



TEST REPORT

No. I22Z70462-EMC01

for

Samsung Electronics Co., Ltd.

Multi-band GSM/WCDMA/LTE phone with Bluetooth, WLAN

Model Name: SM-A145R/DSN

FCC ID: ZCASMA145RN

with

Hardware Version: REV1.0

Software Version: A145R.001

Issued Date: 2022-12-08

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.

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I22Z70462-EMC01	Rev.0	1 st edition	2022-12-08

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 17025:2017 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

CTTL (BDA)

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

1.3. Testing Environment

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

1.4. Project data

Testing Start Date: 2022-11-01
Testing End Date: 2022-12-07

1.5. Signature



Li Yan

(Prepared this test report)



Zhang Ying

(Reviewed this test report)



Shi Suolan

Deputy Director of the laboratory
(Approved this test report)



2. Client Information

2.1. Applicant Information

Company Name: Samsung Electronics Co., Ltd.
Address: 19 Chapin Rd., Building D Pine Brook, NJ 07058
City: /
Postal Code: /
Country: /
Contact: Jenni Chun
Email: j1.chun@samsung.com
Telephone: +1-201-937-4203

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: Sunghoon 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	Multi-band GSM/WCDMA/LTE phone with Bluetooth, WLAN
Model Name	SM-A145R/DSN
FCC ID	ZCASMA145RN

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

EUT ID*	IME/SNI	HW Version	SW Version
UT13a	2270462UT13a	REV1.0	A145R.001
UT14a	2270462UT14a	REV1.0	A145R.001

*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	Adapter	/	C to C
AE2	USB Cable1	/	C to C
AE3	USB Cable2	/	C to C
AE4	USB Cable3	/	C to A
AE5	Headset	/	/
AE6	Battery1	/	/
AE7	Battery2	/	/
AE8	Adapter	/	C to A

AE1

Model	EP-T1510
Manufacturer	HAEM Co.,Ltd
Length of cable	/

AE2

Model	EP-DN980BWZ
Manufacturer	Samsung Electronics Co., Ltd.
Length of cable	/

AE3

Model	EP-DN980BWE
Manufacturer	Samsung Electronics Co., Ltd.
Length of cable	/

AE4

Model	EP-DR140AWE
Manufacturer	Samsung Electronics Co., Ltd.
Length of cable	/

AE5

Model	EHS61ASFWE
Manufacturer	ALMUS

Length of cable	/
AE6	
Model	HQ-50SD
Type	Secondary Li-ion Polymer Battery
Manufacturer	SCUD (Fujian) Electronics CO.,LTD
AE7	
Model	HQ-50S
Type	Secondary Li-ion Polymer Battery
Manufacturer	SCUD (Fujian) Electronics CO.,LTD

Note:

1. The USB cables are shielded.
2. AE1 and AE5 are provided by client for relevant testing.
3. AE8 is provided by Lab for relevant testing.

3.4. General Description

The Equipment under Test (EUT) is a model of Multi-band GSM/WCDMA/LTE phone with Bluetooth, WLAN with integrated antenna and inbuilt battery.

Manual and specifications of the EUT were provided to fulfil the test.

Samples undergoing test were selected by the client.

The device contains receivers which tune and operate between 30MHz-960MHz in the following bands: GSM850, WCDMA Band 5, and LTE Band 5.

3.5. EUT set-ups

Set-up

EUT set-up No.	Combination of EUT and AE	Remarks
Set.1	UT13a + AE1 + AE2/AE3 +AE5	Adapter + cable+ headset
Set.2	UT13a + AE1 + AE2/AE3	Adapter + cable
Set.3	UT13a + AE8 + AE4 +AE5	Adapter + cable+ headset
Set.4	UT13a + AE2/AE3 +UT14a +AE5	EUT+EUT
Set.5	UT13a + AE2/AE3 + HD	EUT+HD
Set.6	UT13a + AE2/AE3 + AE6 +PC	Type C communication with PC
Set.7	UT13a + AE4 + AE6 +PC	USB communication with PC+SD

Test mode

Mode No.	Operating mode	Remarks
mode.1	MP4 Play	RE, CE
mode.2	Front Camera	RE, CE
mode.3	Rear Camera	RE, CE
mode.4	OTG Phone to Phone+MP3	RE only
mode.5	OTG + Mobile HD+MP4	RE only
mode.6	USB DATA (TYPE C)	RE, CE
mode.7	USB DATA (USB, SD TO PC)	RE, CE
mode.9	CXX RX mode	GSM850, WCDMA B5, LTE B5

4. Reference Documents

4.1. Reference Documents for testing

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

Reference	Title	Version
FCC Part 15, Subpart B	Radio frequency devices - Unintentional Radiators	2020
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 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 Equipment Utilized

Test Equipment

NO.	Description	TYPE	SERIES NUMBER	MANUFACTURER	CAL DUE DATE	CALIBRATION INTERVAL
1	Test Receiver	ESU26	100376	R&S	2023-09-22	1 year
2	Test Receiver	ESCI	100766	R&S	2023-03-02	1 year
3	LISN	ENV216	101459	R&S	2023-03-16	1 year
4	BiLog Antenna	VULB9163	01177	Schwarzbeck	2023-08-03	1 year
5	EMI Antenna	3115	00167252	ETS-Lindgren	2022-12-26	1 year
6	Universal Radio Communication Tester	CMW500	159408	R&S	2023-03-01	1 year
7	Printer	P1606dn	VNC3L52122	HP	N/A	N/A
8	Keyboard	KU-1601	2048361	Lenovo	N/A	N/A
9	Mouse	EMS-537A	8021S3MC	Lenovo	N/A	N/A
10	PC	M4000e-17	M706RMW2	Lenovo	N/A	N/A

Test Software

Test Item	Test Software and Version	Software Vendor
Radiated Continuous Emission	EMC32 V8.53.0	R&S
Conducted Emission	EMC32 V8.53.0	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 test, the turntable is rotated 360° and the measurement antenna is moved from 1m to 4m 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. The test is carried out on both vertical and horizontal polarization and only maximization result of both polarizations is kept.

