FCC PART 15B
TEST REPORT

No. I21Z60056-EMC01

for

TCL Communication Ltd.

GSM/UMTS/LTE Mobile phone

Model Name: T671H

FCC ID: 2ACCJH136

with

Hardware Version: PIO2

Software Version: 2B5D

Issued Date: 2021-01-20

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

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

Tel:+86(0)10-62304633-2512, Fax:+86(0)10-62304633-2504

Email: cttl_terminals@caict.ac.cn, website: www.caict.ac.cn

REPORT HISTORY

Report Number	Revision	Description	Issue Date
I21Z60056-EMC01	Rev.0	1st edition	2021-01-20

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

CONTENTS

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 (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

Relative Humidity: 20-75%

1.4. Project data

Testing Start Date: 2021-01-11

Testing End Date: 2021-01-18

1.5. Signature

Wang Xue

(Prepared this test report)

Zhang Ying

(Reviewed this test report)

Zhang Xia

(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name:	TCL Communication Ltd.
Address:	5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong
Contact Person	Gong Zhizhou
Contact Email	zhizhou.gong@tcl.com
Telephone:	0086-755-36611722
Fax:	0086-755-36612000-81722

2.2. Manufacturer Information

Company Name:	TCL Communication Ltd.
Address:	5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong
Contact Person	Gong Zhizhou
Contact Email	zhizhou.gong@tcl.com
Telephone:	0086-755-36611722
Fax:	0086-755-36612000-81722

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

3.1. About EUT

Description	GSM/UMTS/LTE Mobile phone
Model Name	T671H
FCC ID	2ACCJH136
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

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1	355122660206171/01 355122660206189/01	PIO2	2B5D

*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	Battery	/	/
AE2	Battery	/	/
AE3	Charger1	/	
AE4	Charger2	/	
AE5	Charger3	/	
AE6	Charger4	/	
AE7	USB Cable	/	
AE8	USB Cable	/	
AE9	Headset1	/	
AE10	Headset2	/	

AE1

Model	CAC4850002C7
Manufacturer	VK
Capacity	5000mAh
Nominal Voltage	/

AE2

Model	CAC4850000C1,
Manufacturer	BYD
Capacity	5000mAh
Nominal Voltage	/

AE3

Model	CBA0059BATC5
Manufacturer	PUAN
Length of cable	/

AE4

Model	CBA0059BATC7
Manufacturer	Chenyang
Length of cable	/

AE5

Model	CBA0064BATC1 Quick charger
Manufacturer	BYD
Length of cable	/

AE6

Model	CBA0064BATC5 Quick charger
Manufacturer	PUAN
Length of cable	/

AE7

Model	CDA0000128C2
Manufacturer	SHENGHUA
Length of cable	/

AE8

Model	CDA0000128C1
Manufacturer	JUWEI
Length of cable	/

AE9

Model	CCB0070B10C1 Reach WH35
Manufacturer	JUWEI
Length of cable	/

AE10

Model	CCB0049A10C1 Reach WH15+
Manufacturer	MEIHAO
Length of cable	/

*AE ID: is used to identify the test sample in the lab internally.
Note: The USB cables are shielded.

3.4. EUT set-ups

EUT set-up No.	Combination of EUT and AE	Remarks
Set.1	EUT1+ AE1/AE2 + AE3 + AE7/AE8	REAR Camera + GSM 850 Idle
Set.2	EUT1+ AE1/AE2 + AE4 + AE7/AE	MP4+WCDMA 850 Idle
Set.3	EUT1+ AE1/AE2 + AE5 + AE7/AE	REAR Camera + GSM 850 Idle
Set.4	EUT1+ AE1/AE2 + AE6 + AE7/AE	REAR Camera + GSM 850 Idle
Set.5	EUT1+ AE1/AE2 +AE7/AE8+AE9	USB+front camera +LTE B5 Idle worse+FM98
Set.6	EUT1+ AE1/AE2 + AE7/AE8+AE10	USB+front camera +LTE B5 Idle worse+FM98

Note:

The device supports GSM/GPRS/EGPRS 850/900/1800/1900, UMTS FDD Band 1/2/4/5; LTE FDD Band 1/3/5/7/8/20/28/38/40/41/66/71. It has WLAN (802.11b/g/n, 802.11n supports 20MHz and 40MHz bandwidth), Bluetooth (EDR, BLE) and GNSS (GPS&GLONASS&BDS& GALILEO) functions.

The device contains receivers which tune and operate between 30MHz-960MHz in the following bands: GSM850, WCDMA850 and LTE Band 5. All licensed band receivers that tune in the range of 30MHz-960MHz are investigated.

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	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 (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
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 6GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 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

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	2021-03-02	1 Year
2	LISN	ENV216	101200	R&S	2021-05-19	1 year
3	Universal Radio Communication Tester	CMW500	116588	R&S	2021-12-07	1 year
4	Test Receiver	ESCI 7	100344	R&S	2021-02-26	1 Year
5	EMI Antenna	VULB 9163	9163-1223	Schwarzbeck	2021-03-18	1 year
6	EMI Antenna	3115	00167250	ETS-Lindgren	2021-05-14	1 year
7	Signal Generator	SMBV100A	106247	R&S	2021-05-18	1 year
8	Signal Generator	SMB100A	102063	R&S	2022-01-07	1 year

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 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 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 EUT was tested while operating in licensed band Rx mode. All licensed band receivers that tune in the range of 30MHz-960MHz, as listed in section 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.

The model of the PC is M4000E-17, and the serial number of the PC is M706GWXD. 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 (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. 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:

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): U = 4.74 dB, k=2.

