TEST REPORT

No. 24T04Z200128-001

for

Samsung Electronics Co., Ltd.

Multi-band GSM/WCDMA/LTE Mobile Phone with Bluetooth, WLAN

Model Name: SM-A065F/DS

with

FCC ID: ZCASMA065F

Hardware Version: REV1.0

Software Version: A065F.001

Issued Date: 2024-06-25

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:

CTTL-Telecommunication Technology Labs, CAICT

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

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
24T04Z200128-001	Rev.0	1st edition	2024-06-25

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

CONTENTS

1. Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under American Association for Laboratory Accreditation (A2LA) with lab code 7049.01, and is also an FCC accredited test laboratory (CN1349), and ISED accredited test laboratory (CAB identifier:CN0066). The detail accreditation scope can be found on A2LA 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: 2024-05-21

Testing End Date: 2024-06-15

1.5. Signature

Li Yan

(Prepared this test report)

Zhang Ying

(Reviewed this test report)

Zhang Xia

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 Person:	Jenni Chun
Contact Email	j1.chun@samsung.com
Telephone:	+1-201-937-4203
Fax	/

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 Person:	Sunghoon Cho
Contact Email	ggobi.cho@samsung.com
Telephone:	+82-10-2722-4159
Fax	/

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

3.1. About EUT

Description	Multi-band GSM/WCDMA/LTE Mobile Phone with Bluetooth, WLAN
Model name	SM-A065F/DS
FCC ID	ZCASMA065F

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*	IMEI/SN	HW Version	SW Version
EUT1	2404200128UT15a	REV1.0	A065F.001
EUT2	2404200128UT16a	REV1.0	A065F.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*	Name	Model	Manufacturer
AE1-1	Battery	HQ-7160SS	SCUD (FUJIAN) Electronics Co., Ltd.
AE1-2	Battery	HQ-7160SD	SCUD (FUJIAN) Electronics Co., Ltd.
AE1-3	Battery	HQ-7160NA	Ningde Amperex technology limited
AE2-1*	Adapter	EP-TA800	SOLUM CO.,LTD.
AE2-2*	Adapter	EP-T1510	DONGYANG E&P INC.
AE2-3*	Adapter	EP-TA200	RFTECH ELECTRONICS (HUIZHOU) CO., LTD
AE3-1	Date Cable1 C-C	EP-DN980BWE	RFTECH ELECTRONICS (HUIZHOU) CO., LTD
AE3-2	Date Cable2 C-C	EP-DN980BWE	Guangxi Broad Telecommunication Co.,Ltd.
AE3-3	Date Cable3 C-C	EP-DN980BWE	Cresyn electronics(Dongguan)Co;Ltd.
AE3-4	Date Cable4 C-C	EP-DN980BWE	ASAP TECHNOLOGY(JIANGXI) CO.,LTD.
AE4*	Date Cable5 C-A	EP-DR140AWE	Cresyn electronics(Dongguan)Co;Ltd.
AE5*	Headset	EHS61ASFWE	Dongguan YoungBo Electronics
AE6*	PC	/	/
AE7*	SD card	/	/
AE8*	MHD	/	/

* The USB cables are shielded.

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

*AE2-1, AE2-2, AE2-3, AE4 and A5 are not the AE for EUT, provided by the client for relevant tests.

*AE6, AE7 and AE8 are not the AE for EUT, provided by the Lab for relevant tests.

3.4. General Description

Description	Multi-band GSM/WCDMA/LTE Mobile Phone with Bluetooth, WLAN	
Model name	SM-A065F/DS	
Marketing name	Galaxy A06	
Brand name	SAMSUNG	
Cellular Bands	☒GSM	Bands 850/900/1800MHz
	☐CDMA	/
	☒WCDMA	Bands 1/5/8
	☒LTE	Bands 1/3/5/7/8/20/28/38/40/41
	☐5G NR SA	/
	☐5G NR NSA	/
Unlicensed Radio	☒Wi-Fi 2.4GHz	802.11b/g/n(20MHz)
	☒Wi-Fi 5GHz	802.11a/n(20MHz,40MHz)/ac(20MHz,40MHz,80MHz)
	☒Wi-Fi 5.8GHz	802.11a/n(20MHz,40MHz)/ac(20MHz,40MHz,80MHz)
	☒Bluetooth	☒EDR ☐BLE4 ☒BLE5
Other	☒GNSS	☒GPS ☒BDS ☒Gallileo ☒Glonass
	☒FM ☒MP3 ☒MP4 ☒Camera ☒USB ☐NFC ☒External memory	

The device contains receivers which tune and operate between 30MHz-960MHz in the following bands: GSM850, WCDMA Band 5, and LTE Band5.
Samples undergoing test were selected by the client.
Manual and specifications of the EUT were provided to fulfil the test.
For more EUT information please refers to the manufacturer's specifications or user's manual.

3.5. EUT set-ups

Set-up

EUT set-up No.	Combination of EUT and AE	Remarks
Set.1	EUT + AE2-1 + AE3-1/2/3/4 +AE5	Adapter1 + cable + headset
Set.2	EUT + AE2-2 + AE3-1/2/3/4	Adapter1
Set.3	EUT + AE2-2 + AE3-1/2/3/4 +AE5	Adapter2 + cable+ headset
Set.4	EUT + AE2-3 + AE4 +AE5	Adapter3 + cable+ headset
Set.5	EUT + AE5	headset
Set.6	EUT + AE3-1/2/3/4 + EUT	EUT+EUT
Set.7	EUT + AE3-1/2/3/4 + HD	EUT+HD
Set.8	EUT + AE3-1/2/3/4 + PC	Type C communication with PC
Set.9	EUT + AE4 + PC + SD	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 charging	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.8	FM mode	FM(Low/Mid/High channel)
mode.9	CXX RX mode	GSM850, WCDMA Band 5 and LTE Band 5 (Low/Mid/High channel)

4. Reference Documents

4.1. Documents supplied by applicant

EUT parameters are supplied by the client or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

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

Reference	Title	Version
FCC 47 CFR Part 15, Subpart B	Radio frequency devices - Unintentional Radiators	2021
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 Electrical insulation	0.014MHz-1MHz, >60dB; 1MHz－1000MHz, >90dB. > 2 MΩ
Ground system resistance	< 4 Ω
Temperature	Min. = 15 ˚C, Max. = 35 ˚C

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 Facilities Utilized

Test Equipment

NO.	Description	TYPE	SERIES NUMBER	MANUFACTURER	CAL DUE DATE	CALIBRATION INTERVAL
1	Test Receiver	ESU26	100376	R&S	2024-06-29	1 year
2	Test Receiver	ESCI	100766	R&S	2025-04-18	1 year
3	LISN	ENV216	101459	R&S	2025-04-18	1 year
4	BiLog Antenna	VULB9163	302	Schwarzbeck	2024-08-28	1 year
5	EMI Antenna	3115	00119021	ETS-Lindgren	2024-06-24	1 year
6	Vector Signal Generator	SMF100A	101295	R&S	2025-01-25	1 Year
7	Universal Radio Communication Tester	CMW500	169743	R&S	2025-01-25	1 Year
8	Printer	P1606dn	VNC3L52122	HP	N/A	N/A
9	Keyboard	KU-1601	2048361	Lenovo	N/A	N/A
10	Mouse	EMS-537A	8021S3MC	Lenovo	N/A	N/A
11	PC	M4000e-17	M706RMW2	Lenovo	N/A	N/A
12	PC	T14S	PC-1RP0TY	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 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 and arranged in a typical configuration in accordance with ANSI C63.4-2014 and manipulated to obtain worst case emissions. 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.

For the test setup photographs please see the test setup photos document.

A.1.2 EUT Operating Mode

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

The FM radio mode radiated testing was performed with the Low/Mid/High channel. Only the worst cases 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 (μV/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.

