



# TEST REPORT

## No. I20Z70178-EMC03

for

**SAMSUNG Electronics Co., Ltd.**

**Tablet with Bluetooth, WLAN**

**Model Name: SM-T500**

**FCC ID: ZCASMT500**

with

**Hardware Version: REV1.0**

**Software Version: T500.001**

**Issued Date: 2020-7-20**

**Note:**

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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:**

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## **REPORT HISTORY**

<b>Report Number</b>	<b>Revision</b>	<b>Description</b>	<b>Issue Date</b>
I20Z70178-EMC03	Rev.0	1 <sup>st</sup> edition	2020-07-20

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

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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 (CN0066). The detail accreditation scope can be found on NVLAP website.

### **1.2. Testing Location**

#### **CTTL (BDA)**

Address: No.18A, Kangding Street, Beijing Economic-Technology Development Area, Beijing, P. R. China 100176

### **1.3. Testing Environment**

Normal Temperature: 15-35°C  
Relative Humidity: 20-75%

### **1.4. Project data**

Testing Start Date: 2020-06-17  
Testing End Date: 2020-07-17

### **1.5. Signature**



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Li Yan

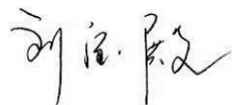
**(Prepared this test report)**



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Zhang Ying

**(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: SAMSUNG Electronics Co., Ltd.  
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07058  
City: /  
Postal Code: /  
Country: /  
Contact: Jenni Chun  
Email: j1.chun@samsung.com  
Telephone: 1-973-808-6375

### **2.2. Manufacturer Information**

Company Name: SAMSUNG Electronics Co., Ltd.  
Address: Samsung R5, Maetan dong 129, Samsung ro  
Youngtong gu, Suwon city 443 742, Korea  
City: /  
Postal Code: /  
Country: /  
Contact: Kobe Cho  
Email: ggobi.cho@samsung.com  
Telephone: +82 - 10 - 2722 - 4159

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

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

Description	Tablet with Bluetooth, WLAN
Model Name	SM-T500
FCC ID	ZCASMT500
Extreme vol. Limits	3.5VDC to 4.4VDC (nominal: 3.8VDC)

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

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

<b>EUT ID*</b>	<b>IME/SNI</b>	<b>HW Version</b>	<b>SW Version</b>	<b>Date of receipt</b>
UT12a	2070178UT12a	REV1.0	T500.001	2020.06.17

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

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

<b>AE ID*</b>	<b>Description</b>	<b>SN</b>	<b>Remarks</b>
AE1	Battery	/	/
AE2	Charger	/	/
AE3	Charger	/	/
AE4	Charger	/	/
AE5	USB Cable	/	/
AE6	USB Cable	/	/
AE7	Charger	/	No test
AE8	Charger	/	No test
AE9	Charger	/	No test
AE10	Charger	/	No test
AE11	Charger	/	No test
AE12	Charger	/	No test
AE13	USB Cable	/	No test
AE14	USB Cable	/	No test
AE15	Headset	/	/

##### **AE1**

Model	SCUD-WT-N19
Manufacturer	SCUD(Fujian) Electronics Co., Ltd
Capacitance	/
Nominal voltage	/

##### **AE2**

Model	EP-TA50JWE
Manufacturer	R.F.Tech
Length of cable	/



AE3		
Model	EP-TA50JWE	
Manufacturer	DONGWON	
Length of cable	/	
AE4		
Model	EP-TA50RWS	
Manufacturer	DONG YANG	
Length of cable	/	
AE5		
Model	EP-DT725BWE	
Manufacturer	R.F.Tech	
Length of cable	/	
AE6		
Model	EP-DT725BWE	
Manufacturer	KSD	
Length of cable	/	
AE7		
Model	EP-TA50JWS	
Manufacturer	R.F.Tech	
Length of cable	/	
AE8		
Model	EP-TA50EWE	
Manufacturer	R.F.Tech	
Length of cable	/	
AE9		
Model	EP-TA50JWS	
Manufacturer	DONGWON	
Length of cable	/	
AE10		
Model	EP-TA50EWE	
Manufacturer	DONGWON	
Length of cable	/	
AE11		
Model	EP-TA50EWE(Chile)	
Manufacturer	DONGWON	
Length of cable	/	
AE12		
Model	EP-TA50EWE(Chile)	
Manufacturer	DONG YANG	
Length of cable	/	
AE13		
Model	EP-DT725BWZ	
Manufacturer	R.F.Tech	
Length of cable	/	



AE14

Model EP-DT725BWZ  
Manufacturer KSD  
Length of cable /

AE15

Model GH59-15060A  
Manufacturer ALMUS CO.,LTD  
Length of cable /

Note: The USB cables are shielded.

**3.4. EUT set-ups**

<b>EUT set-up No.</b>	<b>Combination of EUT and AE</b>	<b>Remarks</b>
Set.1	UT12a + AE1 + AE2+ AE5+ AE15	Charger+ Front camera preview
Set.2	UT12a + AE1 + AE3+ AE6+ AE15	Charger+ Rear Camera
Set.3	UT12a + AE1 + AE4+ AE5	Charger+ MP4 play
Set.4	UT12a + AE1 + AE5/6+ AE15	USB mode(SD TO PC)+MP3



## **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×17 meters×10 meters) 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 MΩ
Ground system resistance	< 4Ω
Normalised site attenuation (NSA)	< ± 4 dB, 3m/10m distance, from 30 to 1000 MHz
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 6000 MHz

**Semi-anechoic chamber SAC-2** (10 meters×6.7meters×6.1meters) 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 MΩ
Ground system resistance	< 4 Ω
Normalised site attenuation (NSA)	< ± 4 dB, 3m distance, from 30 to 1000 MHz
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 6000 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
	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(BDA)
2	Conducted Emission	15.107(a)	A.2	P	CTTL(BDA)

## 7. Test Equipments Utilized

NO.	Description	TYPE	SERIES NUMBER	MANUFACTURE	CAL DUE DATE	CALIBRATION INTERVAL
1	Test Receiver	ESU26	100376	R&S	2020-10-30	1 year
2	Test Receiver	Test Receiver	100766	ESCI	2021-03-11	1 year
3	Universal Radio Communication Tester	CMW500	127406	R&S	2021-02-18	1 year
5	LISN	ENV216	825562/028	R&S	2020-09-05	1 year
6	BiLog Antenna	VULB9163	9163-482	Schwarzbeck	2020-09-16	1 year
7	EMI Antenna	3117	00139065	ETS-Lindgren	2020-11-10	1 year
8	Signal Generator	SMF100A	101295	R&S	2020-11-06	1 year
9	Test Receiver	ESU26	100376	R&S	2020-10-30	1 year
10	Printer	P1606dn	VNC3L52122	HP	N/A	N/A
11	Keyboard	KU-1601	2048361	Lenovo	N/A	N/A
12	Mouse	EMS-537A	8021S3MC	Lenovo	N/A	N/A

Test Item	Test Software and Version	Software Vendor
Radiated Continuous Emission	EMC32 V9.01.00	R&S
Conducted Emission	EMC32 V8.52.0	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 (USB mode of MS and charging mode of MS) at distances of 3 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 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, charging mode, MP3, MP4, CAMERA and SD mode. The model of the PC is Lenovo M4000e-17, and the serial number of the PC is M706RMW2. 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/3MHz	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: 5.40dB, 1GHz-18GHz: 4.32dB,  $k=2$ .