A.1.2 EUT Operating Mode

The MS is operating in the USB mode, charging mode, MP4, MP3, CAMERA, OTG, RX and SD mode.

The WIFI and BT function was on and worked in receiving 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 the Section 3.4, 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.

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

A.1.3 Measurement Limit

Frequency range (MHz)	Field strength limit ($\mu\text{V/m}$)		
	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_{PL} : Path Loss

P_{Mea} : Measurement result on receiver.

Measurement uncertainty (worst case): 30MHz-1GHz: 5.37dB, 1GHz-18GHz: 5.58dB, $k=2$.

Note: all the set-up and operating mode list in section 3.5 were tested, only the worst test data are showed in this section.

Measurement results for Set.1+Mode3:

Adapter+ Rear Camera+ Headset /Average detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
16950.000	38.84	-27.1	41.7	24.31	54.0	15.2	V
16922.000	38.82	-27.2	41.6	24.36	54.0	15.2	V
16948.000	38.81	-27.1	41.6	24.29	54.0	15.2	V
16932.000	38.80	-27.1	41.6	24.32	54.0	15.2	V
17037.000	38.80	-27.0	41.6	24.19	54.0	15.2	V
17028.500	38.80	-27.0	41.7	24.18	54.0	15.2	V

Adapter+ Rear Camera + Headset /Peak detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
16838.500	52.0	-27.3	41.5	37.70	74.0	22.0	V
16869.500	52.0	-27.2	41.6	37.61	74.0	22.0	V
17741.000	51.5	-26.5	41.1	36.93	74.0	22.5	H
16623.000	51.4	-27.6	41.3	37.61	74.0	22.6	V
16657.000	51.2	-27.5	41.4	37.40	74.0	22.8	V
16927.500	51.2	-27.2	41.6	36.75	74.0	22.8	H

Measurement results for Set.2+Mode2
Adapter +F camera /Average detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
17034.000	38.93	-27.0	41.6	24.32	54.0	15.1	V
17036.000	38.90	-27.0	41.6	24.29	54.0	15.1	V
17033.500	38.88	-27.0	41.6	24.27	54.0	15.1	V
17028.000	38.86	-27.0	41.7	24.25	54.0	15.1	V
17104.500	38.85	-27.0	41.5	24.28	54.0	15.1	V
16924.000	38.85	-27.2	41.6	24.38	54.0	15.2	V

Adapter +F camera /Peak detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
16815.000	51.6	-27.3	41.5	37.39	74.0	22.4	V
17567.500	51.6	-26.7	41.0	37.31	74.0	22.4	V
17044.000	51.5	-27.0	41.6	36.91	74.0	22.5	H
16872.500	51.5	-27.2	41.6	37.12	74.0	22.5	V
17026.500	51.5	-27.0	41.7	36.85	74.0	22.5	V
16374.000	51.4	-27.6	41.1	37.87	74.0	22.6	V

Measurement results for Set.4+Mode5
OTG + Headset+ MP4 /Average detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
17033.000	38.98	-27.0	41.6	24.37	54.0	15.0	V
17122.000	38.96	-26.9	41.5	24.40	54.0	15.0	V
17118.500	38.91	-26.9	41.5	24.35	54.0	15.1	V
17037.000	38.90	-27.0	41.6	24.30	54.0	15.1	V
17121.500	38.90	-26.9	41.5	24.34	54.0	15.1	V
16651.000	38.89	-27.5	41.4	25.07	54.0	15.1	V

OTG + Headset+ MP4 /Peak detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
16448.000	51.5	-27.6	41.1	38.01	74.0	22.5	V
16630.500	51.5	-27.6	41.3	37.70	74.0	22.5	V
17116.500	51.3	-26.9	41.5	36.77	74.0	22.7	V
17648.000	51.3	-26.6	41.0	36.94	74.0	22.7	V
15853.000	51.1	-28.1	40.5	38.76	74.0	22.9	H
17856.500	51.1	-26.3	41.2	36.22	74.0	22.9	V

Measurement results for Set.7+Mode7+Mode9
USB mode (SD) + Headset + RX LTE Band5 /Average detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
17032.000	31.48	-27.0	41.6	16.87	54.0	22.5	V
17030.000	32.59	-27.0	41.7	17.98	54.0	21.4	V
17035.500	31.79	-27.0	41.6	17.19	54.0	22.2	V
17030.500	31.57	-27.0	41.7	16.96	54.0	22.4	V
16948.000	31.72	-27.1	41.6	17.21	54.0	22.3	V
17028.500	32.44	-27.0	41.7	17.83	54.0	21.6	V

USB mode (SD) + Headset + RX LTE Band5 /Peak detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
16765.000	51.6	-27.3	41.5	37.53	74.0	22.4	H
16664.000	51.5	-27.5	41.4	37.65	74.0	22.5	V
16599.000	51.5	-27.6	41.3	37.76	74.0	22.5	V
17609.500	51.4	-26.7	41.0	37.04	74.0	22.6	H
16957.500	51.3	-27.1	41.7	36.76	74.0	22.7	V
16742.500	51.3	-27.4	41.4	37.21	74.0	22.7	V