A.1.4 Test Condition

Voltage（V）	Frequency（Hz）
120	60

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:

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

Where

G_A: Antenna factor of receive antenna

G_{PL}: Path Loss

P_{Mea}: Measurement result on receiver.

Measurement uncertainty (worst case): 30MHz-1GHz：5.73dB, 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.

Set.1+Mode3, Rear Camera

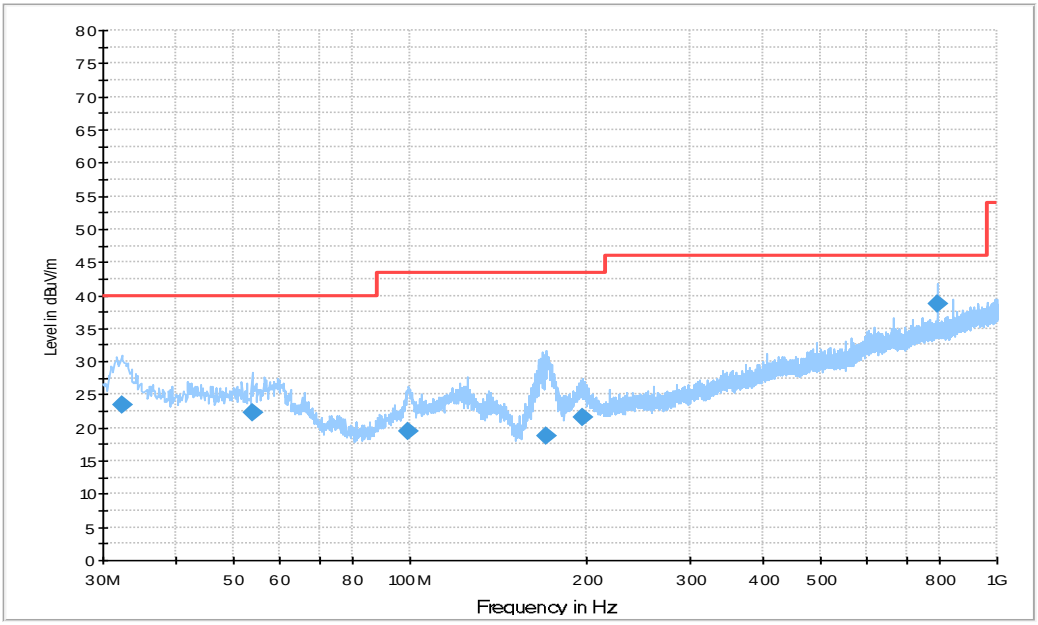


Figure A.1 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
32.231000	23.4	100.0	V	121.0	-1.3	16.6	40.0
53.765000	22.3	113.0	V	25.0	-0.5	17.7	40.0
99.549000	19.4	125.0	V	83.0	-0.6	24.1	43.5
171.00100	18.7	100.0	V	-20.0	-3.0	24.8	43.5
196.78000	21.7	100.0	V	-20.0	-0.3	21.8	43.5
791.97200	38.8	113.0	H	283.0	11.9	7.2	46.0

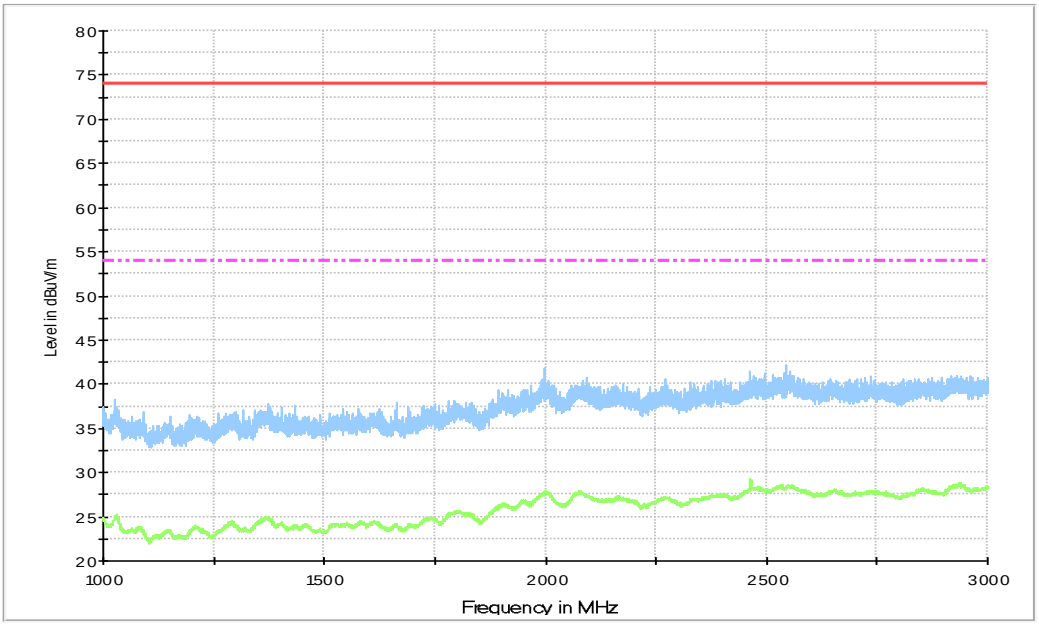


Figure A.2 Radiated Emission from 1GHz to 3GHz

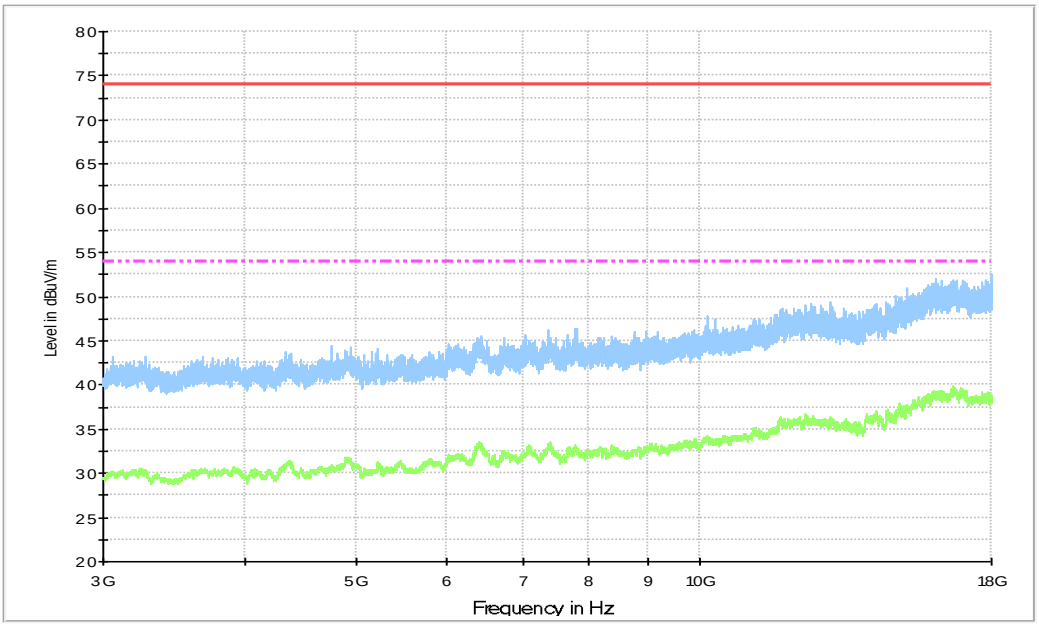


Figure A.3 Radiated Emission from 3GHz to 18GHz

Average detector result

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
16642.50	39.31	-24.74	41.43	22.62	54.00	14.69	V
16628.50	39.20	-24.17	41.06	22.31	54.00	14.80	V
16017.50	39.19	-23.05	40.50	21.74	54.00	14.81	V
16639.50	39.19	-24.32	41.23	22.28	54.00	14.81	V
16950.00	39.18	-24.58	41.44	22.32	54.00	14.82	V
16626.00	39.17	-24.43	41.25	22.35	54.00	14.83	V