#### Measurement results for Set.1:

##### Charging Mode +Front Camera /Average detector

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
16837.000	52.4	-23.0	41.6	33.85	74.0	21.6	V
17742.500	52.3	-22.3	41.2	33.34	74.0	21.7	V
17205.500	52.2	-22.9	41.5	33.65	74.0	21.8	H
17858.000	52.2	-22.5	41.3	33.50	74.0	21.8	H
17033.500	52.1	-23.0	41.7	33.43	74.0	21.9	V
16329.500	52.0	-23.1	41.2	33.96	74.0	22.0	V

##### Charging Mode +Front Camera /Peak detector

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17637.500	40.2	-22.0	41.2	21.01	54.0	13.8	V
17701.500	39.9	-22.2	41.2	20.84	54.0	14.1	V
17636.500	39.8	-22.0	41.2	20.65	54.0	14.2	V
17747.000	39.8	-22.3	41.2	20.88	54.0	14.2	V
17704.500	39.8	-22.2	41.2	20.77	54.0	14.2	V
17720.000	39.8	-22.2	41.2	20.79	54.0	14.2	V

**Measurement results for Set.2:**
**Charging Mode+ Rear Camera /Average detector**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17732.000	52.5	-22.3	41.2	33.49	74.0	21.5	H
17030.000	51.9	-23.0	41.7	33.27	74.0	22.1	V
17128.500	51.9	-23.0	41.6	33.32	74.0	22.1	V
17722.500	51.9	-22.2	41.2	32.84	74.0	22.1	V
17058.500	51.7	-23.0	41.6	33.07	74.0	22.3	V
17170.000	51.7	-23.0	41.5	33.10	74.0	22.3	V

**Charging Mode+ Rear Camera /Peak detector**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17692.500	39.9	-22.2	41.2	20.80	54.0	14.1	V
17638.500	39.8	-22.0	41.2	20.66	54.0	14.2	H
17713.500	39.8	-22.2	41.2	20.81	54.0	14.2	V
17642.500	39.8	-22.0	41.2	20.65	54.0	14.2	V
17748.500	39.8	-22.3	41.3	20.83	54.0	14.2	V
17689.500	39.8	-22.2	41.2	20.70	54.0	14.2	V

**Measurement results for Set.3:**
**Charger+ MP4 /Average detector**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17811.000	52.0	-22.4	41.3	33.17	74.0	22.0	H
17537.000	52.0	-22.7	41.2	33.42	74.0	22.0	H
17873.500	52.0	-22.6	41.3	33.25	74.0	22.0	V
17242.000	51.9	-22.8	41.5	33.29	74.0	22.1	H
17584.500	51.9	-22.3	41.2	33.03	74.0	22.1	V
17489.500	51.8	-23.0	41.2	33.59	74.0	22.2	H

**Charger+ MP4 /Peak detector**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17692.500	39.9	-22.2	41.2	20.80	54.0	14.1	V
17638.500	39.8	-22.0	41.2	20.66	54.0	14.2	H
17713.500	39.8	-22.2	41.2	20.81	54.0	14.2	V
17642.500	39.8	-22.0	41.2	20.65	54.0	14.2	V
17748.500	39.8	-22.3	41.3	20.83	54.0	14.2	V
17689.500	39.8	-22.2	41.2	20.70	54.0	14.2	V



**Measurement results for Set.4:**
**USB (SD) mode +MP3 /Average detector**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17709.500	52.2	-22.2	41.2	33.16	74.0	21.8	V
17685.000	52.0	-22.1	41.2	32.88	74.0	22.0	H
16982.000	51.9	-23.0	41.7	33.20	74.0	22.1	V
17815.500	51.7	-22.4	41.3	32.91	74.0	22.3	V
17708.000	51.7	-22.2	41.2	32.68	74.0	22.3	H
17203.000	51.7	-22.9	41.5	33.11	74.0	22.3	V

**USB (SD) mode +MP3 /Peak detector**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17692.500	39.9	-22.2	41.2	20.80	54.0	14.1	V
17638.500	39.8	-22.0	41.2	20.66	54.0	14.2	H
17713.500	39.8	-22.2	41.2	20.81	54.0	14.2	V
17642.500	39.8	-22.0	41.2	20.65	54.0	14.2	V
17748.500	39.8	-22.3	41.3	20.83	54.0	14.2	V
17689.500	39.8	-22.2	41.2	20.70	54.0	14.2	V