Measurement results for Set.1:

Charging Mode/Average detector

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)
17983.000	47.8	-29.1	46.7	30.20	54.00	23.80	H
17889.500	47.4	-29.5	46.0	30.98	54.00	23.02	H
17963.733	47.3	-29.1	46.7	29.70	54.00	24.30	V
17967.700	47.3	-29.1	46.7	29.70	54.00	24.30	H
17890.067	47.2	-29.5	46.0	30.78	54.00	23.22	H
17996.033	47.2	-29.1	46.7	29.60	54.00	24.40	H

Charging Mode/Peak detector

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)
17988.667	56.7	-29.1	46.7	39.10	74.00	34.90	H
17973.933	56.5	-29.1	46.7	38.90	74.00	35.10	H
17991.500	56.3	-29.1	46.7	38.70	74.00	35.30	V
17888.933	56.1	-29.5	46.0	39.68	74.00	34.32	H
17959.200	55.8	-28.9	46.7	38.08	74.00	35.92	H
17997.733	55.7	-29.1	46.7	38.10	74.00	35.90	H

Measurement results for Set.2:

Charging Mode/Average detector

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)
17857.767	47.6	-29.3	46.0	30.98	54.00	23.02	H
17947.300	47.5	-28.9	46.7	29.78	54.00	24.22	H
17996.600	47.4	-29.1	46.7	29.80	54.00	24.20	V
17959.767	47.2	-28.9	46.7	29.48	54.00	24.52	H
17982.433	47.2	-29.1	46.7	29.60	54.00	24.40	H
17975.633	47.2	-29.1	46.7	29.60	54.00	24.40	H

Charging Mode/Peak detector

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)
17994.333	57.3	-29.1	46.7	39.70	74.00	34.30	H
17947.300	56.1	-28.9	46.7	38.38	74.00	35.62	H
17980.167	55.9	-29.1	46.7	38.30	74.00	35.70	V
17849.833	55.9	-29.3	46.0	39.28	74.00	34.72	H
17838.500	55.7	-29.7	46.0	39.42	74.00	34.58	H
17956.933	55.6	-28.9	46.7	37.88	74.00	36.12	H

Measurement results for Set. 3:

Charging Mode/Average detector

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)
17998.300	48.1	-29.1	46.7	30.50	54.00	23.50	H
17969.400	48.1	-29.1	46.7	30.50	54.00	23.50	H
17977.900	48.0	-29.1	46.7	30.40	54.00	23.60	V
17880.433	47.9	-29.5	46.0	31.48	54.00	22.52	H
17972.233	47.7	-29.1	46.7	30.10	54.00	23.90	H
17979.033	47.6	-29.1	46.7	30.00	54.00	24.00	H

Charging Mode/Peak detector

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)
17852.100	56.4	-29.3	46.0	39.78	74.00	34.22	H
17644.133	56.1	-29.6	45.2	40.45	74.00	33.55	H
17976.767	55.9	-29.1	46.7	38.30	74.00	35.70	V
17880.433	55.7	-29.5	46.0	39.28	74.00	34.72	H
17949.000	55.6	-28.9	46.7	37.88	74.00	36.12	H
17901.400	55.5	-29.3	46.0	38.87	74.00	35.13	H

Measurement results for Set.4:

Charging Mode/Average detector

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)
17993.200	48.0	-29.1	46.7	30.40	54.00	23.60	H
17991.500	48.0	-29.1	46.7	30.40	54.00	23.60	H
17997.733	47.9	-29.1	46.7	30.30	54.00	23.70	V
17980.167	47.5	-29.1	46.7	29.90	54.00	24.10	H
17892.900	47.5	-29.5	46.0	31.08	54.00	22.92	H
17898.567	47.5	-29.5	46.0	31.08	54.00	22.92	H

Charging Mode/Peak detector

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)
17938.233	57.2	-29.4	46.7	39.94	74.00	34.06	H
17973.367	56.6	-29.1	46.7	39.00	74.00	35.00	H
17900.267	56.3	-29.3	46.0	39.67	74.00	34.33	V
17838.500	56.2	-29.7	46.0	39.92	74.00	34.08	H
17993.200	56.1	-29.1	46.7	38.50	74.00	35.50	H
17959.767	56.0	-28.9	46.7	38.28	74.00	35.72	H

Measurement results for Set. 5:

USB Mode/Average detector

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)
17983.000	48.1	-29.1	46.7	30.50	54.00	23.50	H
17990.933	47.4	-29.1	46.7	29.80	54.00	24.20	H
17997.733	47.4	-29.1	46.7	29.80	54.00	24.20	V
17895.733	47.4	-29.5	46.0	30.98	54.00	23.02	H
17874.767	47.3	-29.4	46.0	30.74	54.00	23.26	H
17883.833	47.2	-29.5	46.0	30.78	54.00	23.22	H

USB Mode/Peak detector

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)
17973.933	57.5	-29.1	46.7	39.90	74.00	34.10	H
17992.067	57.4	-29.1	46.7	39.80	74.00	34.20	H
17979.600	56.9	-29.1	46.7	39.30	74.00	34.70	V
17892.333	55.9	-29.5	46.0	39.48	74.00	34.52	H
17970.533	55.8	-29.1	46.7	38.20	74.00	35.80	H
17886.100	55.7	-29.5	46.0	39.28	74.00	34.72	H

Measurement results for Set. 6:

USB Mode/Average detector

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)
17949.000	47.8	-28.9	46.7	30.08	54.00	23.92	H
17994.333	47.7	-29.1	46.7	30.10	54.00	23.90	H
17979.600	47.6	-29.1	46.7	30.00	54.00	24.00	V
17997.733	47.5	-29.1	46.7	29.90	54.00	24.10	H
17967.700	47.4	-29.1	46.7	29.80	54.00	24.20	H
17980.167	47.3	-29.1	46.7	29.70	54.00	24.30	H