Peak detector result

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
16023.50	52.28	-24.52	41.50	35.31	74.00	21.72	V
16663.50	51.93	-24.43	41.24	35.11	74.00	22.07	H
16159.50	51.86	-24.53	40.88	35.51	74.00	22.14	V
16426.50	51.77	-23.42	40.50	34.69	74.00	22.23	V
17707.00	51.65	-24.83	41.30	35.18	74.00	22.35	V
16319.00	51.65	-24.51	41.04	35.12	74.00	22.35	V

Set.3+Mode2+Mode9, Front Camera + RX WCDMAB5

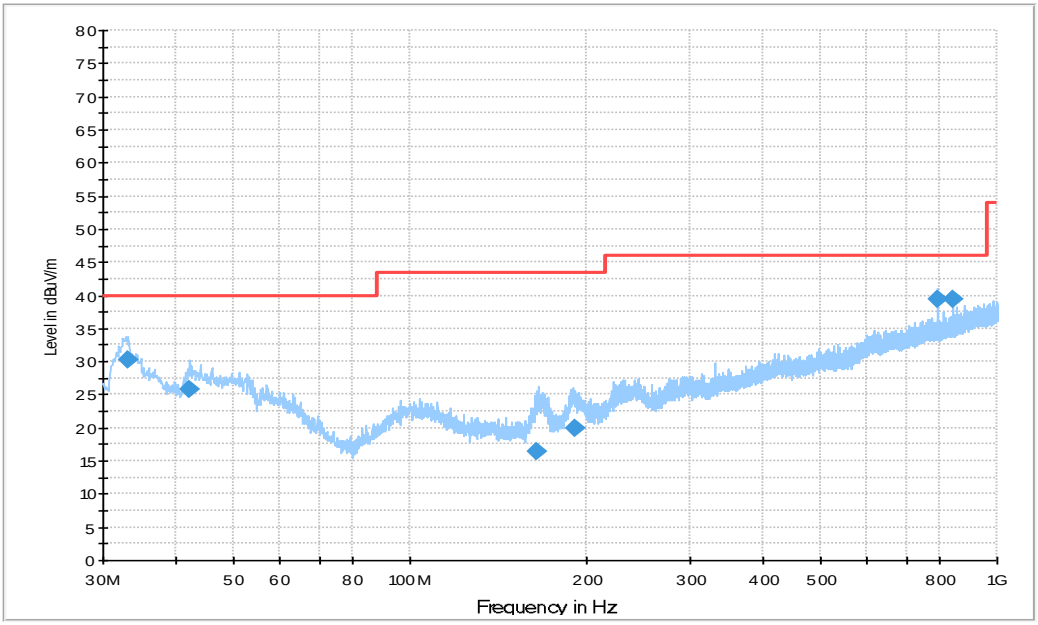


Figure A.4 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
33.141000	30.3	100.0	V	84.0	-1.1	9.7	40.0
41.991000	25.8	100.0	V	18.0	0.5	14.2	40.0
164.69600	16.5	100.0	V	192.0	-3.3	27.0	43.5
190.63200	19.9	100.0	V	-20.0	-0.9	23.6	43.5
791.97200	39.4	113.0	H	276.0	11.9	6.6	46.0
839.98700	39.3	100.0	H	269.0	12.4	6.7	46.0