### Charging Mode+ Front camera preview, Set.1

15B RE 30MHz-1GHz

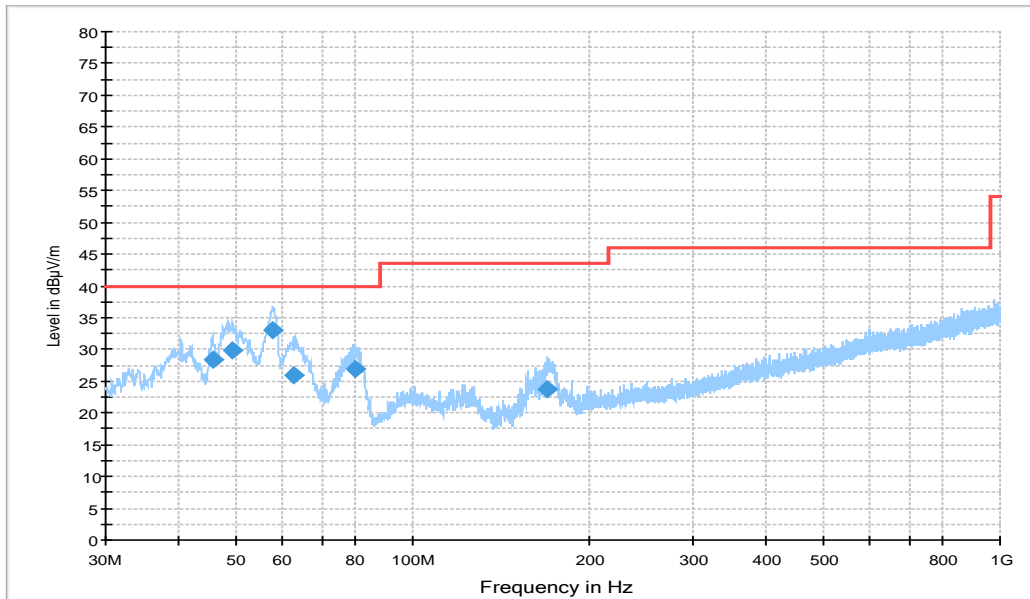
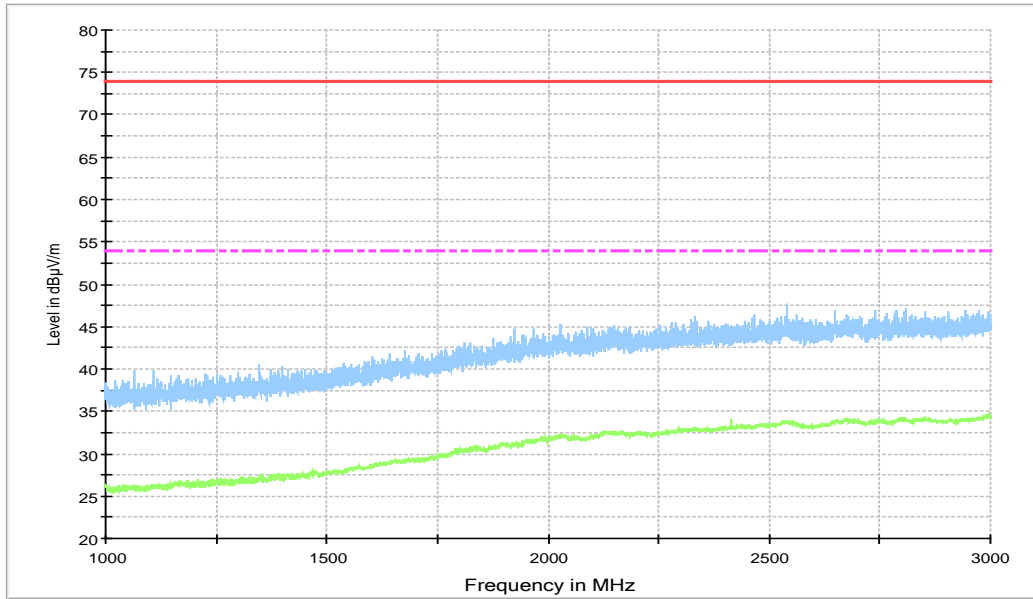


Figure A.1 Radiated Emission from 30MHz to 1GHz

### Final Result 1

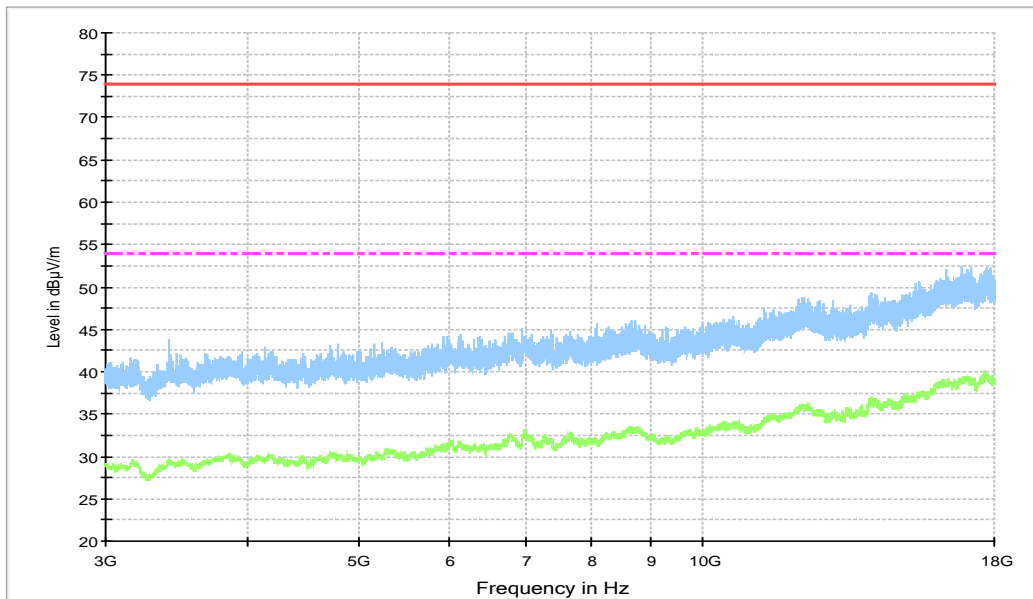
Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
45.617000	28.4	100.0	V	55.0	-0.1	11.6	40.0
49.400000	29.8	100.0	V	69.0	0.0	10.2	40.0
57.936000	33.0	125.0	V	77.0	-0.3	7.0	40.0
62.689000	26.1	100.0	V	135.0	-1.4	13.9	40.0
79.858000	26.9	125.0	V	299.0	-6.4	13.1	40.0
169.97100	23.8	100.0	V	-7.0	-3.7	19.7	43.5