Adapter+ Rear Camera + Headset, Set.1+Mode3

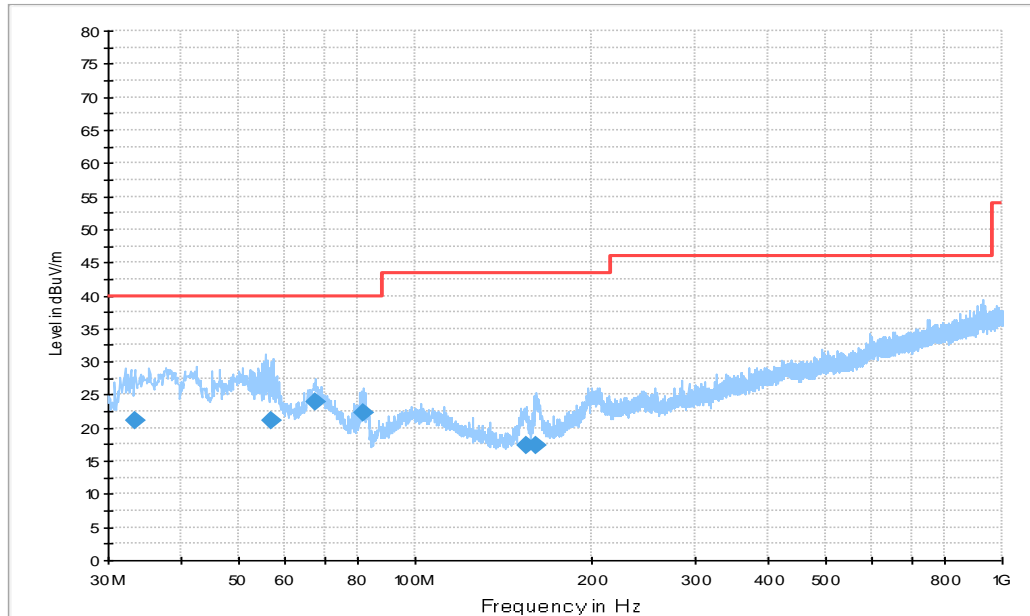


Figure A.1 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)
33.298000	21.1	100.0	V	76.0	-3.2	18.9	40.0
56.772000	21.0	125.0	V	57.0	-0.2	19.0	40.0
67.733000	23.9	100.0	V	83.0	-3.1	16.1	40.0
81.507000	22.4	125.0	V	237.0	-6.1	17.6	40.0
154.25700	17.3	113.0	V	0.0	-4.4	26.2	43.5
160.85300	17.4	113.0	V	-1.0	-3.9	26.1	43.5