USB Mode/Peak detector

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)
17942.767	56.4	-28.9	46.7	38.68	74.00	35.32	H
17963.733	56.2	-29.1	46.7	38.60	74.00	35.40	H
17924.067	56.1	-29.4	46.7	38.84	74.00	35.16	V
17915.000	56.1	-29.3	46.7	38.77	74.00	35.23	H
17914.433	56.0	-29.3	46.7	38.67	74.00	35.33	H
17900.833	55.9	-29.3	46.0	39.27	74.00	34.73	H

Measurement results for Set.1:

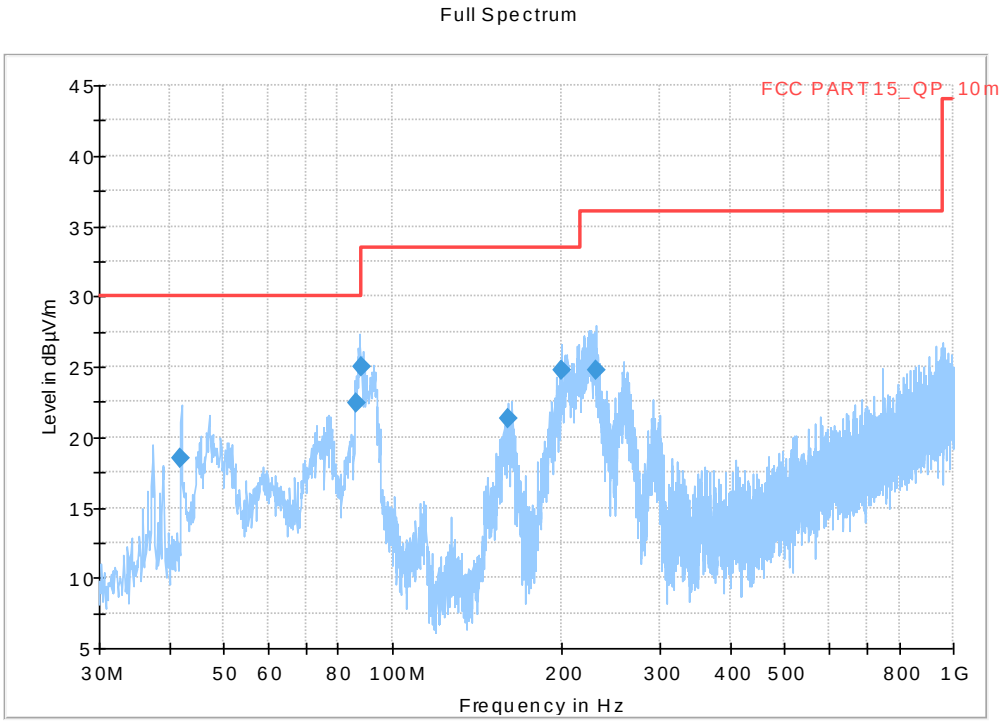

Fig A.1 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
41.908000	18.51	30.00	11.49	1000.0	120.000	184.0	V	60.0
86.121000	22.44	30.00	7.56	1000.0	120.000	125.0	V	70.0
88.038000	24.98	33.50	8.54	1000.0	120.000	125.0	V	73.0
160.433000	21.29	33.50	12.23	1000.0	120.000	108.0	V	-11.0
200.369000	24.70	33.50	8.82	1000.0	120.000	100.0	V	120.0
230.088000	24.81	36.00	11.21	1000.0	120.000	103.0	V	114.0

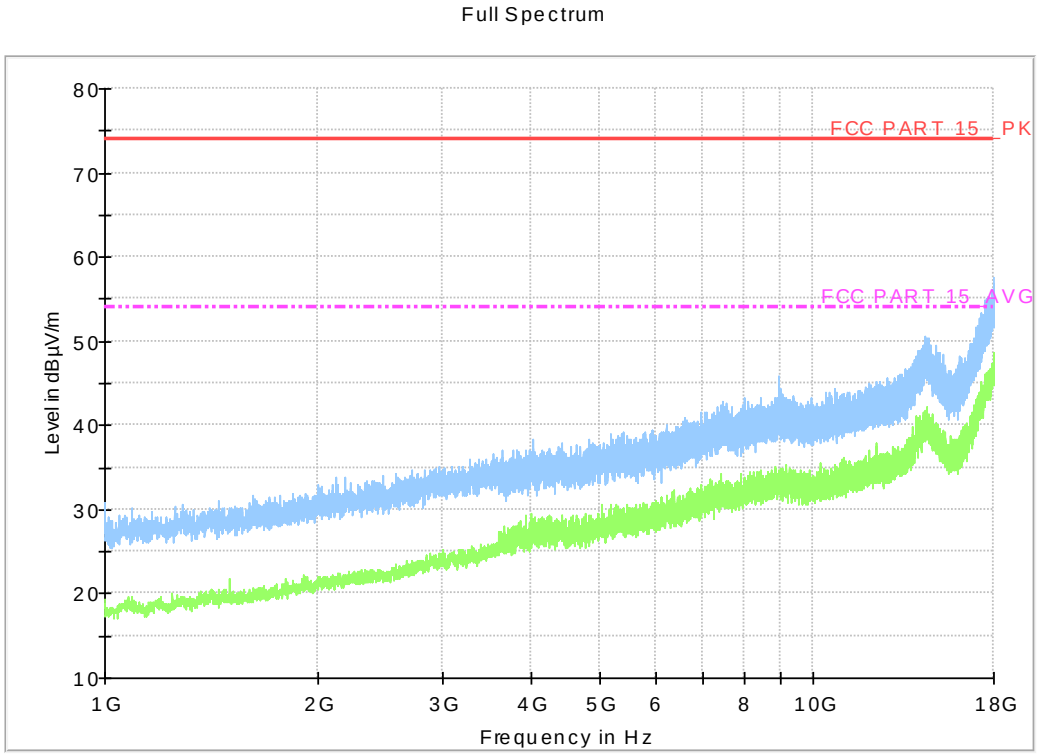

Fig A.2 Radiated Emission from 1GHz to 18GHz

Measurement results for Set. 2:

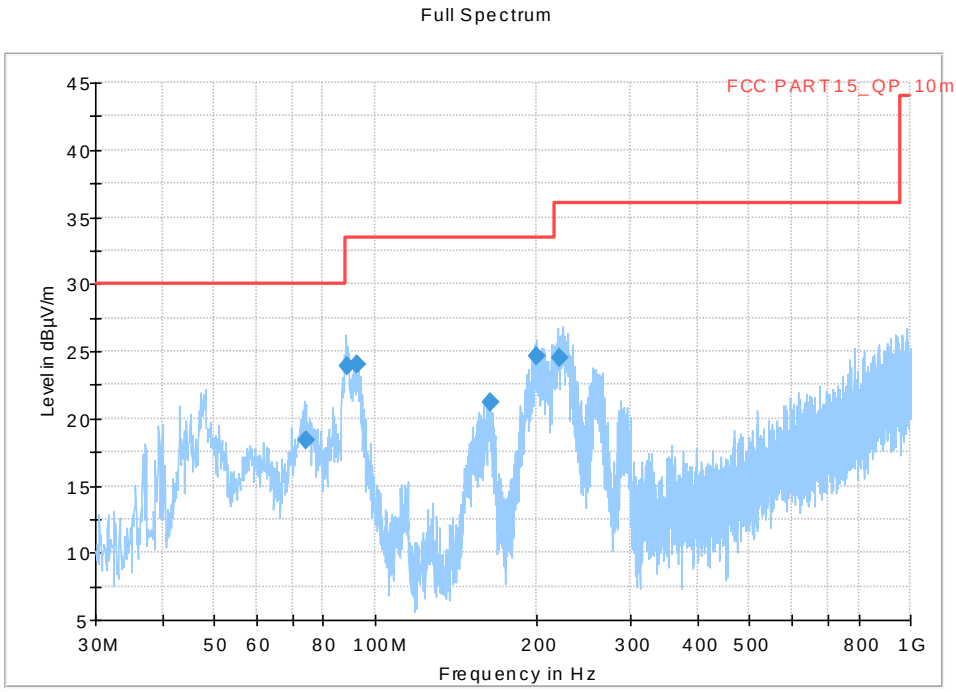

Fig A.3 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµv/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
74.315000	18.33	30.00	11.67	1000.0	120.000	179.0	V	189.0
88.449000	23.89	33.50	9.63	1000.0	120.000	125.0	V	30.0
92.547000	24.03	33.50	9.49	1000.0	120.000	125.0	V	210.0
163.768000	21.14	33.50	12.38	1000.0	120.000	101.0	V	-30.0
200.193000	24.68	33.50	8.84	1000.0	120.000	102.0	V	-30.0
221.903000	24.49	36.00	11.53	1000.0	120.000	121.0	V	120.0

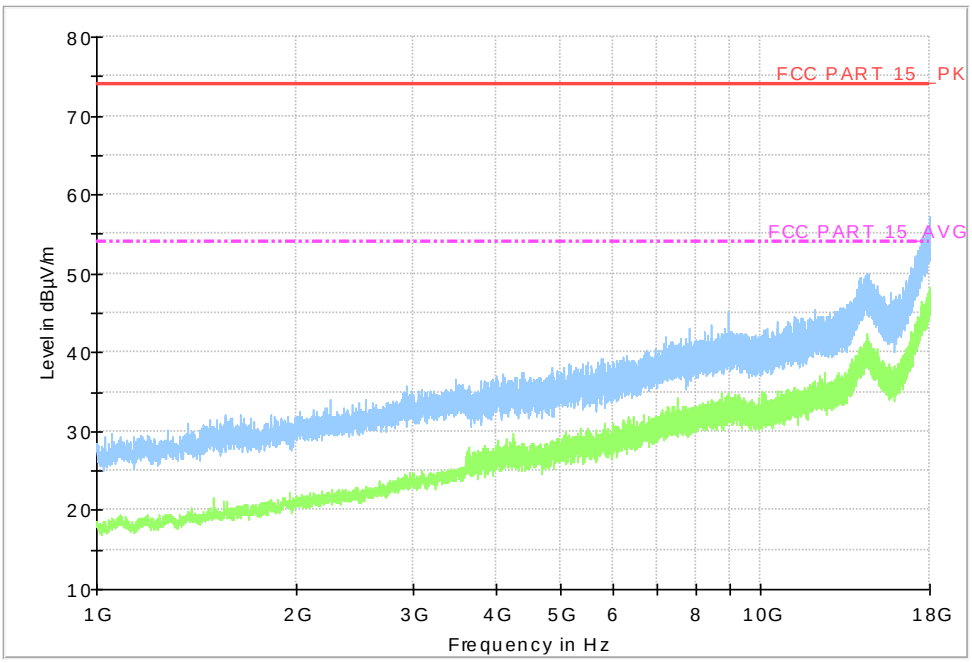

Fig A.4 Radiated Emission from 1GHz to 18GHz

Measurement results for Set.3:

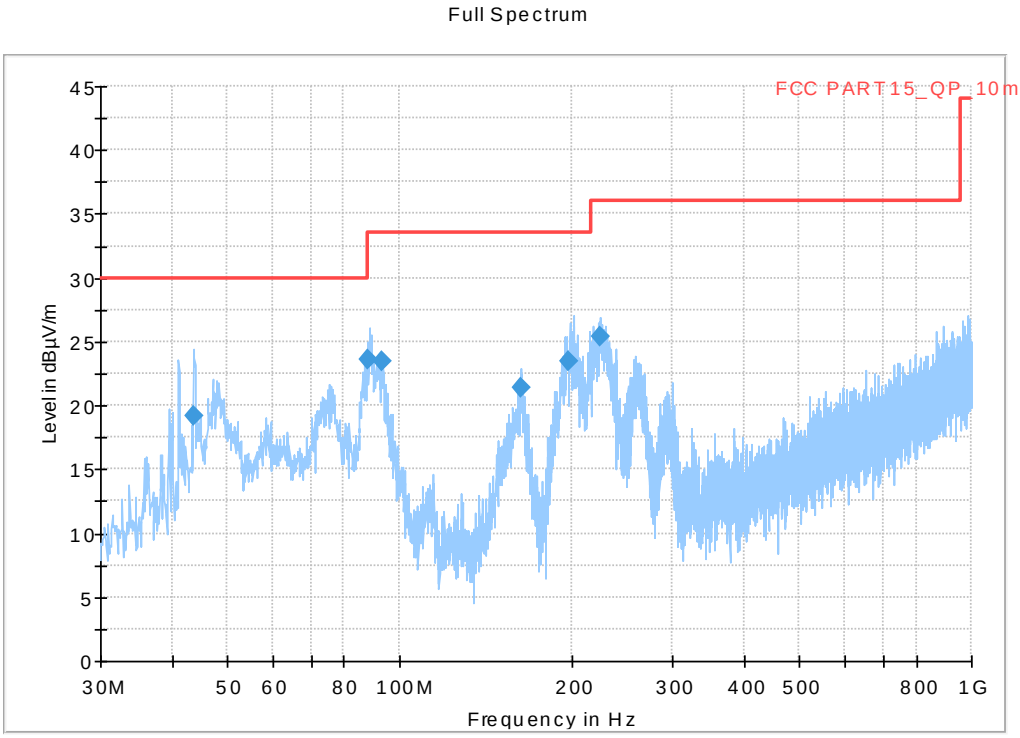

Fig A.5 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
43.820000	19.12	30.00	10.88	1000.0	120.000	125.0	V	86.0
87.909000	23.56	30.00	6.44	1000.0	120.000	125.0	V	30.0
93.124000	23.41	33.50	10.11	1000.0	120.000	113.0	V	210.0
163.218000	21.36	33.50	12.16	1000.0	120.000	100.0	V	-29.0
198.018000	23.48	33.50	10.04	1000.0	120.000	106.0	V	-3.0
224.120000	25.37	36.00	10.65	1000.0	120.000	125.0	V	155.0

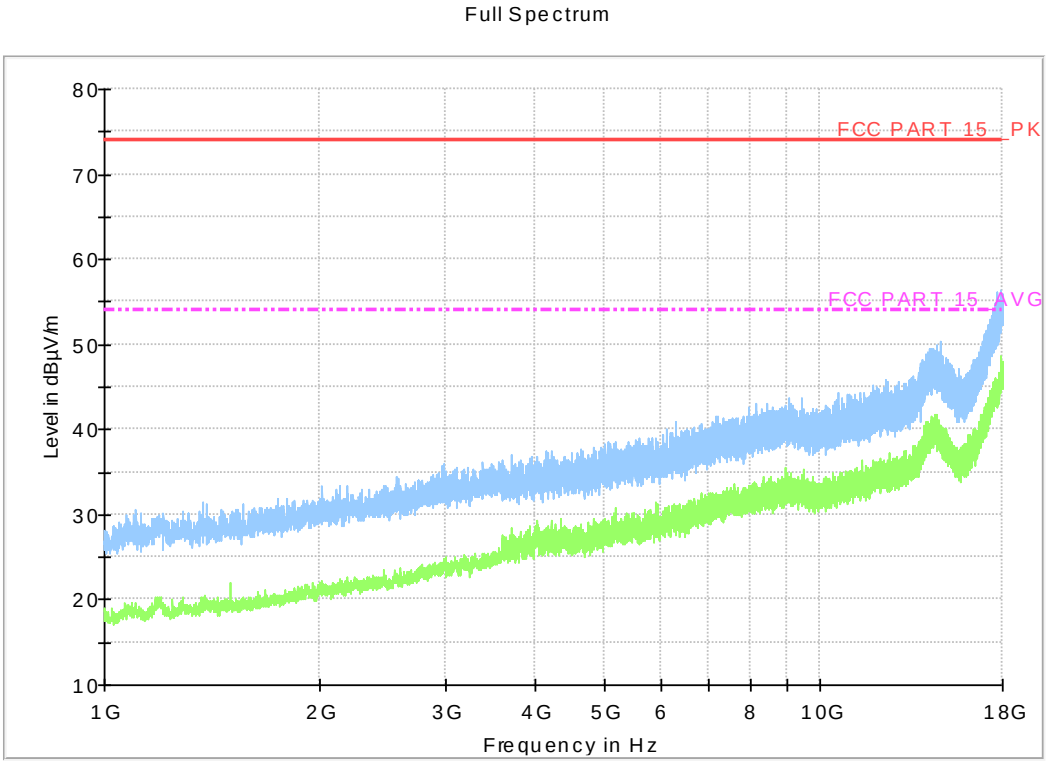

Fig A.6 Radiated Emission from 1GHz to 18GHz

Measurement results for Set.4:

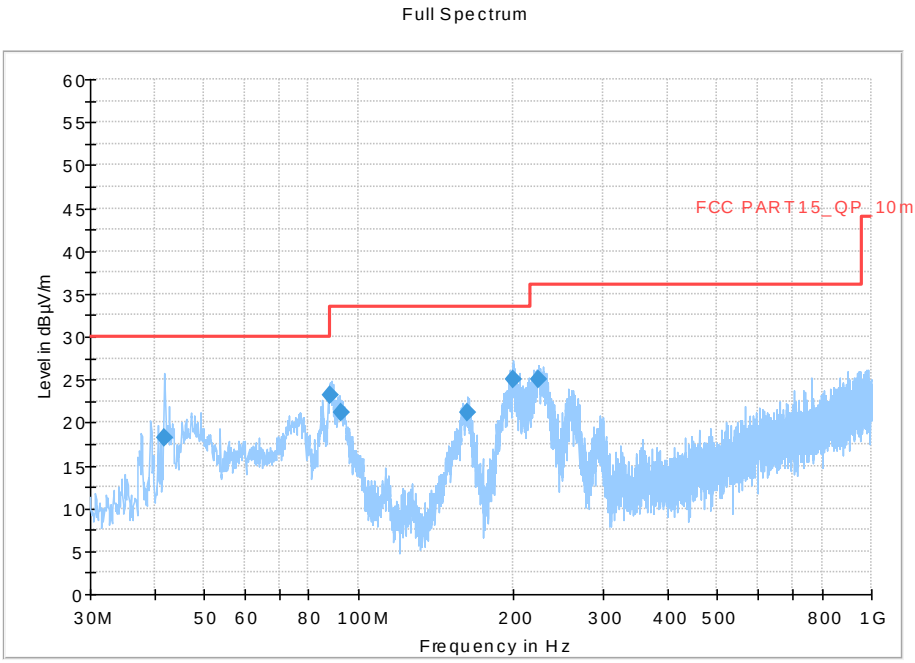

Fig A.7 Radiated Emission from 30MHz to 1GHz

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
41.917000	18.22	30.00	11.78	1000.0	120.000	209.0	V	81.0
88.269000	23.12	33.50	10.40	1000.0	120.000	120.0	V	25.0
92.801000	21.22	33.50	12.30	1000.0	120.000	125.0	V	69.0
163.296000	21.25	33.50	12.27	1000.0	120.000	113.0	V	-29.0
200.447000	25.08	33.50	8.44	1000.0	120.000	100.0	V	116.0
224.231000	24.99	36.00	11.03	1000.0	120.000	125.0	V	120.0

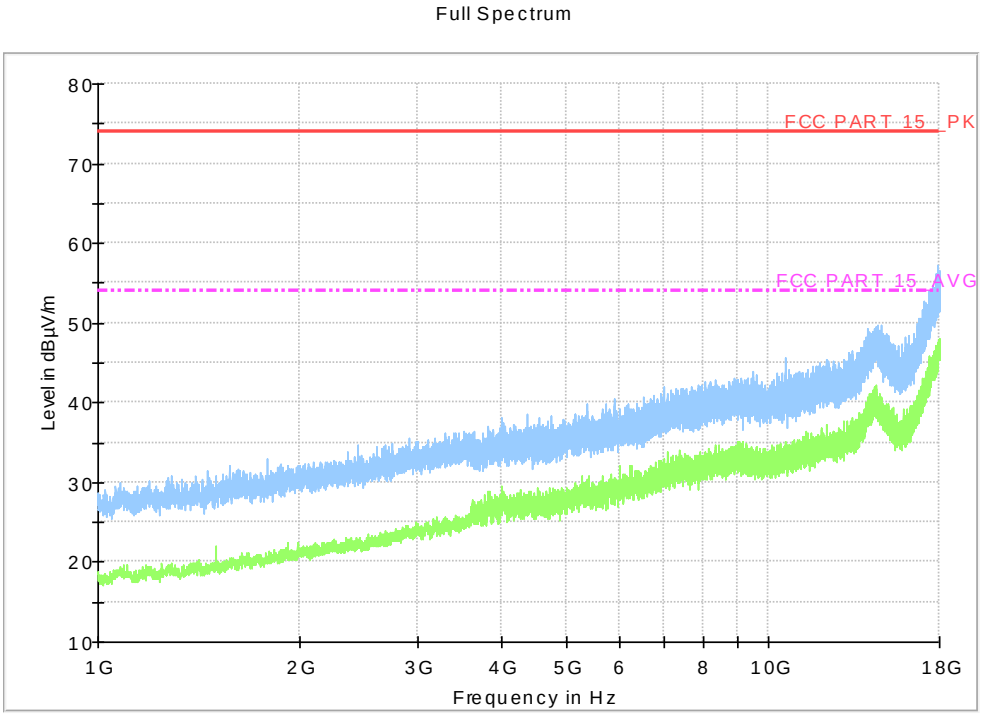

Fig A.8 Radiated Emission from 1GHz to 18GHz

Measurement results for Set.5:

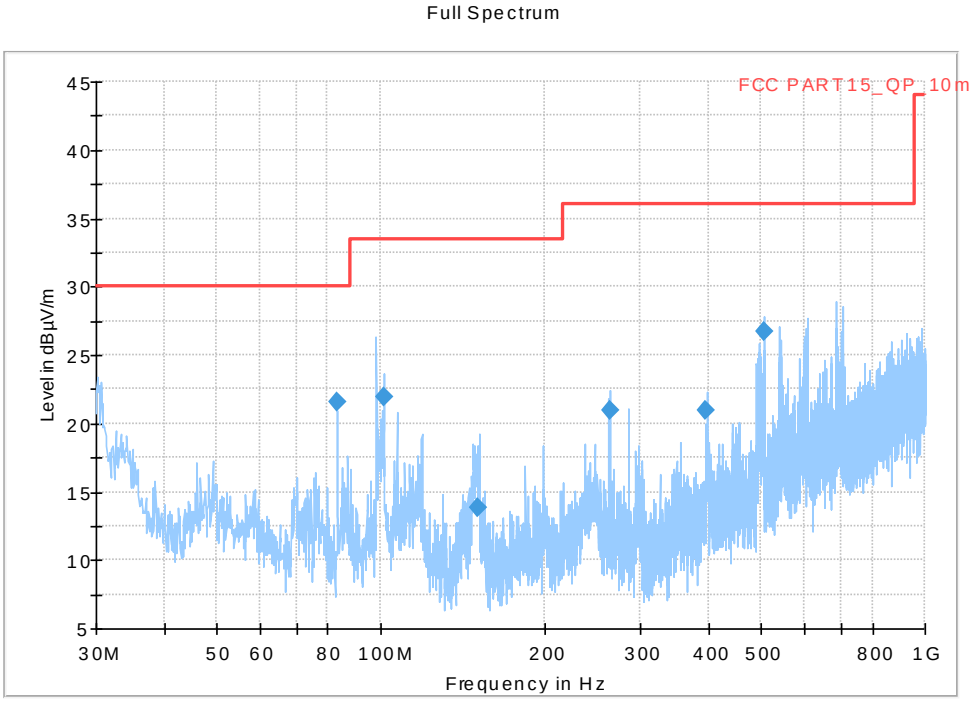

Fig A.9 Radiated Emission from 30MHz to 1GHz

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
83.313000	21.55	30.00	8.45	1000.0	120.000	179.0	V	114.0
101.258000	21.90	33.50	11.62	1000.0	120.000	125.0	V	30.0
151.389000	13.86	33.50	19.66	1000.0	120.000	225.0	V	30.0
264.024000	20.95	36.00	15.07	1000.0	120.000	118.0	V	120.0
396.688000	20.96	36.00	15.06	1000.0	120.000	102.0	V	188.0
506.838000	26.68	36.00	9.34	1000.0	120.000	225.0	V	0.0

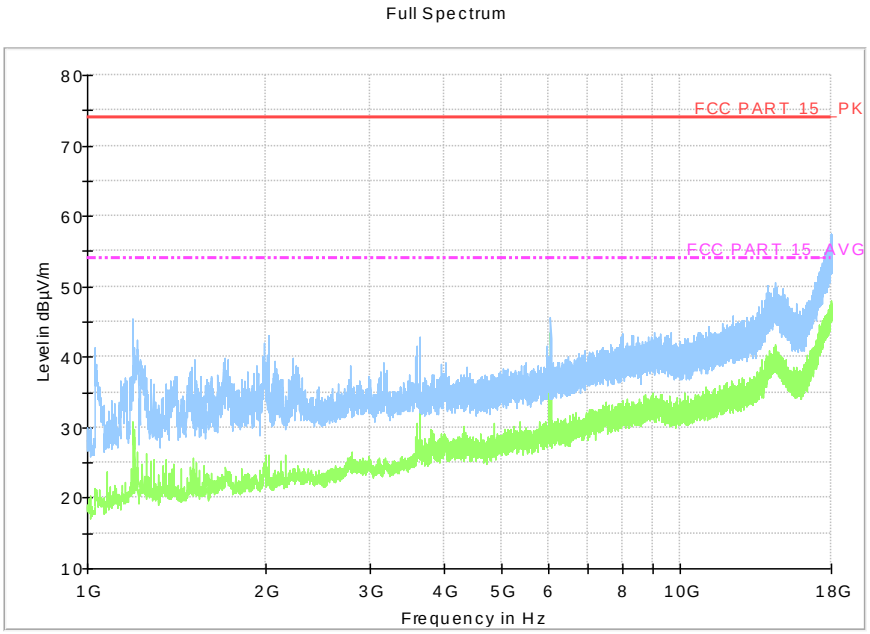

Fig A.10 Radiated Emission from 1GHz to 18GHz

Measurement results for Set.6:

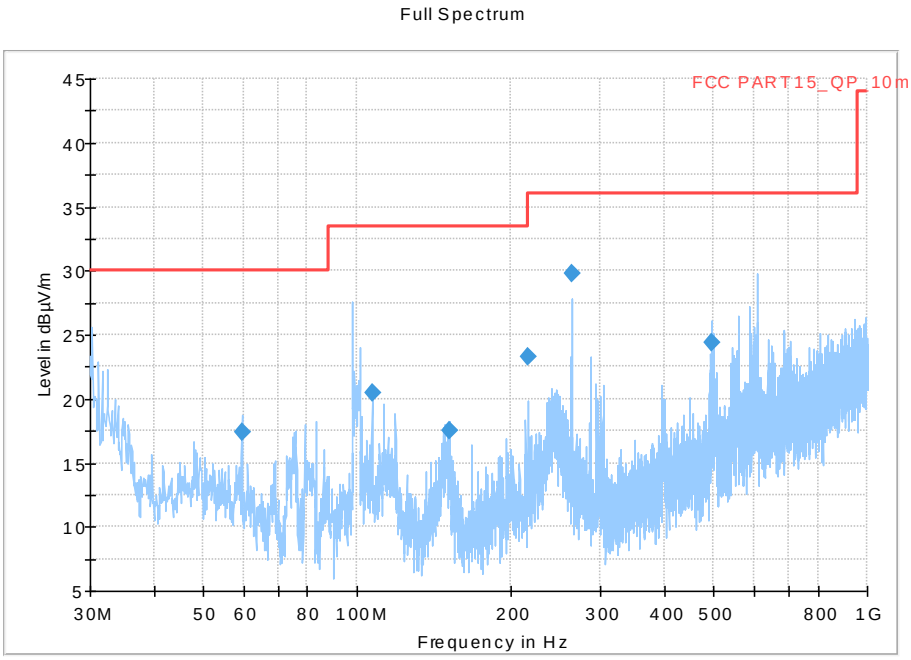

Fig A.11 Radiated Emission from 30MHz to 1GHz

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
59.488000	17.43	30.00	12.57	1000.0	120.000	125.0	V	30.0
107.078000	20.48	33.50	13.04	1000.0	120.000	113.0	V	61.0
151.915000	17.53	33.50	15.99	1000.0	120.000	125.0	V	153.0
216.009000	23.24	36.00	12.78	1000.0	120.000	178.0	V	30.0
264.024000	29.83	36.00	6.19	1000.0	120.000	104.0	V	87.0
495.558000	24.37	36.00	11.65	1000.0	120.000	220.0	V	-7.0