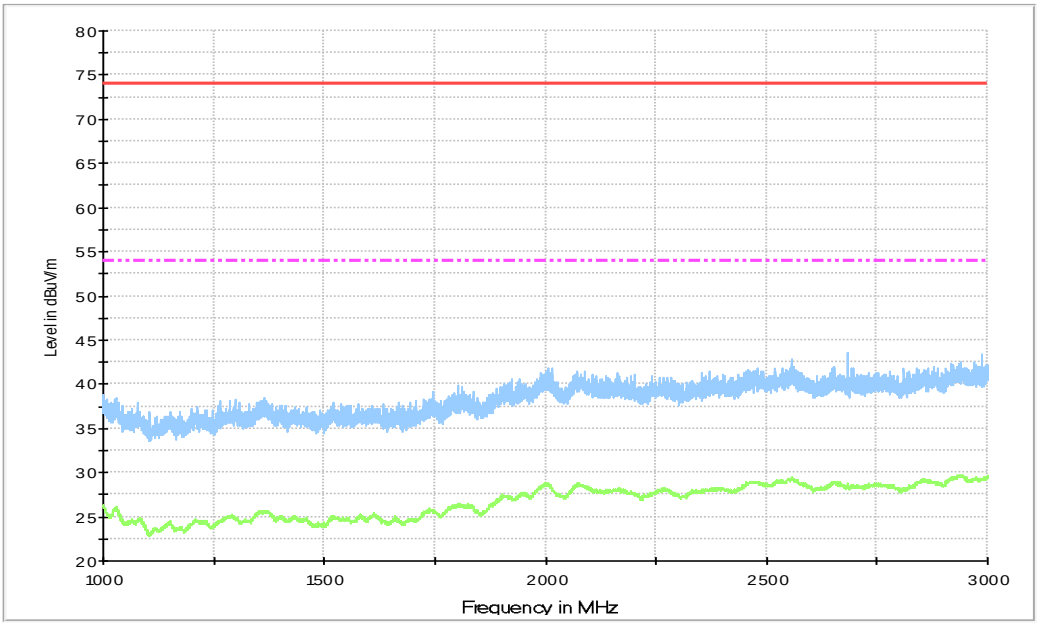


Figure A.5 Radiated Emission from 1GHz to 3GHz

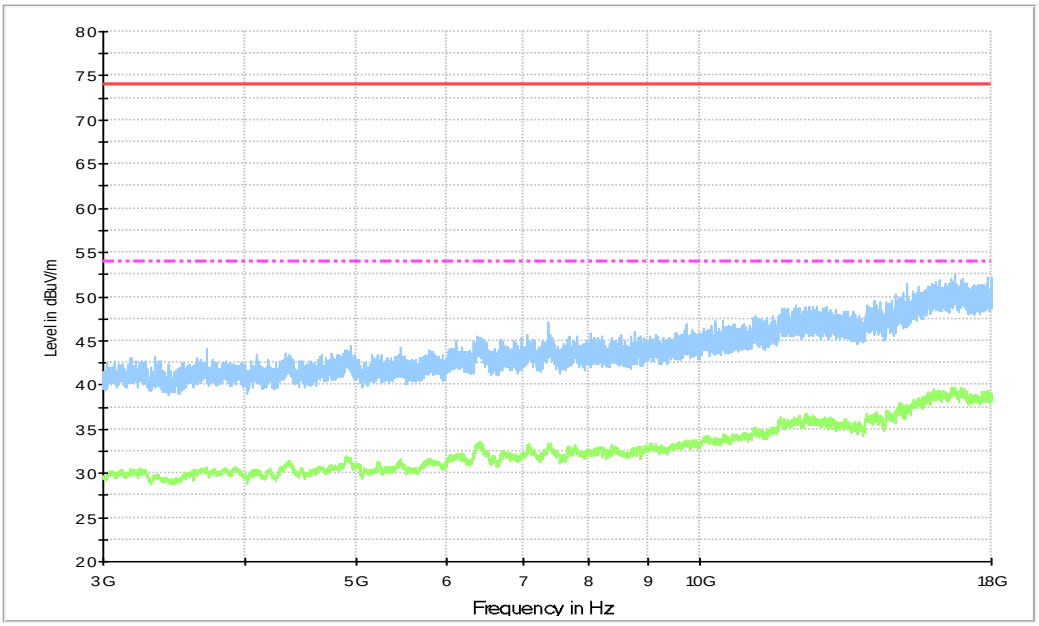


Figure A.6 Radiated Emission from 3GHz to 18GHz

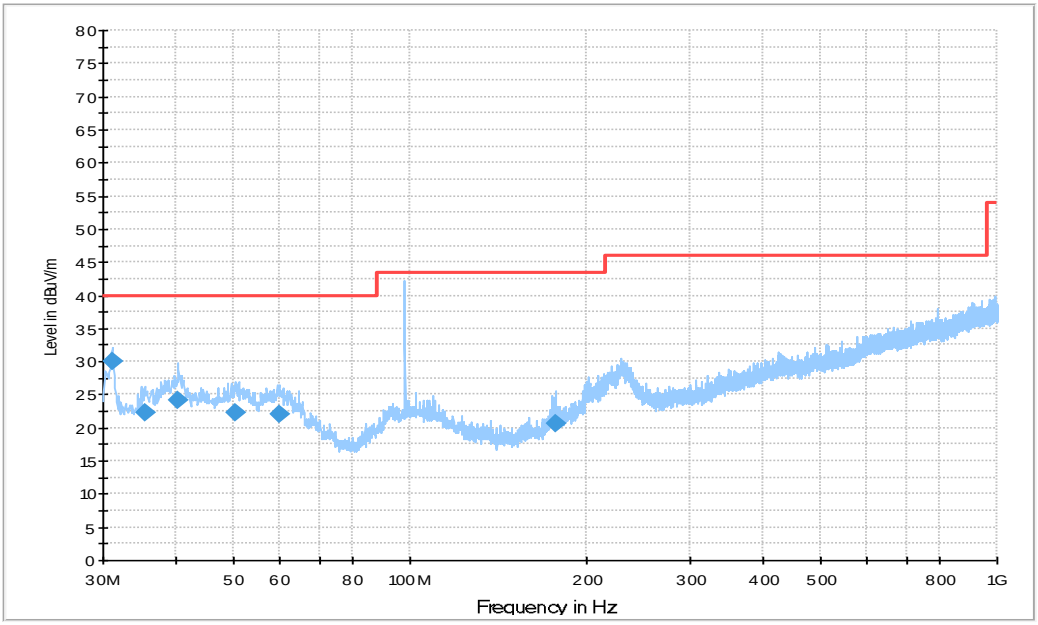
Average detector result

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
16641.00	39.45	-23.02	40.50	21.97	54.00	14.55	H
16940.50	39.40	-23.15	40.50	22.05	54.00	14.60	H
16019.50	39.38	-24.20	41.06	22.52	54.00	14.62	H
16695.50	39.31	-23.44	40.50	22.25	54.00	14.69	H
16638.00	39.31	-23.12	40.50	21.93	54.00	14.69	H
16635.00	39.30	-23.42	40.50	22.22	54.00	14.70	H

Peak detector result

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
16074.00	52.28	-23.39	40.50	35.16	74.00	21.72	H
16014.50	51.78	-24.36	40.80	35.34	74.00	22.22	H
16701.50	51.76	-23.32	40.50	34.58	74.00	22.24	H
17053.50	51.73	-24.68	41.41	35.01	74.00	22.27	V
16165.00	51.70	-24.60	41.46	34.84	74.00	22.30	V
16953.50	51.66	-25.42	41.21	35.87	74.00	22.34	H

Set.4+Mode8, FM



Note: the single at 98MHz is coming from FM signal source.

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

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
31.164000	30.1	100.0	V	218.0	-1.4	9.9	40.0
35.335000	22.2	100.0	V	32.0	-0.6	17.8	40.0
40.282000	24.2	100.0	V	45.0	0.3	15.8	40.0
50.273000	22.4	100.0	V	83.0	0.4	17.6	40.0
59.779000	22.0	100.0	V	135.0	0.2	18.0	40.0
176.76100	20.7	100.0	V	7.0	-2.7	22.8	43.5

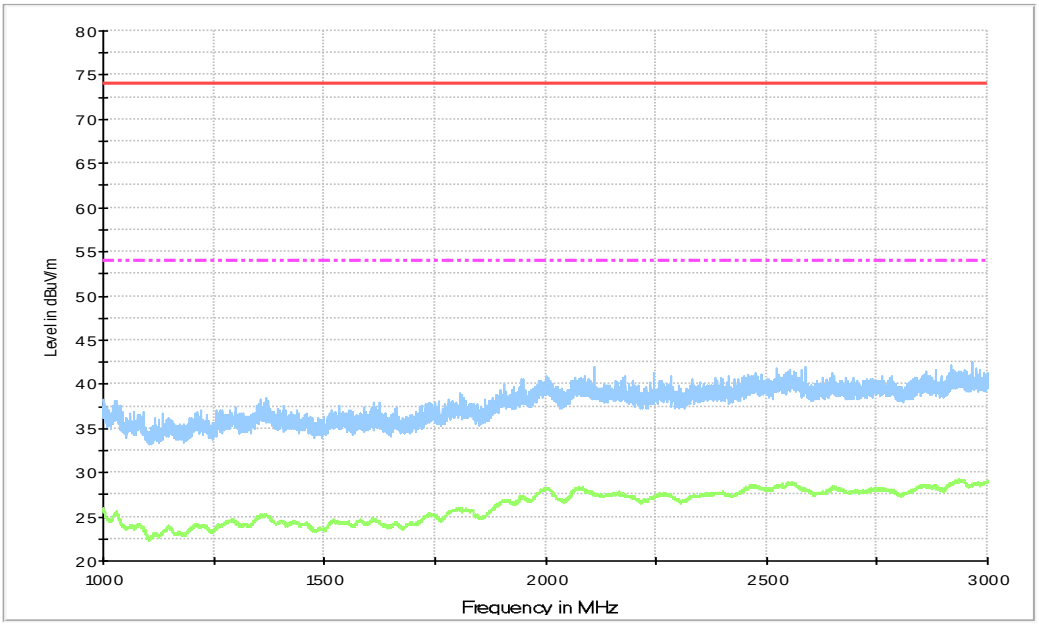


Figure A.8 Radiated Emission from 1GHz to 3GHz

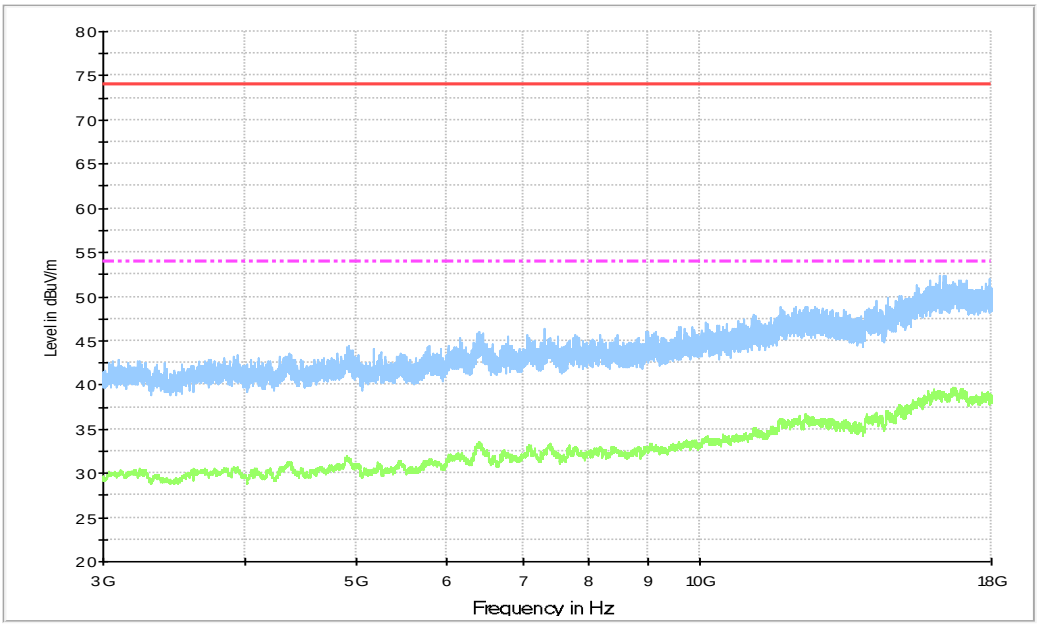


Figure A.9 Radiated Emission from 3GHz to 18GHz

Average detector result

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
16637.50	40.16	-37.83	28.67	49.32	54.00	13.84	H
16630.50	40.16	-38.18	27.90	50.43	54.00	13.84	H
16643.50	40.06	-37.70	28.50	49.25	54.00	13.94	H
16651.50	40.05	-34.58	33.51	41.12	54.00	13.95	H
16625.00	40.05	-34.09	33.99	40.14	54.00	13.95	H
16631.50	40.01	-34.17	34.17	40.01	54.00	13.99	H