15B RE - 1GHz-3GHz



**Figure A.2 Radiated Emission from 1GHz to 3GHz**

15b RE - 3GHz-18GHz



**Figure A.3 Radiated Emission from 3GHz to 18GHz**

### Charger+ Rear Camera, Set.2

15B RE 30MHz-1GHz

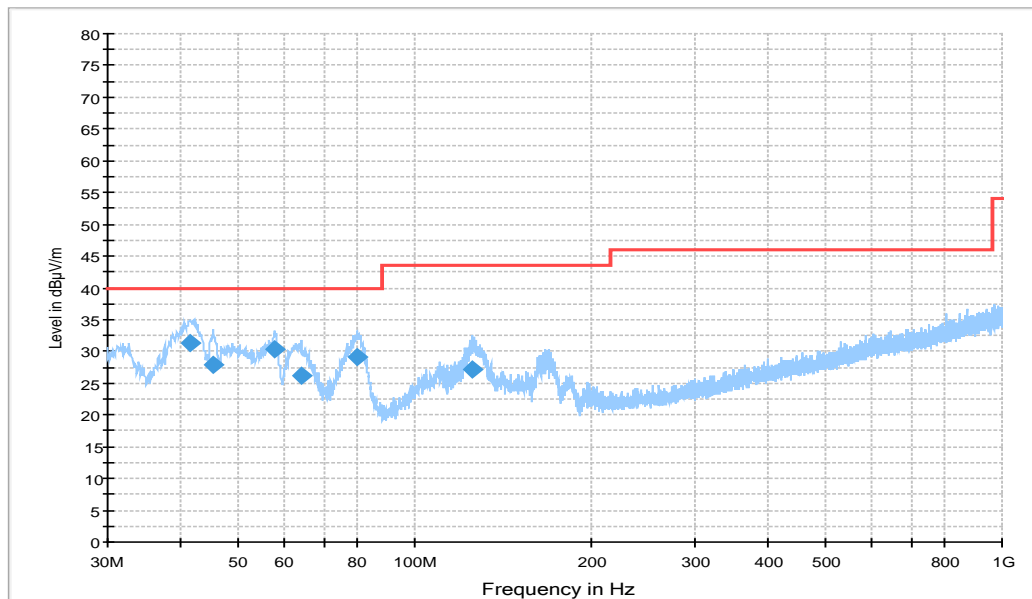
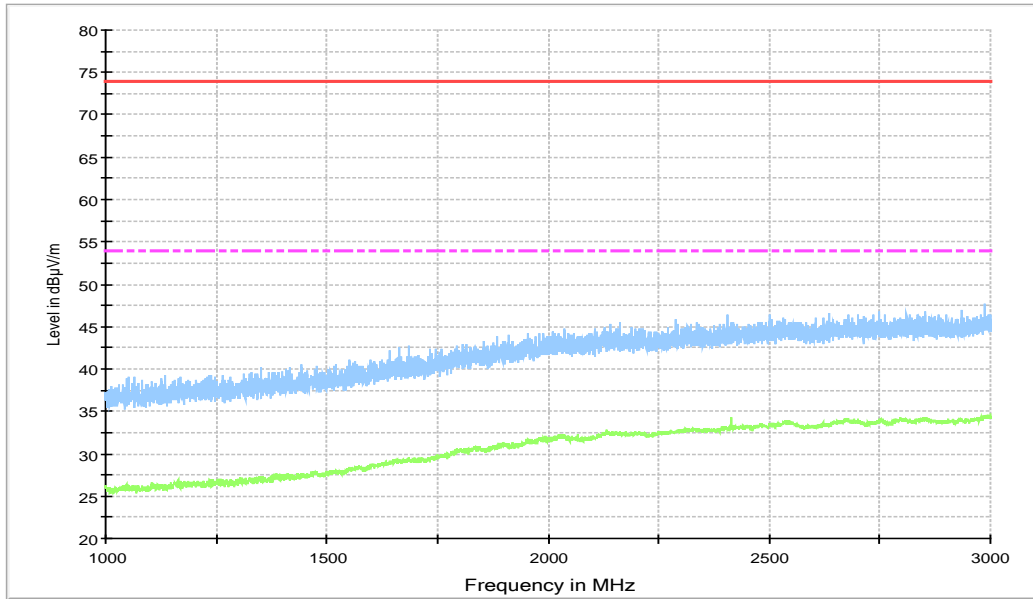


Figure A.4 Radiated Emission from 30MHz to 1GHz

### Final Result 1

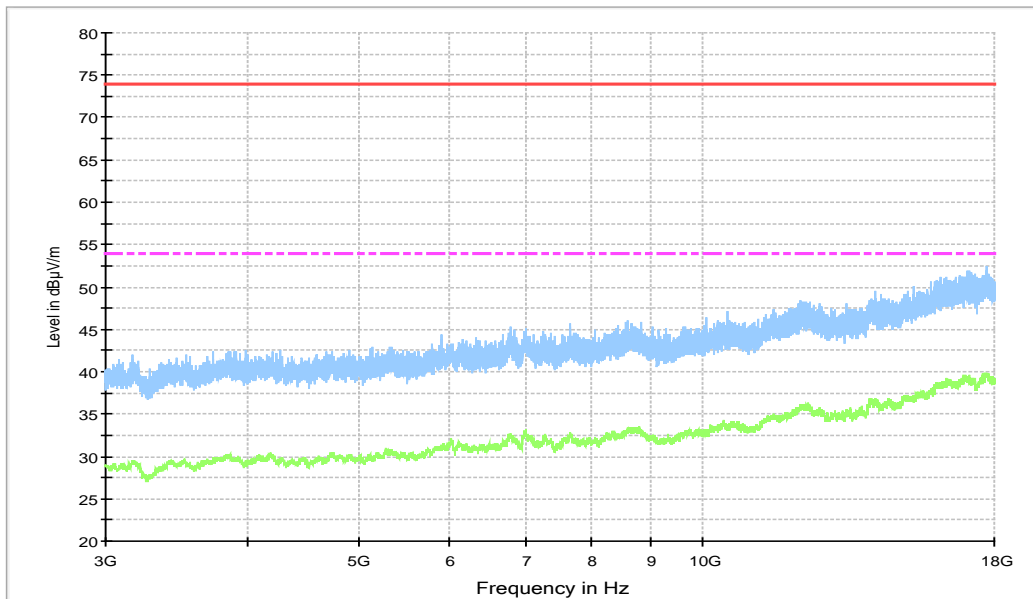
Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
41.446000	31.4	100.0	V	135.0	-0.2	8.6	40.0
45.423000	27.9	100.0	V	126.0	-0.1	12.1	40.0
57.742000	30.3	125.0	V	45.0	-0.3	9.7	40.0
64.144000	26.2	100.0	V	295.0	-2.0	13.8	40.0
79.858000	29.0	125.0	V	299.0	-6.4	11.0	40.0
125.25400	27.1	100.0	V	204.0	-3.9	16.4	43.5