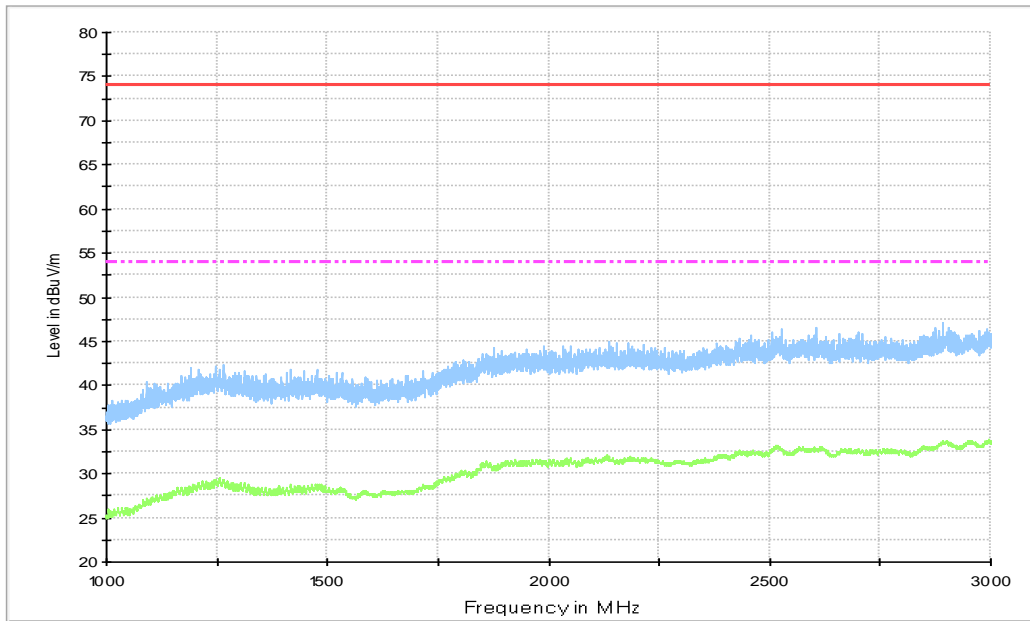


Figure A.2 Radiated Emission from 1GHz to 3GHz

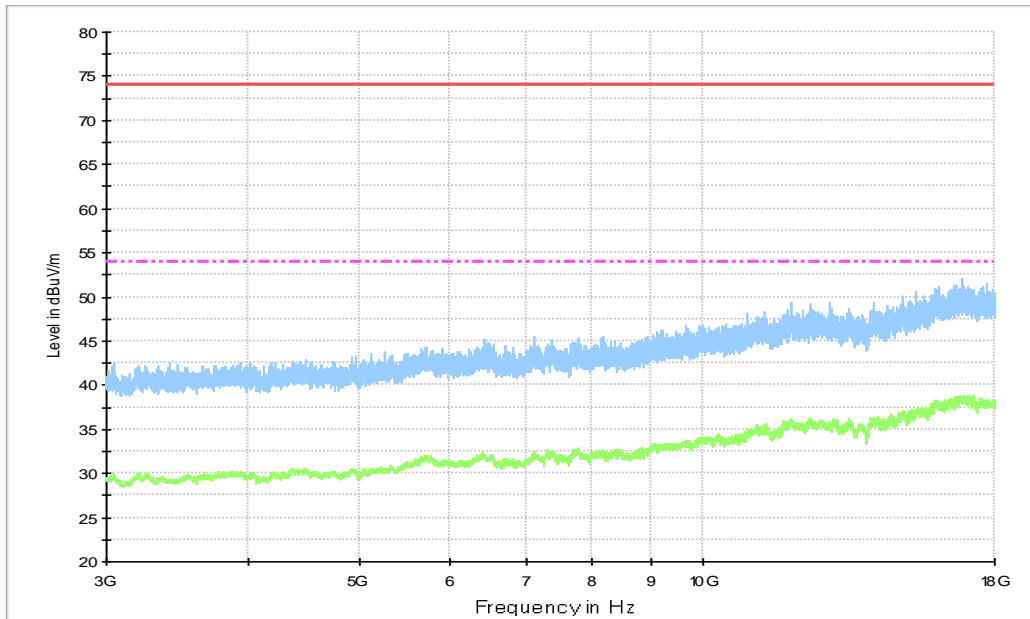


Figure A.3 Radiated Emission from 3GHz to 18GHz

Adapter +F camera, Set.2+Mode2

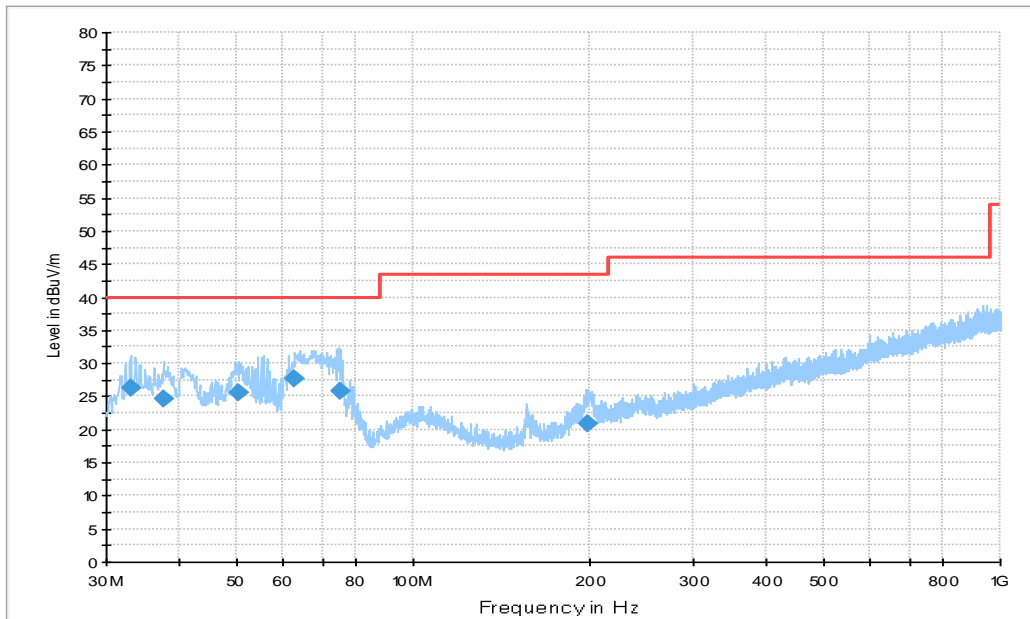


Figure A.4 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)
33.007000	26.2	100.0	V	135.0	-3.3	13.8	40.0
37.566000	24.7	113.0	V	180.0	-1.6	15.3	40.0
50.467000	25.5	100.0	V	45.0	0.6	14.5	40.0
62.786000	27.6	100.0	V	270.0	-1.5	12.4	40.0
75.105000	25.9	100.0	V	289.0	-5.7	14.1	40.0
199.07100	20.8	113.0	V	206.0	-0.6	22.7	43.5