Peak detector result

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
16923.00	51.94	-24.38	41.29	35.02	74.00	22.06	H
16168.50	51.93	-24.94	40.90	35.98	74.00	22.07	H
16669.00	51.93	-23.75	40.50	35.17	74.00	22.07	H
16821.50	51.89	-23.74	40.60	35.03	74.00	22.11	H
17064.00	51.83	-24.41	40.60	35.64	74.00	22.17	H
16647.50	51.81	-24.49	40.83	35.47	74.00	22.19	H

Set.7+Mode5+Mode9, OTG + MP4+ RX GSM850

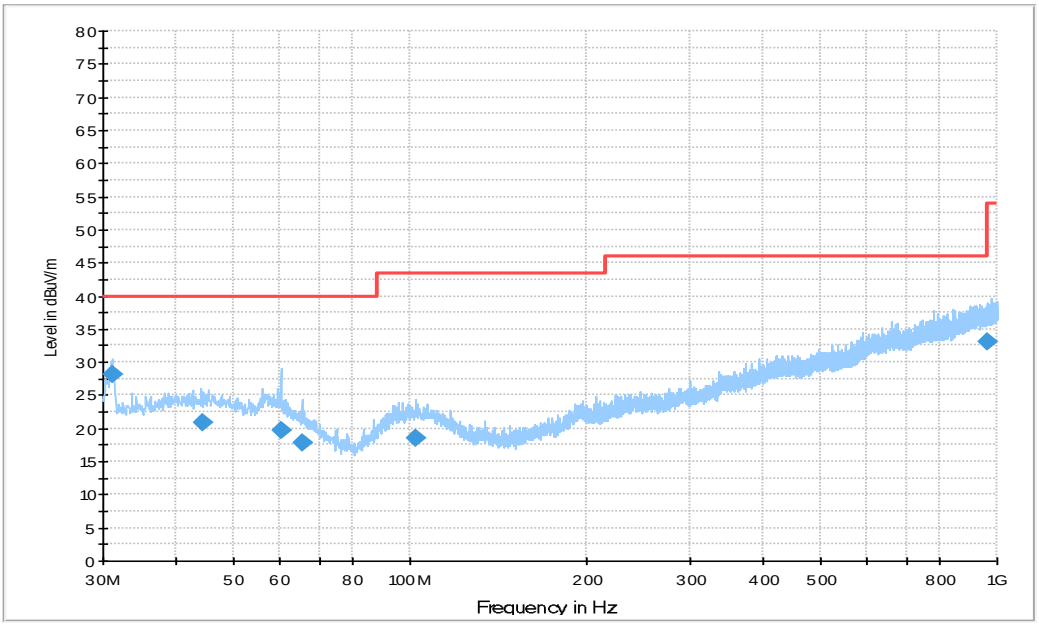


Figure A.10 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
31.067000	28.0	100.0	H	51.0	-1.4	12.0	40.0
44.453000	20.8	125.0	H	173.0	0.7	19.2	40.0
60.264000	19.8	100.0	H	180.0	0.0	20.2	40.0
65.405000	17.9	113.0	H	192.0	-1.7	22.1	40.0
102.16800	18.6	125.0	H	25.0	-0.5	24.9	43.5
959.64800	33.0	125.0	H	205.0	13.9	13.0	46.0