15B RE - 1GHz-3GHz



**Figure A.5 Radiated Emission from 1GHz to 3GHz**

15b RE - 3GHz-18GHz



**Figure A.6 Radiated Emission from 3GHz to 18GHz**

### Charger mode +MP4, Set.3

15B RE 30MHz-1GHz

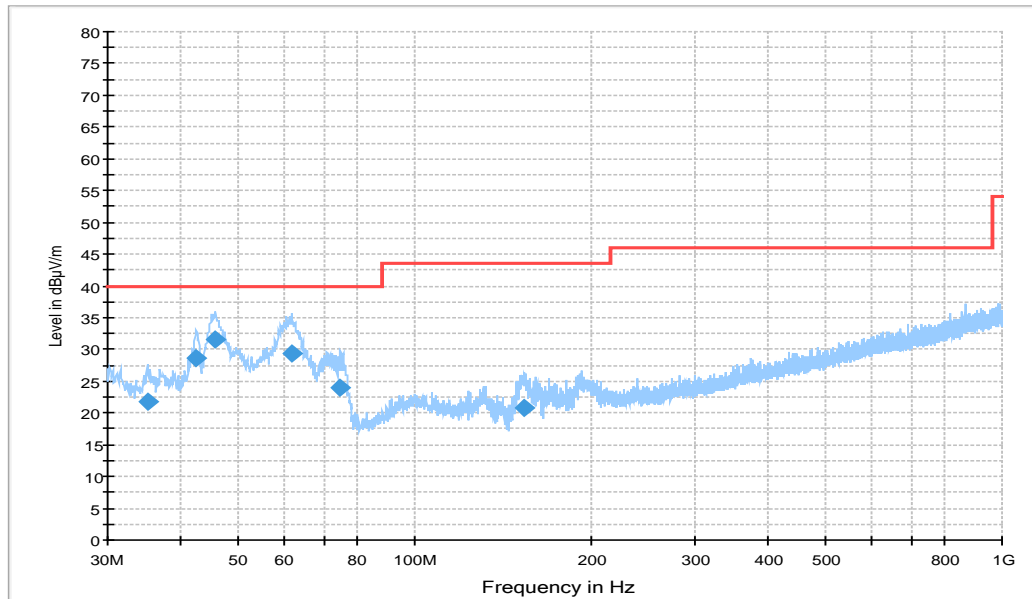
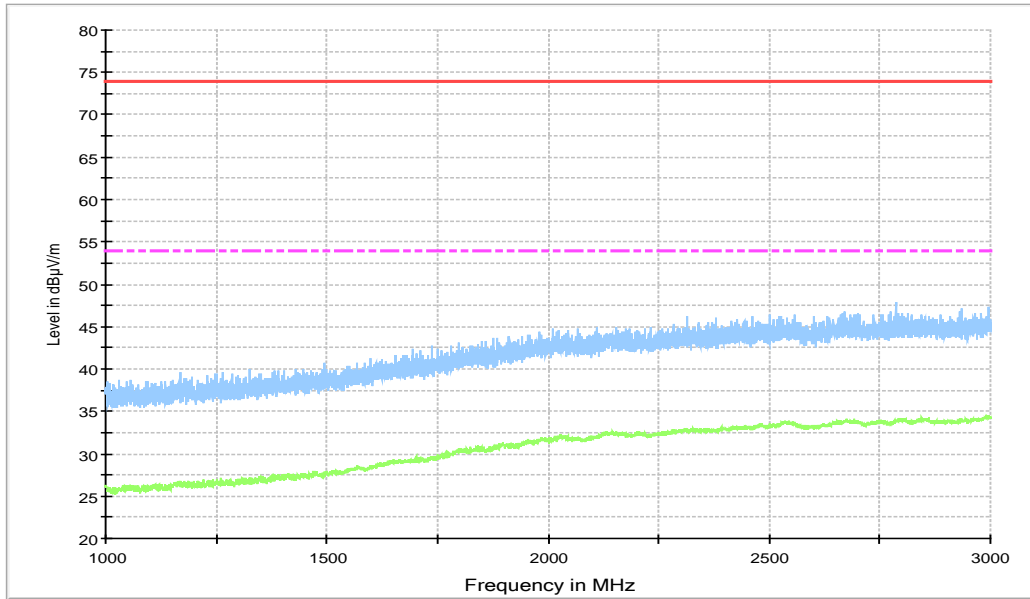


Figure A.7 Radiated Emission from 30MHz to 1GHz

### Final Result 1

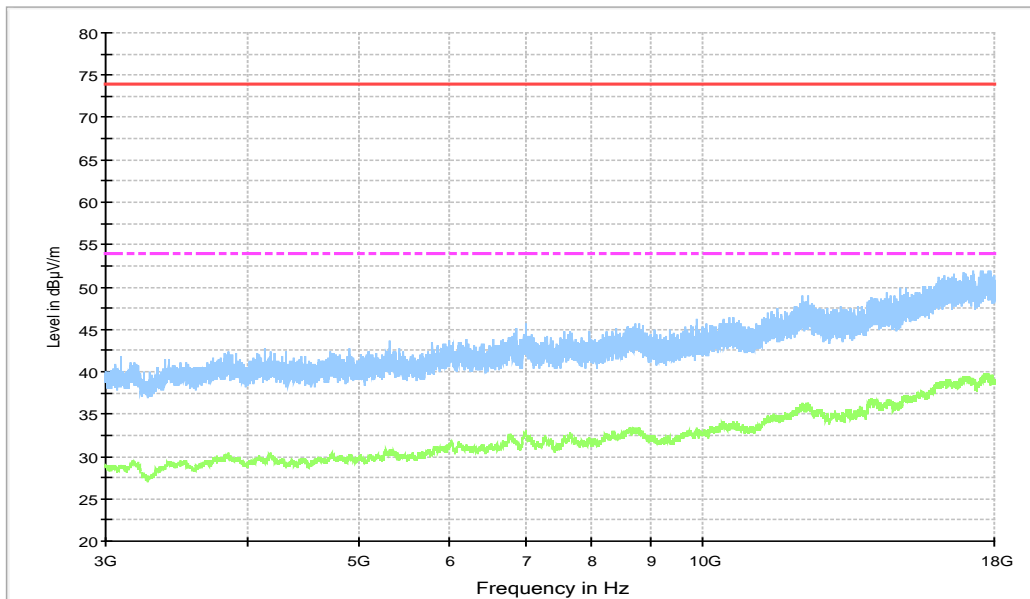
Frequency (MHz)	QuasiPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
35.044000	21.7	119.0	V	90.0	-1.1	18.3	40.0
42.513000	28.7	100.0	V	90.0	-0.2	11.3	40.0
45.811000	31.7	100.0	V	90.0	-0.1	8.3	40.0
61.816000	29.4	110.0	V	263.0	-1.1	10.6	40.0
74.814000	24.1	100.0	V	280.0	-5.2	15.9	40.0
153.86900	20.7	100.0	V	0.0	-4.5	22.8	43.5