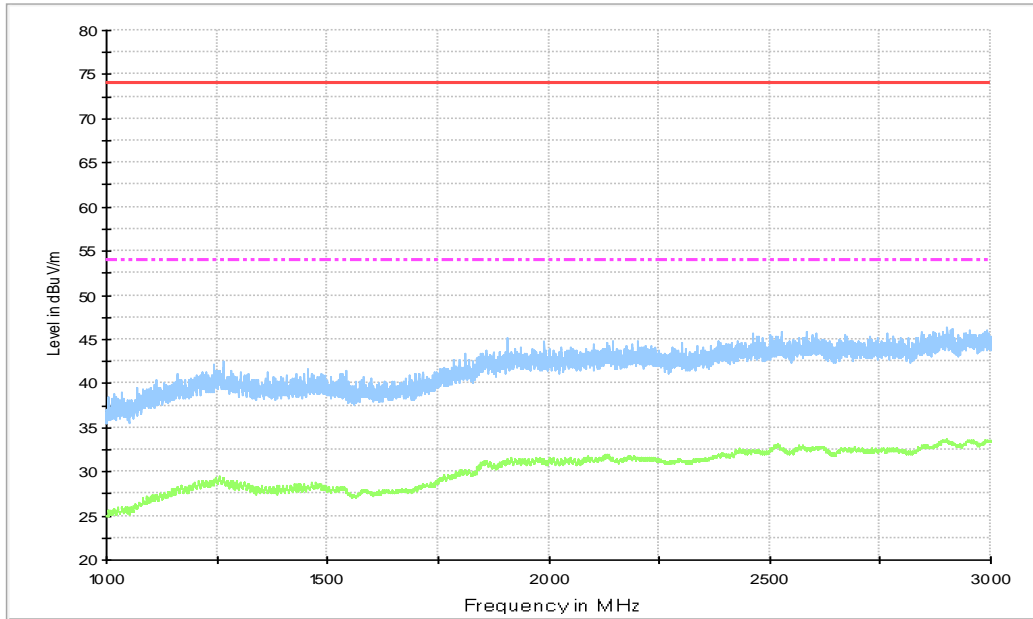


Figure A.5 Radiated Emission from 1GHz to 3GHz

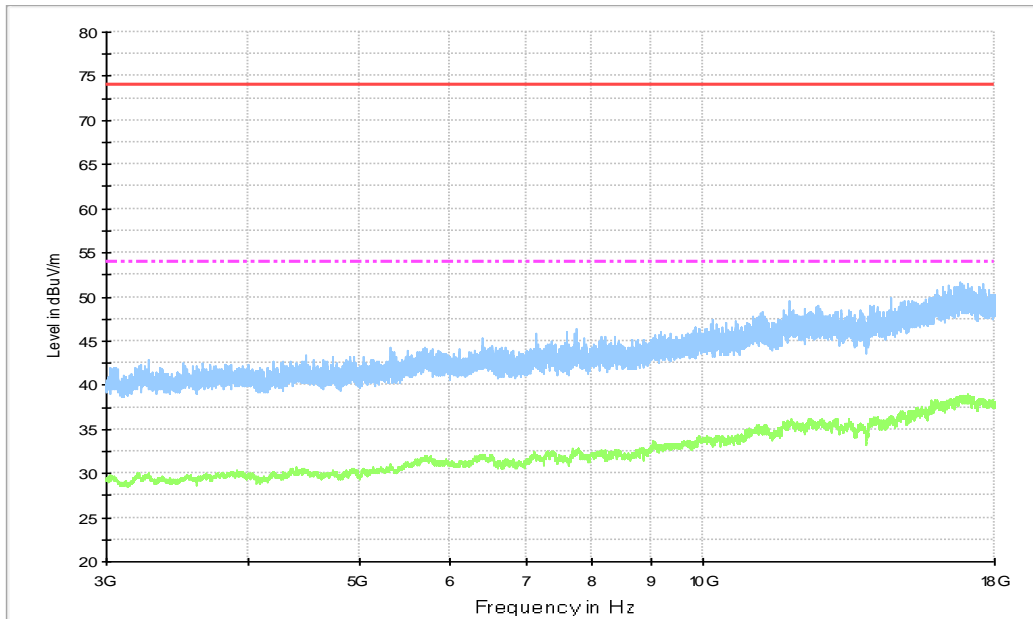


Figure A.6 Radiated Emission from 3GHz to 18GHz

OTG + Headset+ MP4, Set.4+Mode5

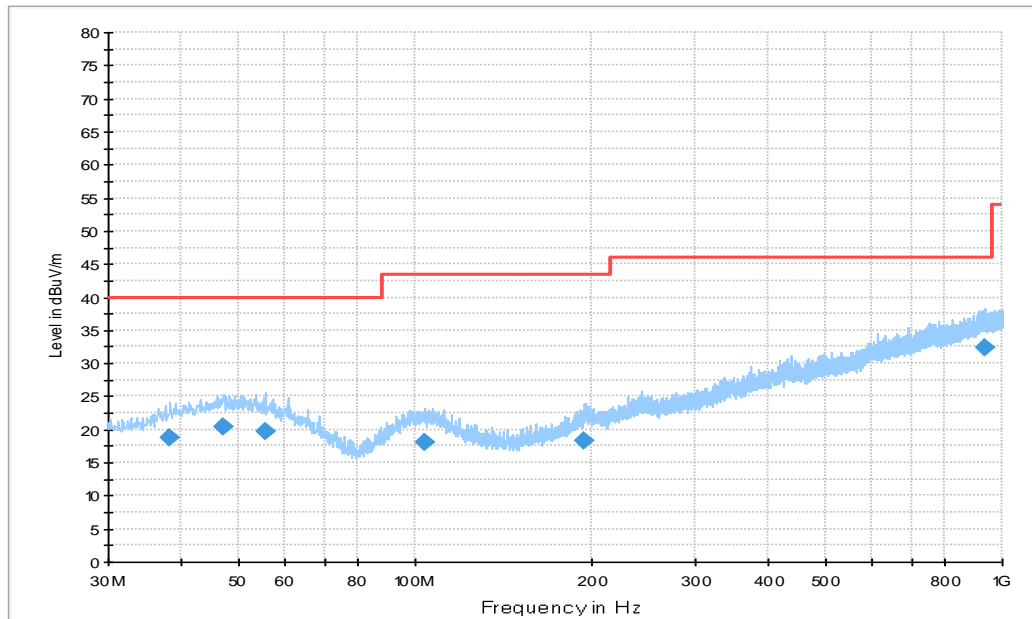


Figure A.7 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
38.245000	18.8	100.0	V	173.0	-1.4	21.2	40.0
47.169000	20.5	100.0	V	225.0	0.4	19.5	40.0
55.705000	19.8	100.0	H	192.0	-0.1	20.2	40.0
104.10800	18.1	113.0	H	135.0	-1.2	25.4	43.5
194.60900	18.4	100.0	V	83.0	-0.8	25.1	43.5
936.07700	32.4	100.0	V	38.0	13.1	13.6	46.0