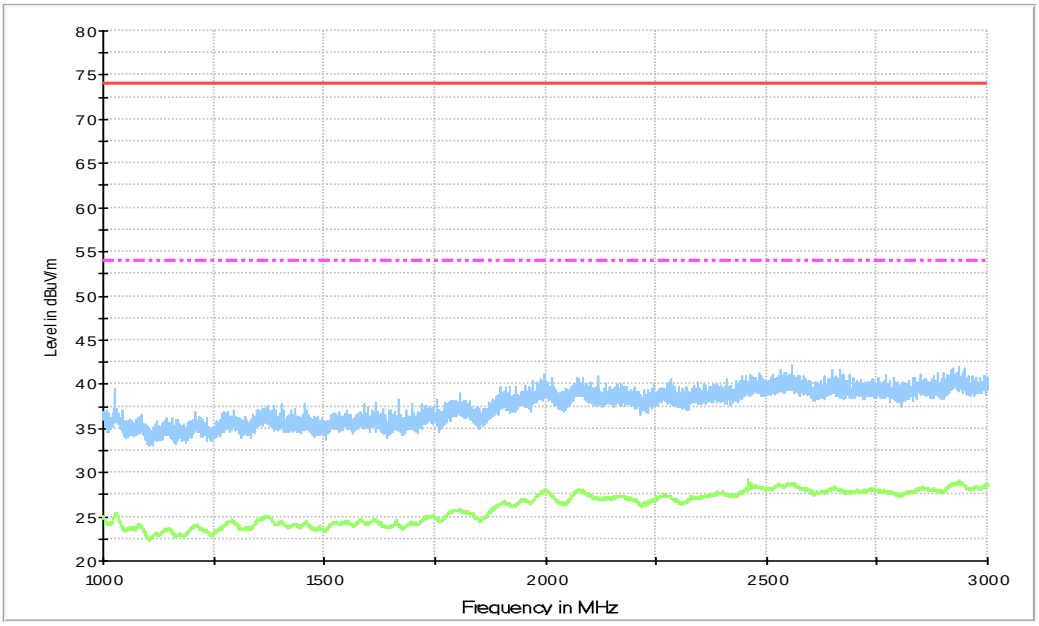


Figure A.11 Radiated Emission from 1GHz to 3GHz

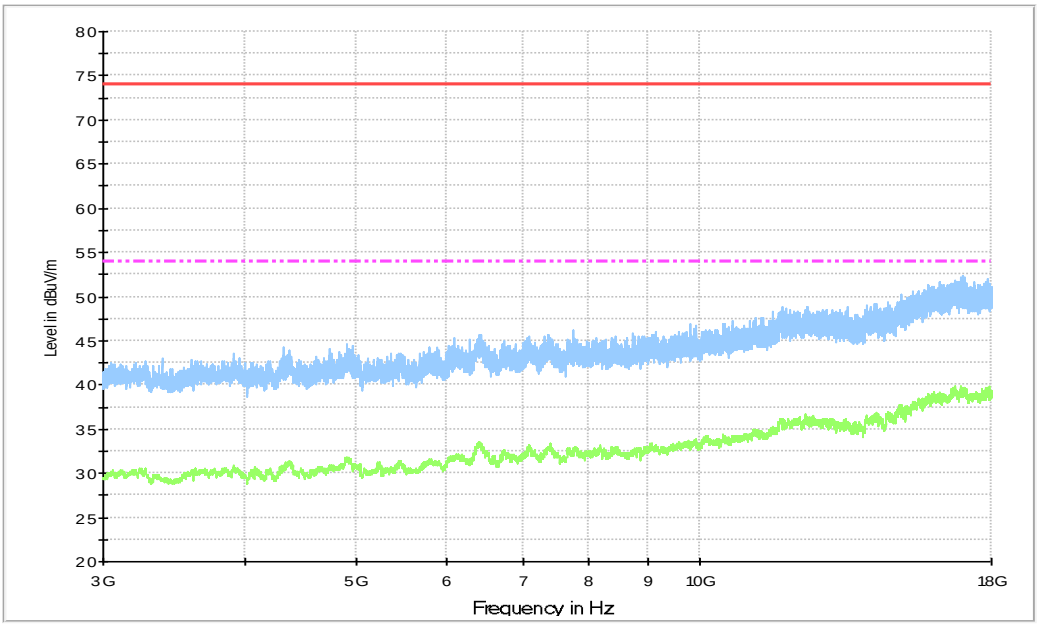


Figure A.12 Radiated Emission from 3GHz to 18GHz

Average detector result

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
16632.00	39.71	-37.83	28.67	48.87	54.00	14.29	H
16638.00	39.68	-38.18	27.90	49.95	54.00	14.32	H
16628.00	39.50	-37.70	28.50	48.69	54.00	14.50	H
16640.00	39.49	-34.58	33.51	40.56	54.00	14.51	H
16626.50	39.48	-34.09	33.99	39.57	54.00	14.52	H
16621.50	39.44	-34.17	34.17	39.44	54.00	14.56	H

Peak detector result

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
16161.50	52.78	-38.06	28.59	62.25	74.00	21.22	H
17018.00	52.55	-38.17	27.91	62.81	74.00	21.45	H
16640.50	52.03	-37.68	28.38	61.33	74.00	21.97	H
16941.00	51.82	-35.21	32.90	54.13	74.00	22.18	V
17600.50	51.76	-34.57	33.40	52.93	74.00	22.24	H
16625.50	51.74	-34.40	33.96	52.18	74.00	22.26	H

Set.9+Mode7+Mode9, USB (SD TO PC) +RX LTE Band5

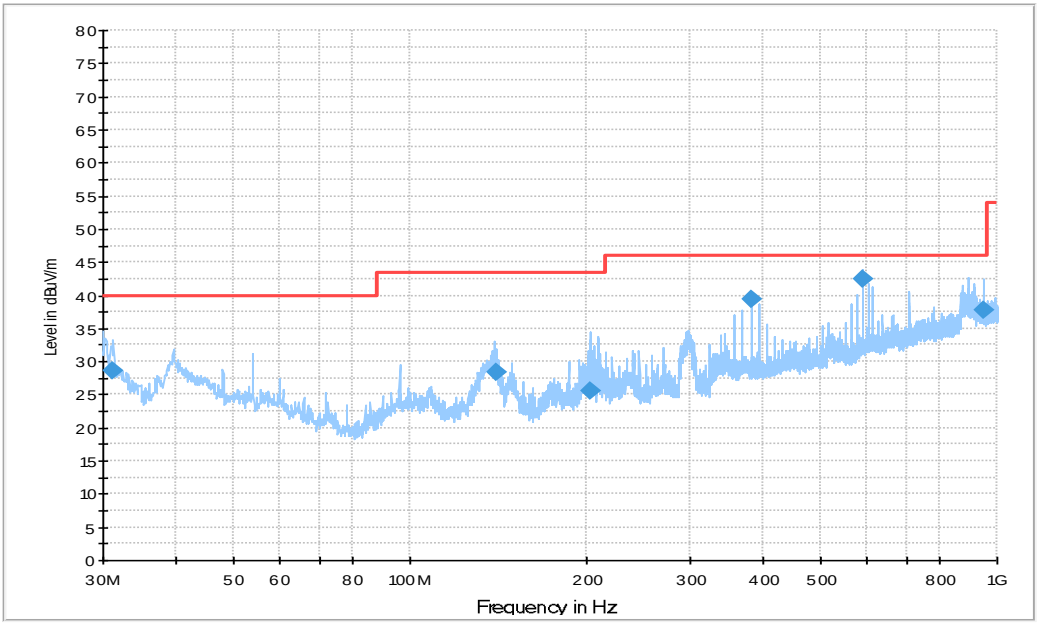


Figure A.13 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
31.261000	28.6	100.0	V	154.0	-1.4	11.4	40.0
140.48300	28.5	100.0	V	25.0	-4.4	15.0	43.5
202.56300	25.6	100.0	H	90.0	-0.9	17.9	43.5
380.94600	39.5	100.0	H	77.0	5.0	6.5	46.0
589.78700	42.6	113.0	H	102.0	9.3	3.4	46.0
948.49300	37.8	125.0	H	-26.0	13.8	8.2	46.0