15B RE - 1GHz-3GHz



**Figure A.8 Radiated Emission from 1GHz to 3GHz**

15b RE - 3GHz-18GHz



**Figure A.9 Radiated Emission from 3GHz to 18GHz**

### USB (SD) mode +MP3, Set.4

15B RE 30MHz-1GHz

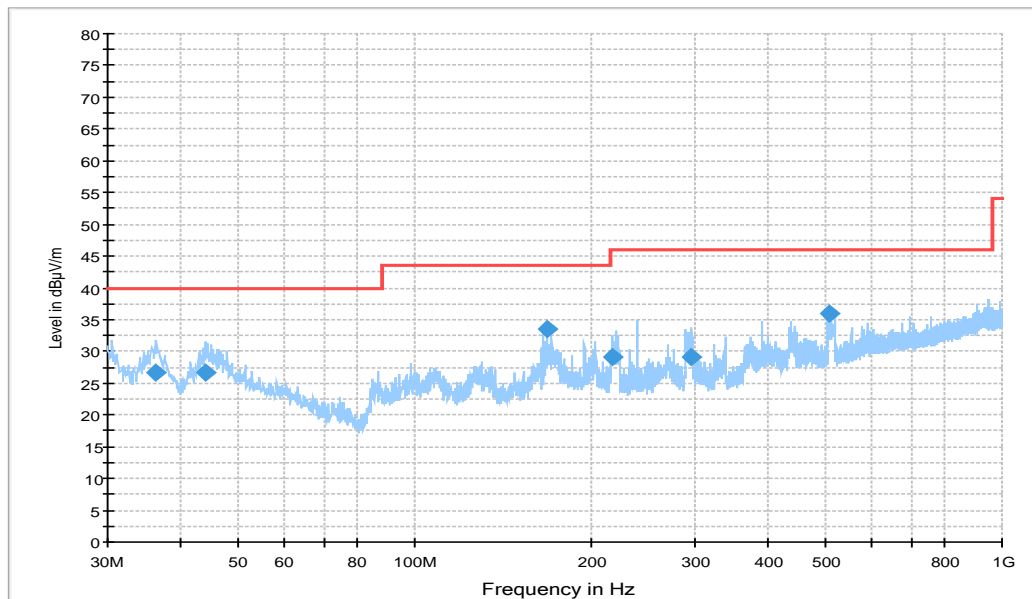


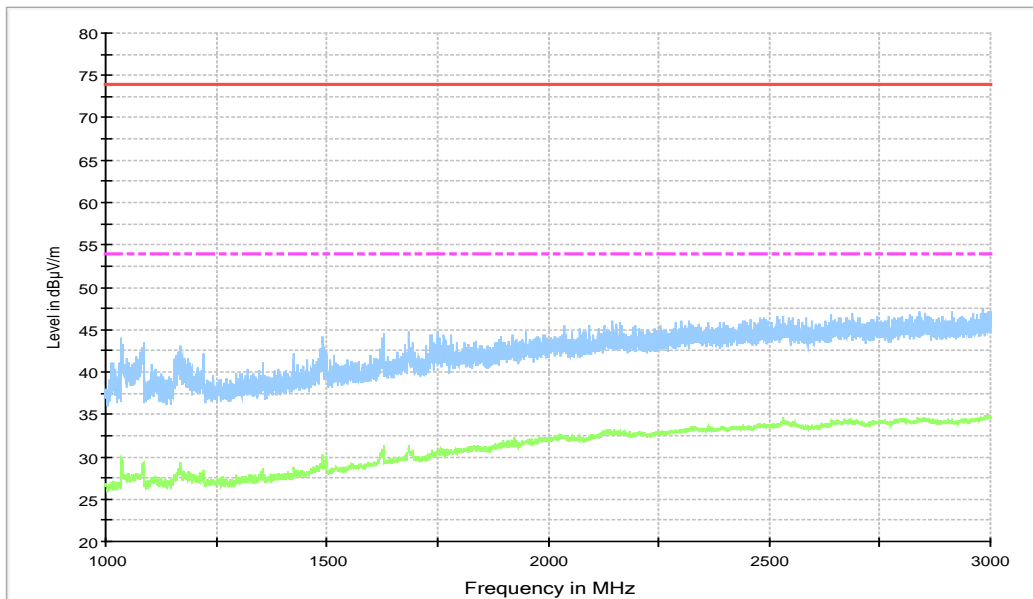
Figure A.10 Radiated Emission from 30MHz to 1GHz

### Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
36.305000	26.7	125.0	V	305.0	-0.8	13.3	40.0
44.065000	26.6	125.0	V	191.0	-0.1	13.4	40.0
167.93400	33.4	125.0	H	266.0	-3.8	10.1	43.5
216.82200	29.1	100.0	H	-14.0	-1.2	16.9	46.0
296.55600	29.1	100.0	H	-18.0	0.6	16.9	46.0
506.17300	36.0	125.0	V	315.0	6.1	10.0	46.0

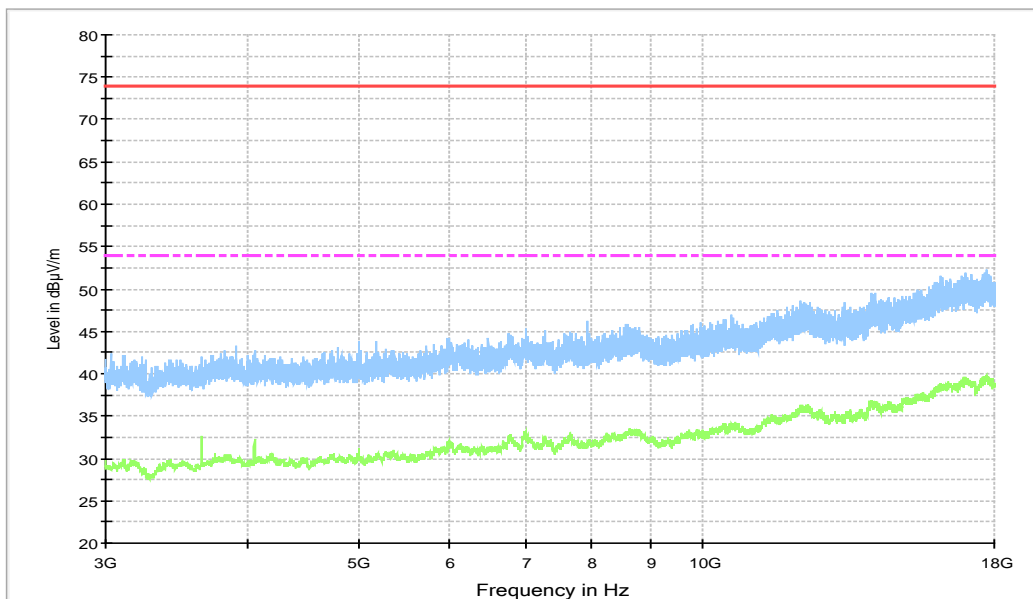


15B RE - 1GHz-3GHz



**Figure A.11 Radiated Emission from 1GHz to 3GHz**

15b RE - 3GHz-18GHz



**Figure A.12 Radiated Emission from 3GHz to 18GHz**

Note: The measurement results showed here are worst cases of the combinations of different cables.

## 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, charging mode, MP3, MP4, CAMERA and SD mode.

The model of the PC is Lenovo M4000e-17, and the serial number of the PC is M706RMW2. 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

### A.2.5 Measurement Results

Measurement uncertainty:  $U= 3.10$  dB,  $k=2$ .