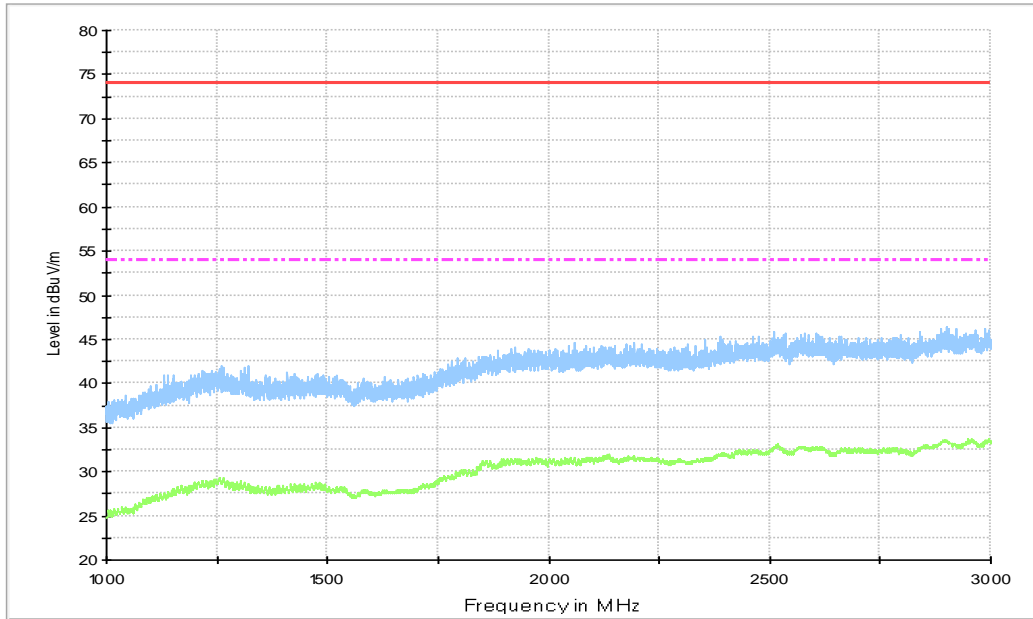


Figure A.8 Radiated Emission from 1GHz to 3GHz

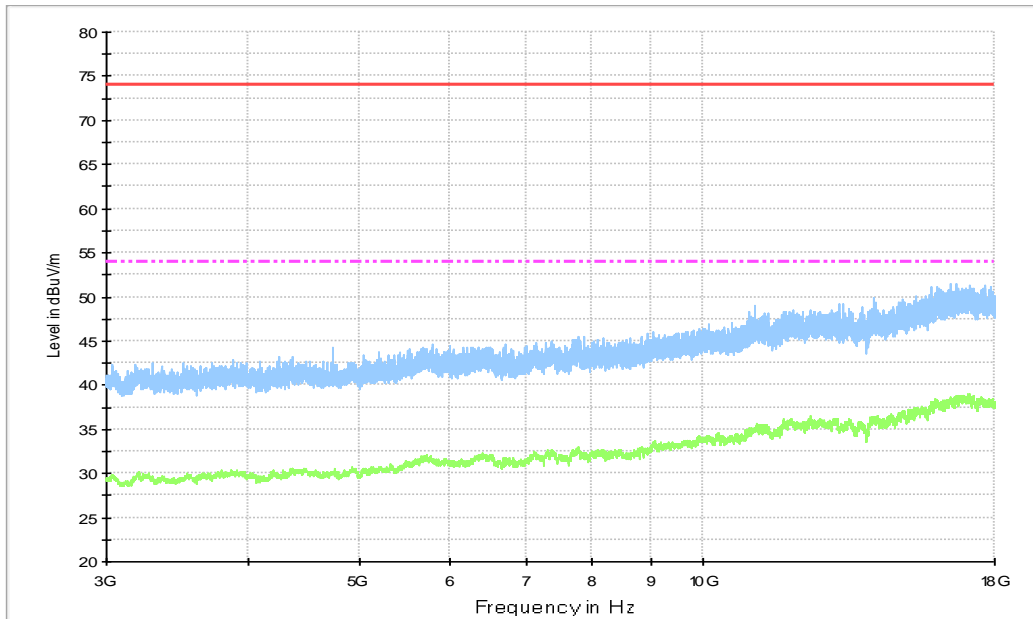


Figure A.9 Radiated Emission from 3GHz to 18GHz

USB mode (SD) + Headset + RX LTE Band5, Set.6+Mode7+Mode9

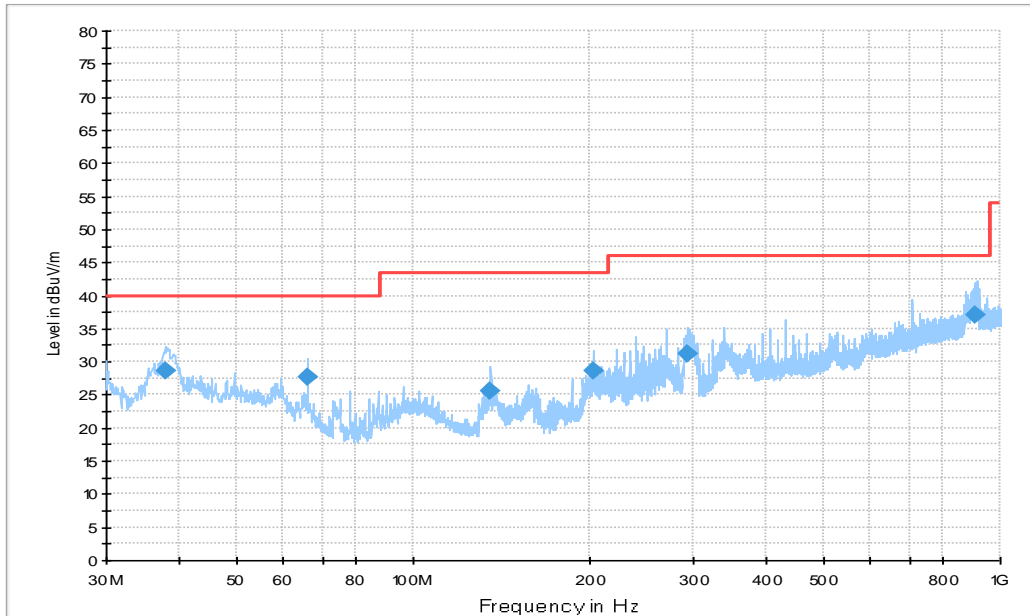


Figure A.10 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)
37.954000	28.6	100.0	V	-39.0	-1.4	11.4	40.0
66.084000	27.7	100.0	V	270.0	-2.4	12.3	40.0
135.43900	25.5	113.0	H	263.0	-4.5	18.0	43.5
203.24200	28.7	125.0	H	198.0	-1.0	14.8	43.5
293.25800	31.3	100.0	H	173.0	1.2	14.7	46.0
905.52200	37.2	113.0	V	186.0	12.9	8.8	46.0

