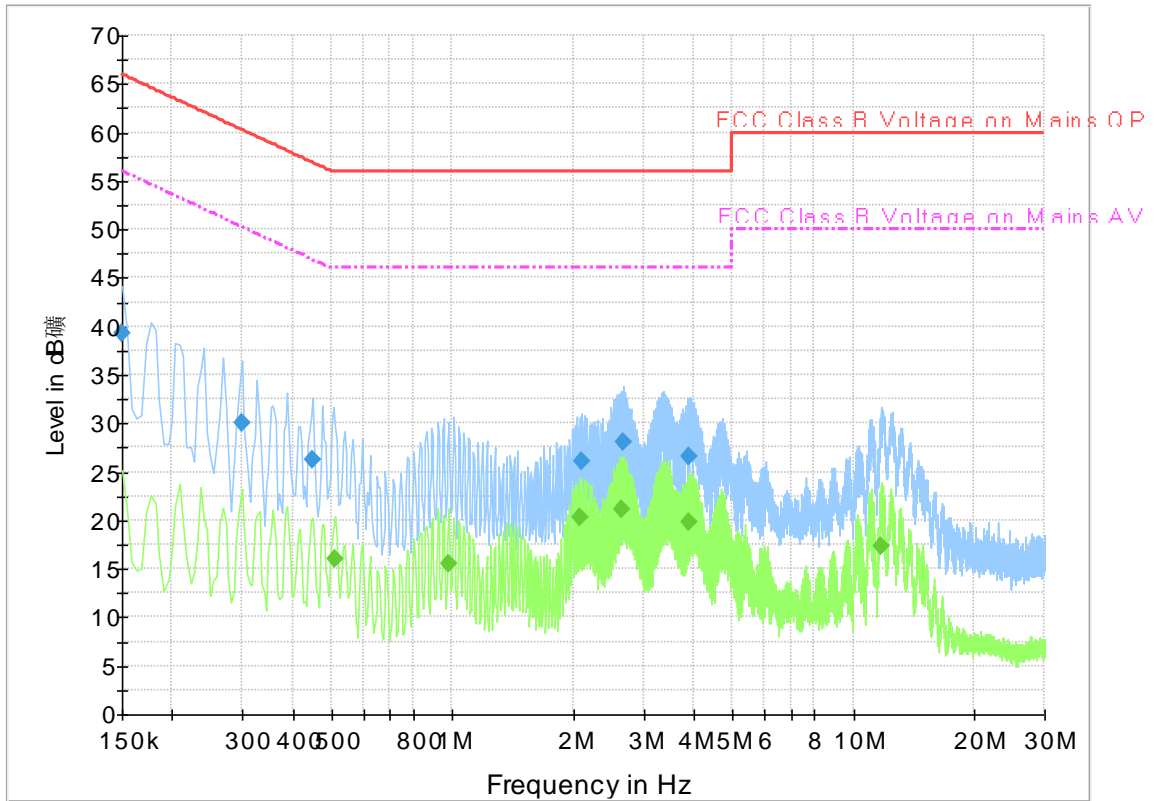


Fig A.17 Conducted Emission

## Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Line	Margin (dB)	Limit (dBµV)
0.150000	39.2	L1	26.8	66.0
0.298500	30.1	L1	30.2	60.3
0.447000	26.3	L1	30.6	56.9
2.103000	26.0	L1	30.0	56.0
2.670000	28.0	L1	28.0	56.0
3.885000	26.5	L1	29.5	56.0

## Final Result 2

Frequency (MHz)	Average (dBµV)	Line	Margin (dB)	Limit (dBµV)
0.510000	16.0	L1	30.0	46.0
0.978000	15.6	N	30.4	46.0
2.076000	20.3	L1	25.7	46.0
2.638500	21.1	L1	24.9	46.0
3.885000	19.8	L1	26.2	46.0
11.746500	17.3	L1	32.7	50.0