#### Charger+ Front camera preview, Set.1

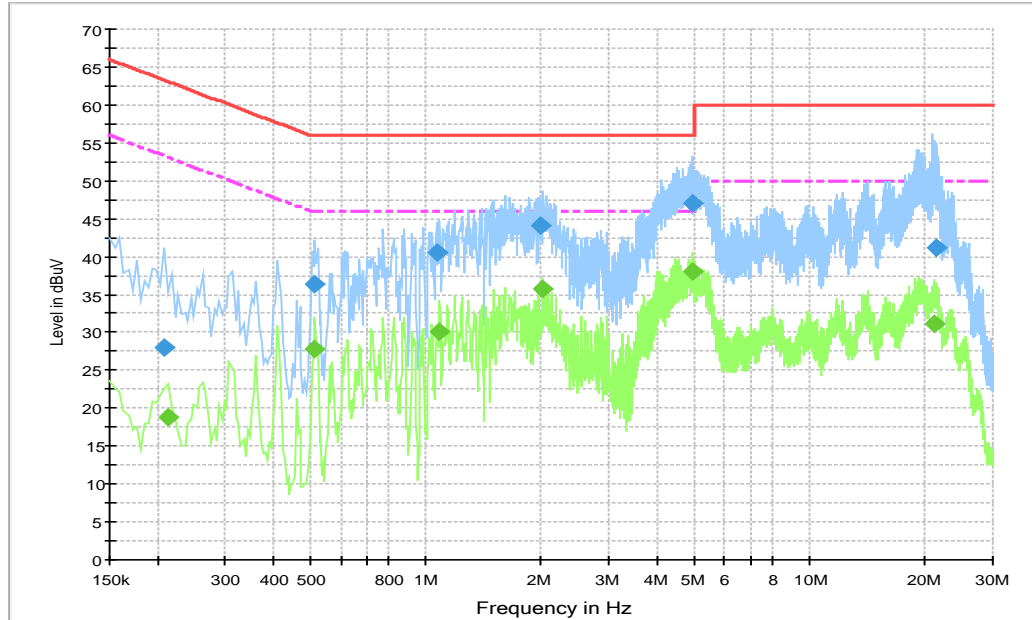


Figure A.13 Conducted Emission

#### Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.208500	28.1	10000.0	9.000	On	L1	19.9	35.2	63.3
0.514500	36.4	10000.0	9.000	On	L1	20.0	19.6	56.0
1.068000	40.5	10000.0	9.000	On	L1	19.8	15.5	56.0
1.986000	44.0	10000.0	9.000	On	L1	19.8	12.0	56.0
4.974000	47.0	10000.0	9.000	On	L1	19.8	9.0	56.0
21.430500	41.1	10000.0	9.000	On	L1	20.0	18.9	60.0

#### Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.213000	18.8	10000.0	9.000	On	L1	19.9	34.3	53.1
0.514500	27.8	10000.0	9.000	On	L1	20.0	18.2	46.0
1.086000	30.1	10000.0	9.000	On	L1	19.8	15.9	46.0
2.022000	35.8	10000.0	9.000	On	L1	19.8	10.2	46.0
4.974000	38.1	10000.0	9.000	On	L1	19.8	7.9	46.0
21.210000	31.2	10000.0	9.000	On	L1	20.0	18.8	50.0

. Charger+ Rear Camera, Set.2

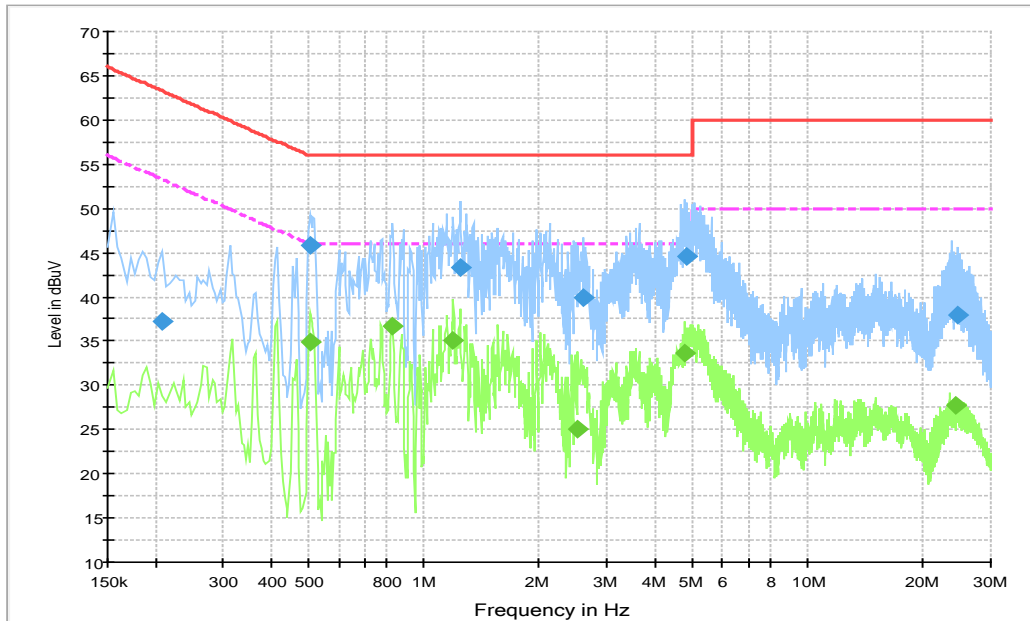


Figure A.14 Conducted Emission

**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.208500	37.2	10000.0	9.000	On	L1	19.9	26.1	63.3
0.505500	45.8	10000.0	9.000	On	L1	20.0	10.2	56.0
1.243500	43.3	10000.0	9.000	On	L1	19.8	12.7	56.0
2.593500	40.0	10000.0	9.000	On	L1	19.8	16.0	56.0
4.852500	44.5	10000.0	9.000	On	L1	19.8	11.5	56.0
24.580500	38.0	10000.0	9.000	On	L1	20.0	22.0	60.0

**Final Result 2**

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.505500	34.8	10000.0	9.000	On	L1	20.0	11.2	46.0
0.825000	36.7	10000.0	9.000	On	L1	19.9	9.3	46.0
1.194000	35.1	10000.0	9.000	On	L1	19.8	10.9	46.0
2.517000	25.1	10000.0	9.000	On	L1	19.8	20.9	46.0
4.803000	33.7	10000.0	9.000	On	L1	19.8	12.3	46.0
24.247500	27.7	10000.0	9.000	On	L1	20.0	22.3	50.0