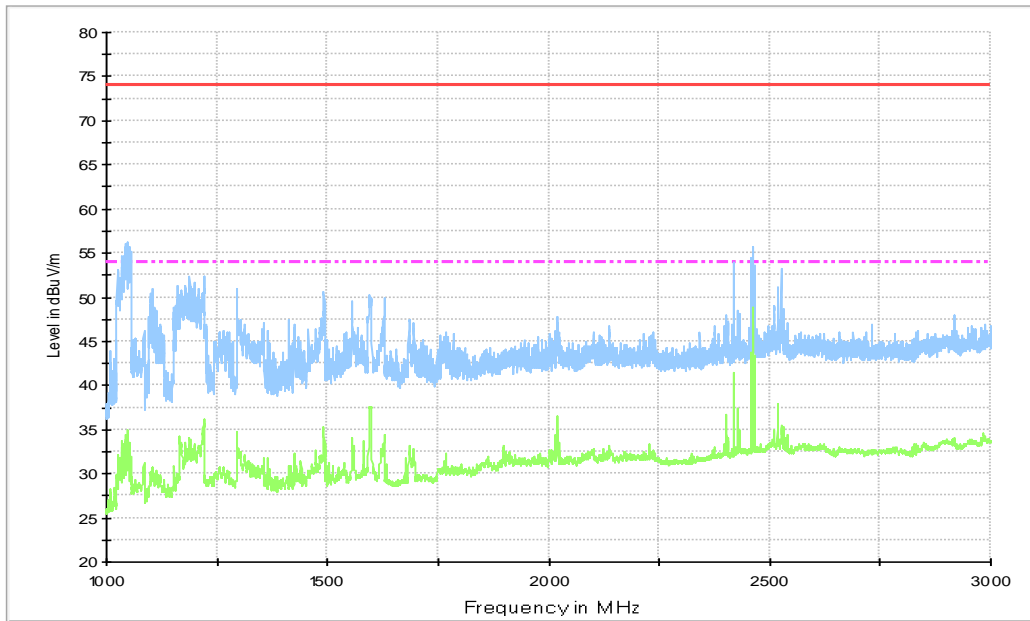


Figure A.11 Radiated Emission from 1GHz to 3GHz

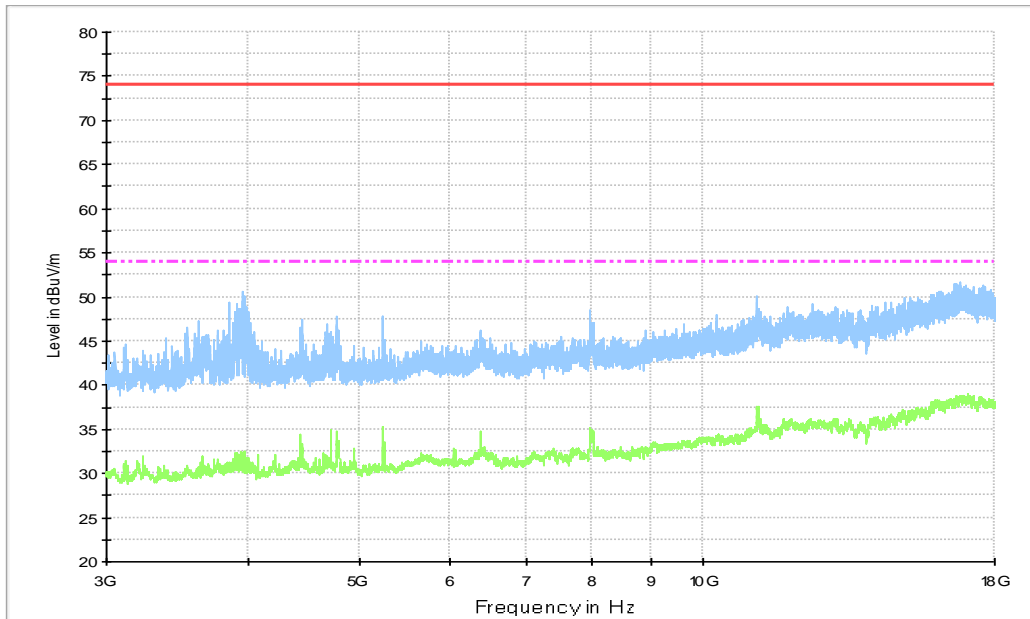


Figure A.12 Radiated Emission from 3GHz to 18GHz

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

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 μ 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: $U= 3.10\text{dB}$, $k=2$.

Note: all the set-up and operating mode list in section 3.5 were tested, only the worst test data are showed in this section.

Set.1+Mode3

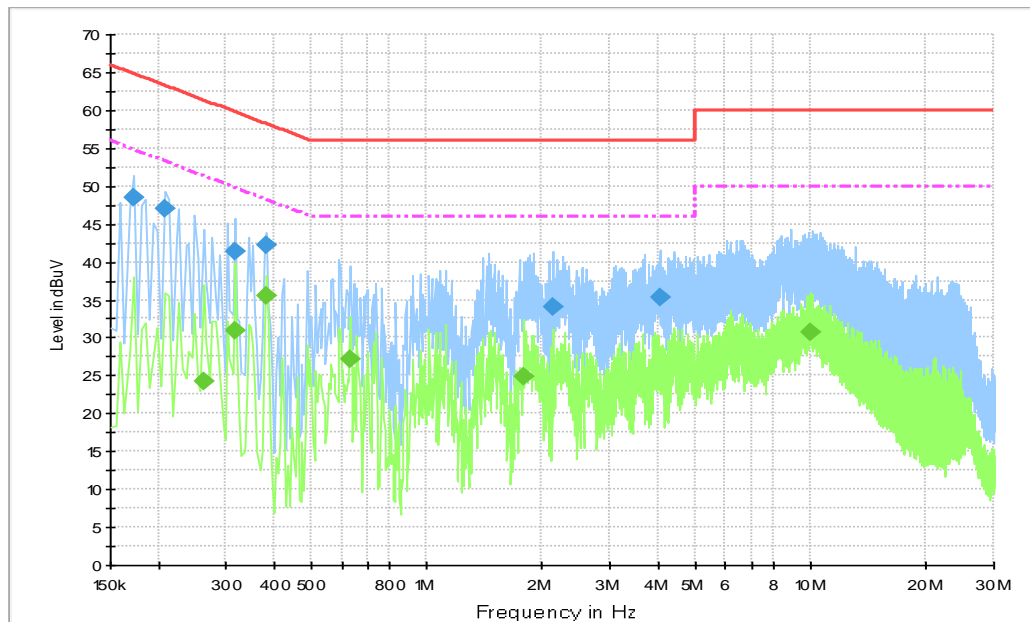


Figure A.13 Conducted Emission

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.172500	48.5	9.000	On	L1	19.9	16.3	64.8
0.208500	47.0	9.000	On	L1	19.7	16.3	63.3
0.316500	41.3	9.000	On	L1	19.8	18.5	59.8
0.384000	42.3	9.000	On	L1	19.8	15.9	58.2
2.139000	34.0	9.000	On	N	19.6	22.0	56.0
4.038000	35.2	9.000	On	L1	19.6	20.8	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.262500	24.2	9.000	On	N	19.8	27.1	51.4
0.316500	30.9	9.000	On	N	19.8	18.9	49.8
0.384000	35.5	9.000	On	L1	19.8	12.7	48.2
0.631500	27.3	9.000	On	N	19.7	18.7	46.0
1.792500	24.9	9.000	On	N	19.6	21.1	46.0
9.982500	30.7	9.000	On	N	19.7	19.3	50.0