## USB Mode, Set.4 M2001J1G

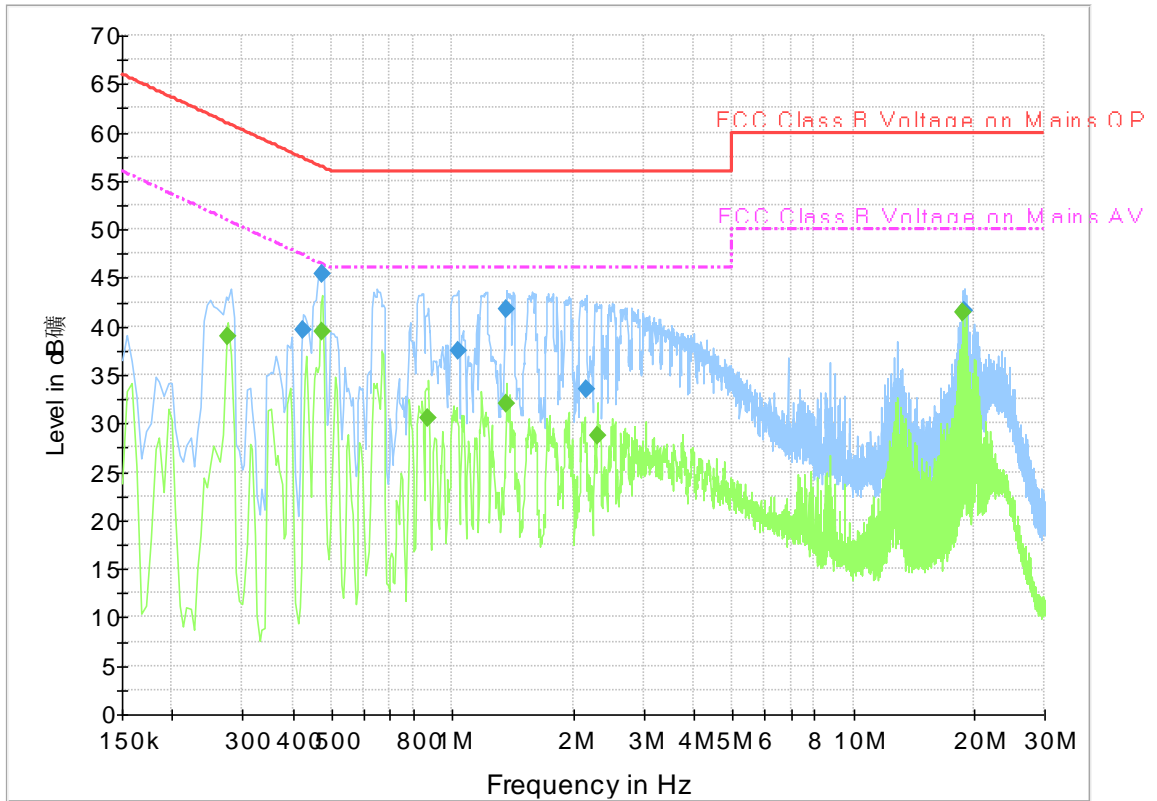


Fig A.18 Conducted Emission

## Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Line	Margin (dB)	Limit (dBµV)
0.424500	39.6	L1	17.8	57.4
0.474000	45.5	L1	11.0	56.4
1.032000	37.5	L1	18.5	56.0
1.365000	41.8	L1	14.2	56.0
2.161500	33.6	L1	22.4	56.0
18.924000	41.6	N	18.4	60.0

## Final Result 2

Frequency (MHz)	Average (dBµV)	Line	Margin (dB)	Limit (dBµV)
0.276000	38.9	N	12.0	50.9
0.474000	39.5	N	6.9	46.4
0.870000	30.5	N	15.5	46.0
1.365000	32.0	N	14.0	46.0
2.301000	28.7	N	17.3	46.0
18.789000	41.5	N	8.5	50.0



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

Test Item	Test operator
Conducted Emission	Wang Huan
Radiated Emission	Yan Hanchen

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