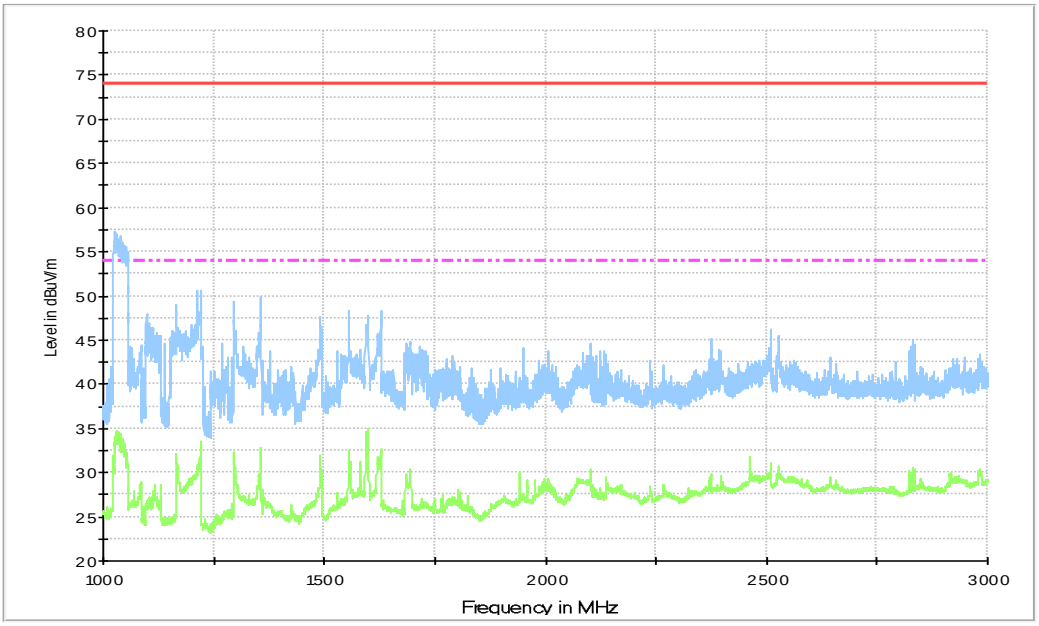


Figure A.14 Radiated Emission from 1GHz to 3GHz

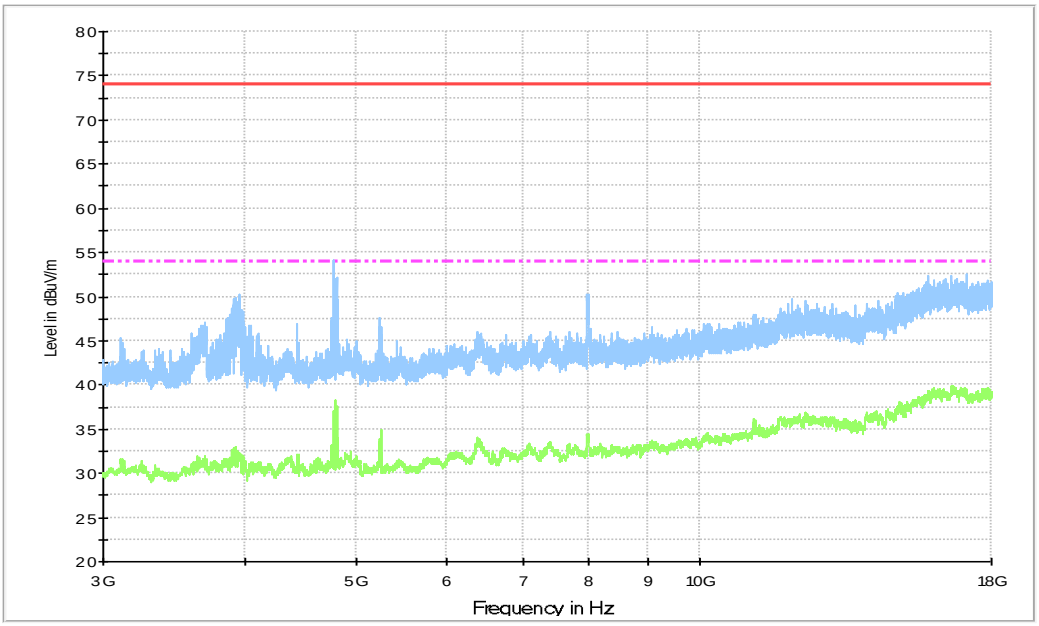


Figure A.15 Radiated Emission from 3GHz to 18GHz

Average detector result

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
1033.00	35.98	-37.83	28.67	45.14	54.00	18.02	H
1220.20	33.71	-38.18	27.90	43.99	54.00	20.29	H
1598.80	35.05	-37.70	28.50	44.25	54.00	18.95	V
4794.50	38.33	-34.58	33.51	39.40	54.00	15.67	H
5253.50	34.89	-34.09	33.99	34.98	54.00	19.11	H
6402.00	33.91	-34.17	34.17	33.91	54.00	20.09	H

Peak detector result

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
1024.60	57.23	-38.06	28.59	66.70	74.00	16.77	H
1210.80	50.66	-38.17	27.91	60.92	74.00	23.34	H
1356.60	49.38	-37.68	28.38	58.68	74.00	24.62	H
3946.00	50.21	-35.21	32.90	52.52	74.00	23.79	V
4779.00	54.19	-34.57	33.40	55.36	74.00	19.81	H
7970.00	50.26	-34.40	33.96	50.70	74.00	23.74	V

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.

For the test setup photographs please see the test setup photos document.

A.2.2 EUT Operating Mode

The EUT is operating in the USB mode, charging mode, FM, MP3, MP4, CAMERA, SD and cellular RX 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 (dBμV)	
	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

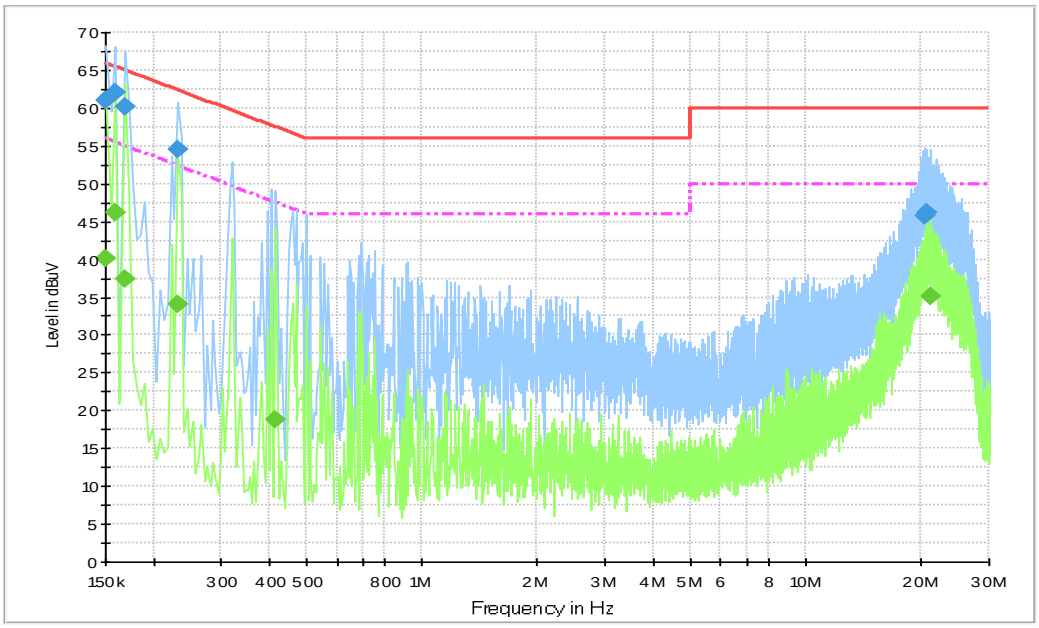
RBW/IF bandwidth	Sweep Time(s)
9kHz	1

A.2.5 Measurement Results

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

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



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

Figure A.16 Conducted Emission

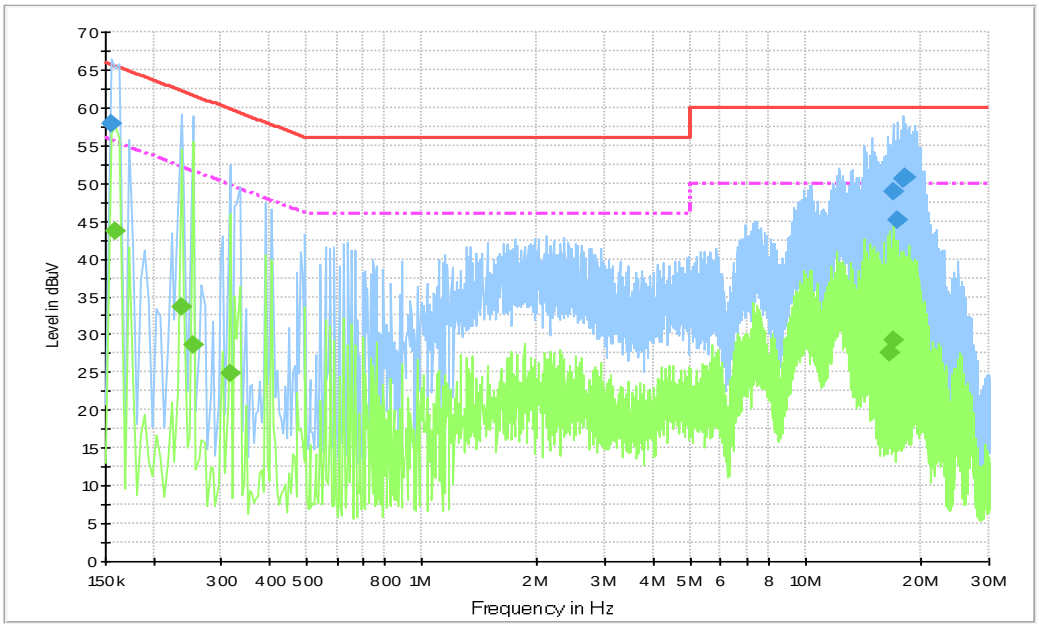
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	61.0	2000.0	9.000	N	20.3	5.0	66.0
0.159000	62.0	2000.0	9.000	N	20.1	3.6	65.5
0.168000	60.2	2000.0	9.000	L1	20.1	4.8	65.1
0.231000	54.6	2000.0	9.000	L1	20.0	7.8	62.4
20.323500	45.7	2000.0	9.000	L1	20.1	14.3	60.0
20.710500	46.1	2000.0	9.000	L1	20.1	13.9	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	40.2	2000.0	9.000	L1	20.2	15.8	56.0
0.159000	46.1	2000.0	9.000	N	20.1	9.4	55.5
0.168000	37.5	2000.0	9.000	N	20.1	17.6	55.1
0.231000	34.1	2000.0	9.000	N	20.1	18.3	52.4
0.415500	18.7	2000.0	9.000	N	20.2	28.8	47.5
21.169500	35.2	2000.0	9.000	N	20.3	14.8	50.0