Set.2+Mode2

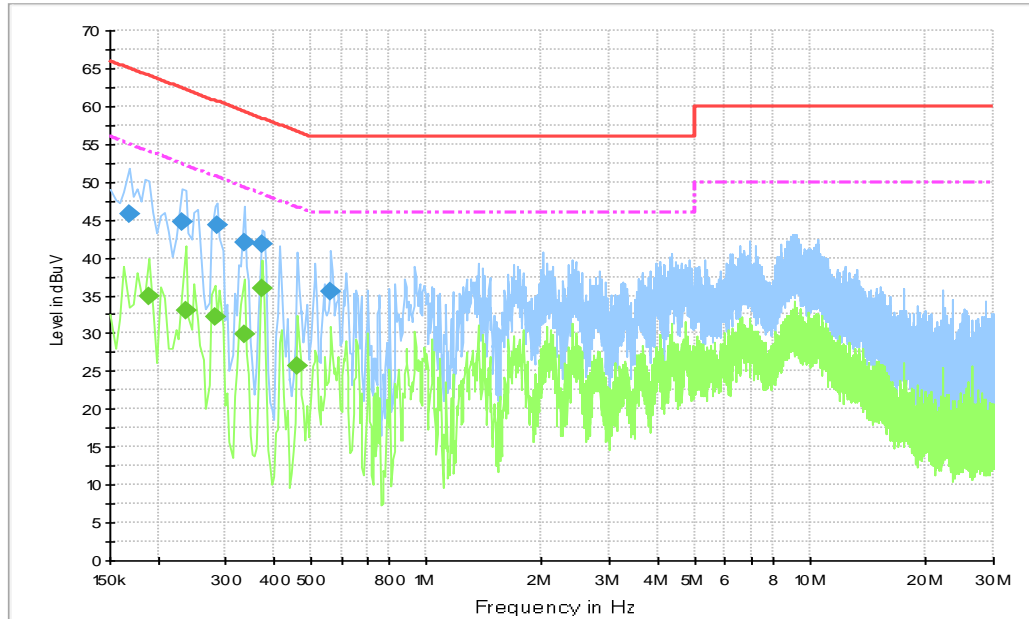


Figure A.14 Conducted Emission

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.168000	45.7	9.000	On	N	19.9	19.3	65.1
0.231000	44.6	9.000	On	N	19.8	17.8	62.4
0.285000	44.2	9.000	On	N	19.7	16.4	60.7
0.334500	42.1	9.000	On	N	19.8	17.2	59.3
0.375000	41.8	9.000	On	N	19.8	16.6	58.4
0.564000	35.5	9.000	On	N	19.8	20.5	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190500	34.9	9.000	On	N	19.8	19.2	54.0
0.235500	33.0	9.000	On	L1	19.8	19.2	52.3
0.280500	32.1	9.000	On	L1	19.7	18.7	50.8
0.334500	29.9	9.000	On	L1	19.8	19.4	49.3
0.375000	35.8	9.000	On	L1	19.8	12.6	48.4
0.460500	25.7	9.000	On	L1	19.8	21.0	46.7

Set.7+Mode7, USB (SD) mode

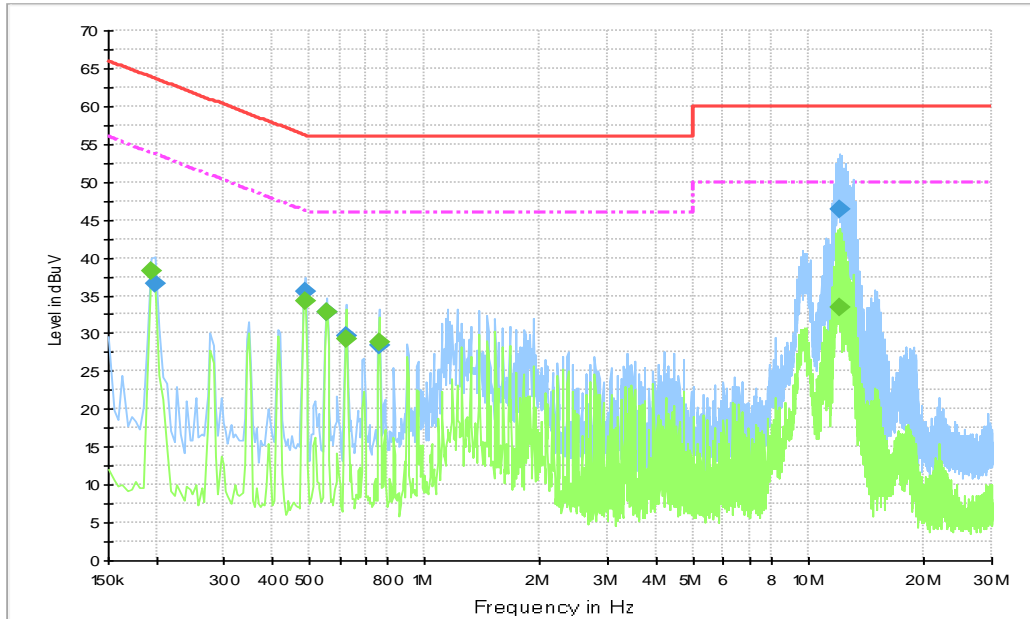


Figure A.15 Conducted Emission

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.199500	36.5	9.000	On	L1	19.7	27.2	63.6
0.487500	35.5	9.000	On	N	19.8	20.7	56.2
0.555000	32.8	9.000	On	L1	19.8	23.2	56.0
0.622500	29.6	9.000	On	L1	19.7	26.4	56.0
0.762000	28.4	9.000	On	N	19.7	27.6	56.0
12.106500	46.5	9.000	On	N	19.8	13.5	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.195000	38.3	9.000	On	N	19.7	15.6	53.8
0.487500	34.4	9.000	On	N	19.8	11.9	46.2
0.555000	32.8	9.000	On	N	19.8	13.2	46.0
0.622500	29.2	9.000	On	N	19.7	16.8	46.0
0.762000	28.8	9.000	On	L1	19.7	17.2	46.0
12.102000	33.5	9.000	On	N	19.8	16.5	50.0



ANNEX B: Persons involved in this testing

Test Item	Tester
Radiated Emission	Zhao Wenhui
Conducted Emission	Guo Qian

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