### Charger+MP4, Set.3

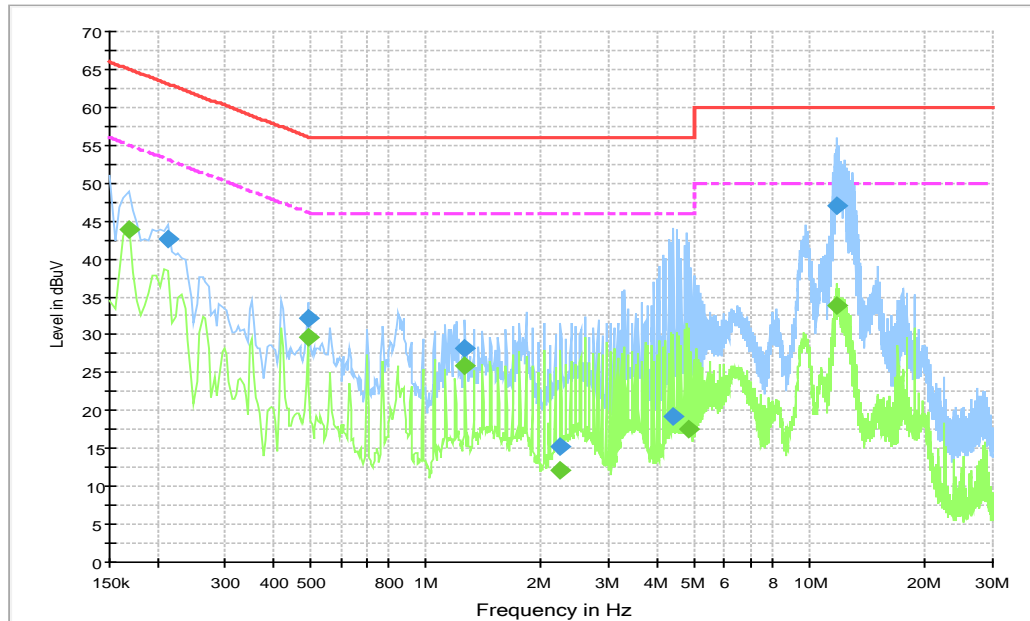


Figure A.15 Conducted Emission

#### Final Result 1

Frequency (MHz)	QuasiPeak (dB $\mu$ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)
0.213000	42.7	10000.0	9.000	On	L1	19.9	20.4	63.1
0.492000	32.2	10000.0	9.000	On	L1	20.0	23.9	56.1
1.266000	28.2	10000.0	9.000	On	L1	19.8	27.8	56.0
2.247000	15.2	10000.0	9.000	On	L1	19.8	40.8	56.0
4.429500	19.2	10000.0	9.000	On	L1	19.8	36.8	56.0
11.742000	47.0	10000.0	9.000	On	N	19.9	13.0	60.0

#### Final Result 2

Frequency (MHz)	Average (dB $\mu$ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)
0.168000	43.9	10000.0	9.000	On	N	20.1	11.2	55.1
0.492000	29.6	10000.0	9.000	On	L1	20.0	16.5	46.1
1.266000	25.9	10000.0	9.000	On	L1	19.8	20.1	46.0
2.247000	12.1	10000.0	9.000	On	L1	19.8	33.9	46.0
4.848000	17.5	10000.0	9.000	On	N	19.8	28.5	46.0
11.742000	33.9	10000.0	9.000	On	L1	19.9	16.1	50.0

### USB (SD) mode +MP3, Set.4

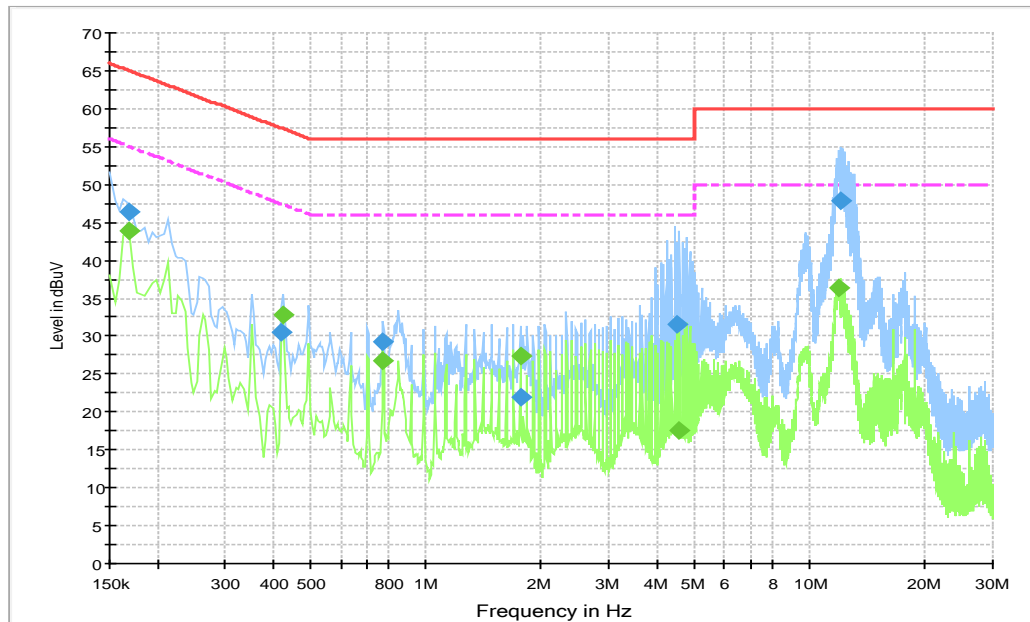


Figure A.16 Conducted Emission

#### Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.168000	46.5	10000.0	9.000	On	N	20.1	18.6	65.1
0.420000	30.6	10000.0	9.000	On	L1	20.0	26.9	57.4
0.775500	29.2	10000.0	9.000	On	L1	19.9	26.8	56.0
1.761000	22.0	10000.0	9.000	On	L1	19.8	34.0	56.0
4.519500	31.5	10000.0	9.000	On	N	19.8	24.5	56.0
11.998500	47.9	10000.0	9.000	On	L1	19.9	12.1	60.0

#### Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.168000	44.0	10000.0	9.000	On	N	20.1	11.1	55.1
0.424500	32.8	10000.0	9.000	On	L1	20.0	14.6	47.4
0.775500	26.8	10000.0	9.000	On	N	19.9	19.2	46.0
1.765500	27.4	10000.0	9.000	On	L1	19.8	18.6	46.0
4.587000	17.5	10000.0	9.000	On	L1	19.8	28.5	46.0
11.850000	36.4	10000.0	9.000	On	L1	19.9	13.6	50.0

Note: The measurement results showed here are worst cases of the combinations of different cables.



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

Test Item	Tester
Radiated Emission	Zhao Wenhui, Li Zongliang, Yang Fei
Conducted Emission	Guo Qian

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