Set.3+Mode2+ Mode9



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

Figure A.17 Conducted Emission

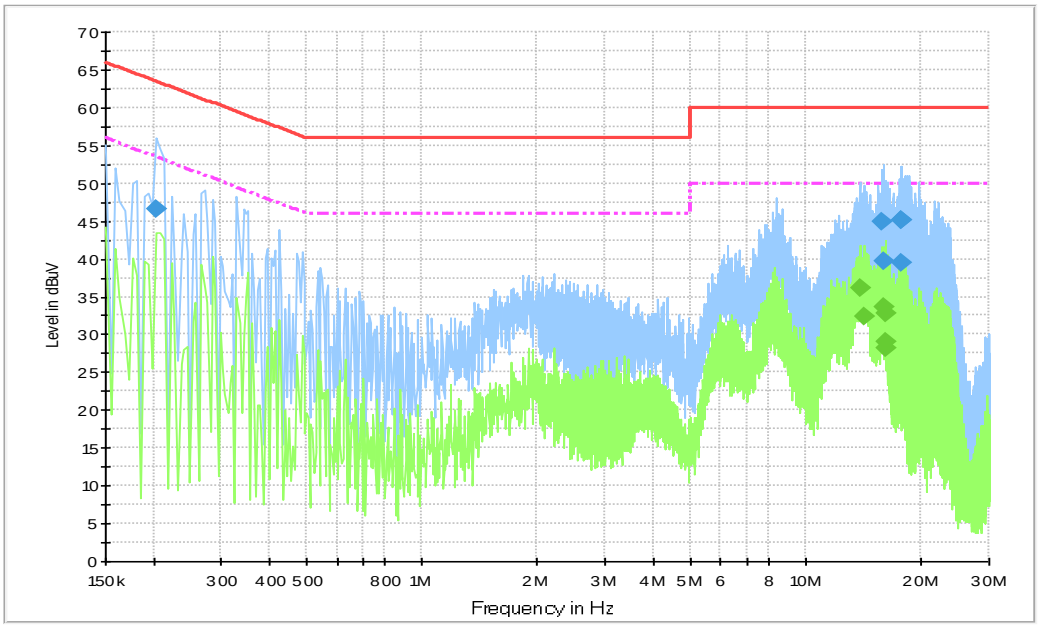
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.154500	57.9	2000.0	9.000	N	20.2	7.8	65.8
16.818000	49.0	2000.0	9.000	N	20.2	11.0	60.0
17.398500	45.2	2000.0	9.000	L1	20.1	14.8	60.0
18.015000	50.5	2000.0	9.000	N	20.2	9.5	60.0
18.105000	50.9	2000.0	9.000	N	20.2	9.1	60.0
18.199500	50.8	2000.0	9.000	N	20.2	9.2	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.159000	43.7	2000.0	9.000	L1	20.1	11.8	55.5
0.235500	33.7	2000.0	9.000	L1	20.0	18.6	52.3
0.253500	28.7	2000.0	9.000	N	20.1	23.0	51.6
0.316500	24.8	2000.0	9.000	L1	20.0	25.0	49.8
16.534500	27.6	2000.0	9.000	L1	20.0	22.4	50.0
16.818000	29.3	2000.0	9.000	N	20.2	20.7	50.0

Set.4+Mode8



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

Figure A.18 Conducted Emission

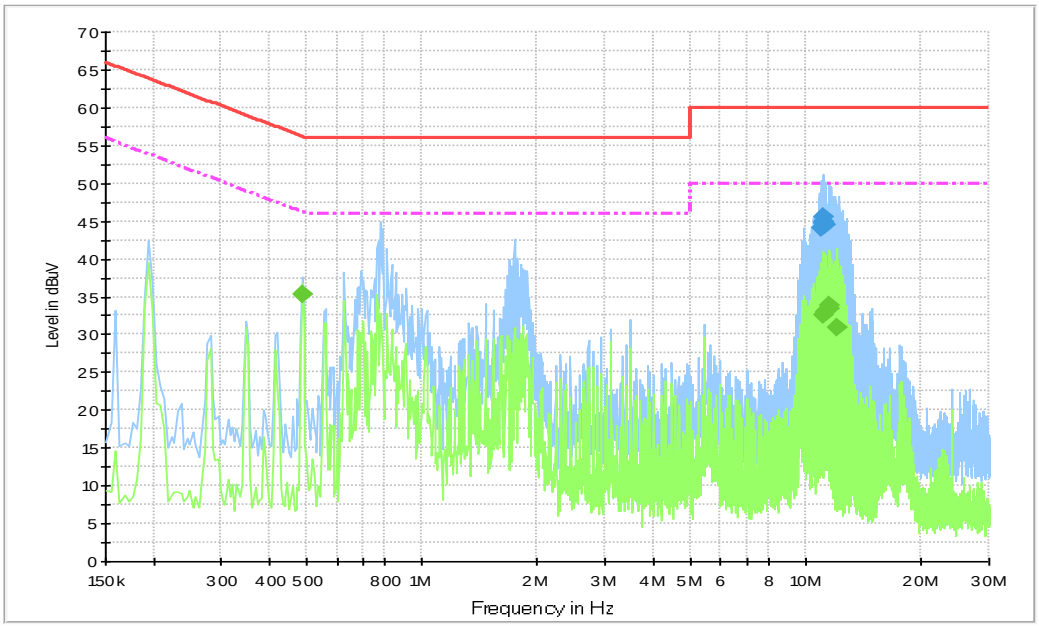
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.204000	46.6	2000.0	9.000	N	20.1	16.8	63.4
15.760500	45.0	2000.0	9.000	L1	20.0	15.0	60.0
15.976500	39.8	2000.0	9.000	N	20.2	20.2	60.0
17.713500	45.2	2000.0	9.000	L1	20.1	14.8	60.0
17.758500	45.1	2000.0	9.000	L1	20.1	14.9	60.0
17.790000	39.6	2000.0	9.000	N	20.2	20.4	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
13.924500	36.2	2000.0	9.000	L1	20.0	13.8	50.0
14.122500	32.4	2000.0	9.000	N	20.2	17.6	50.0
16.035000	33.6	2000.0	9.000	L1	20.0	16.4	50.0
16.111500	28.9	2000.0	9.000	N	20.2	21.1	50.0
16.143000	32.9	2000.0	9.000	L1	20.0	17.1	50.0
16.188000	28.2	2000.0	9.000	N	20.2	21.8	50.0

Set.9+Mode7+Mode9



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

Figure A.19 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
10.986000	44.1	2000.0	9.000	N	20.1	15.9	60.0
11.040000	44.9	2000.0	9.000	N	20.1	15.1	60.0
11.062500	44.8	2000.0	9.000	N	20.1	15.2	60.0
11.134500	45.5	2000.0	9.000	N	20.1	14.5	60.0
11.148000	44.8	2000.0	9.000	L1	20.0	15.2	60.0
11.184000	44.5	2000.0	9.000	L1	20.0	15.5	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.487500	35.2	2000.0	9.000	N	20.2	11.0	46.2
11.130000	32.7	2000.0	9.000	N	20.1	17.3	50.0
11.206500	33.1	2000.0	9.000	L1	20.0	16.9	50.0
11.499000	33.9	2000.0	9.000	N	20.1	16.1	50.0
11.517000	33.4	2000.0	9.000	N	20.1	16.6	50.0
12.021000	31.0	2000.0	9.000	L1	20.0	19.0	50.0

ANNEX B: Persons involved in this testing

Test Item	Tester
Radiated Emission	Sun Tianyuan
Conducted Emission	Guo Qian

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