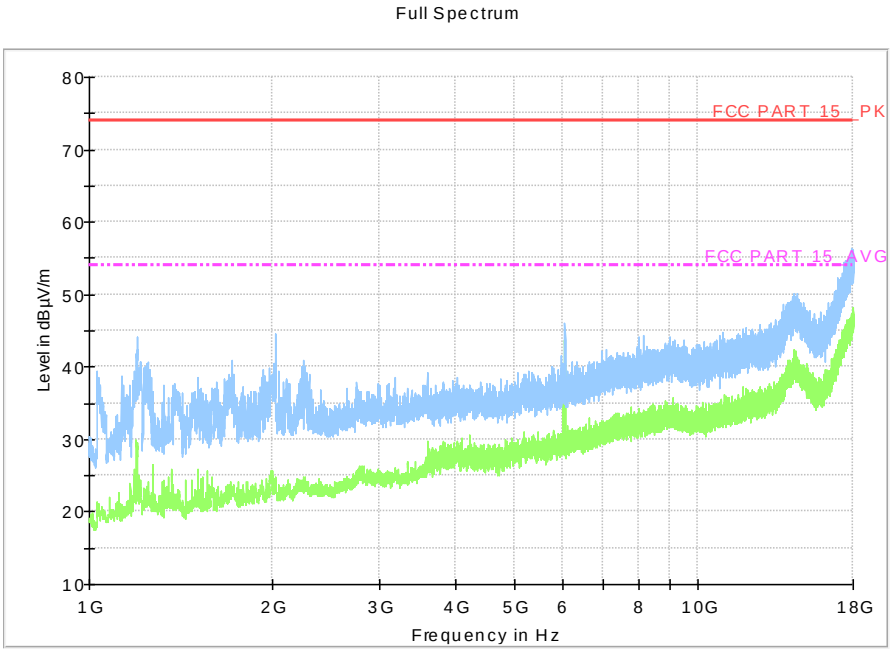

Fig A.12 Radiated Emission from 1GHz to 18GHz

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 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 M4000E-17, and the serial number of the PC is M706GWXD. 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*= 3.1 dB, *k*=2.

Charging Mode, Set.1:

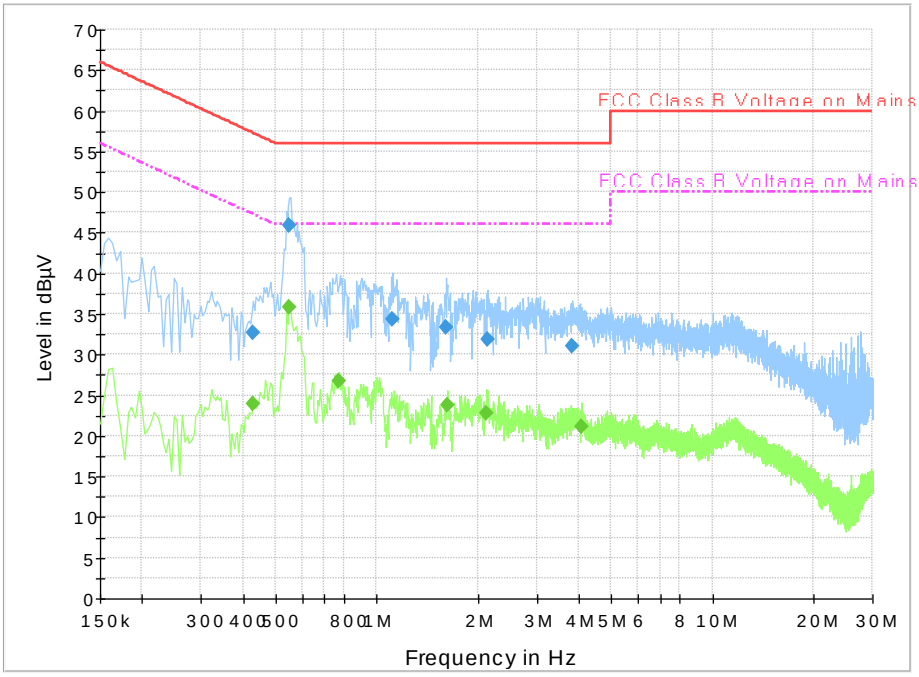

Fig A.13 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.429000	32.8	1000.0	9.000	On	L1	19.6	24.5	57.3	
0.550500	45.9	1000.0	9.000	On	L1	19.6	10.1	56.0	
1.117500	34.3	1000.0	9.000	On	N	19.6	21.7	56.0	
1.612500	33.4	1000.0	9.000	On	N	19.6	22.6	56.0	
2.139000	31.9	1000.0	9.000	On	L1	19.5	24.1	56.0	
3.831000	31.0	1000.0	9.000	On	L1	19.7	25.0	56.0	

Final Result 2

Frequency (MHz)	Average (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.429000	23.9	1000.0	9.000	On	L1	19.6	23.4	47.3	
0.550500	35.8	1000.0	9.000	On	N	19.5	10.2	46.0	
0.771000	26.8	1000.0	9.000	On	L1	19.6	19.2	46.0	
1.626000	23.7	1000.0	9.000	On	N	19.6	22.3	46.0	
2.130000	22.8	1000.0	9.000	On	L1	19.5	23.2	46.0	
4.087500	21.1	1000.0	9.000	On	L1	19.7	24.9	46.0	

Charging Mode, Set.2:

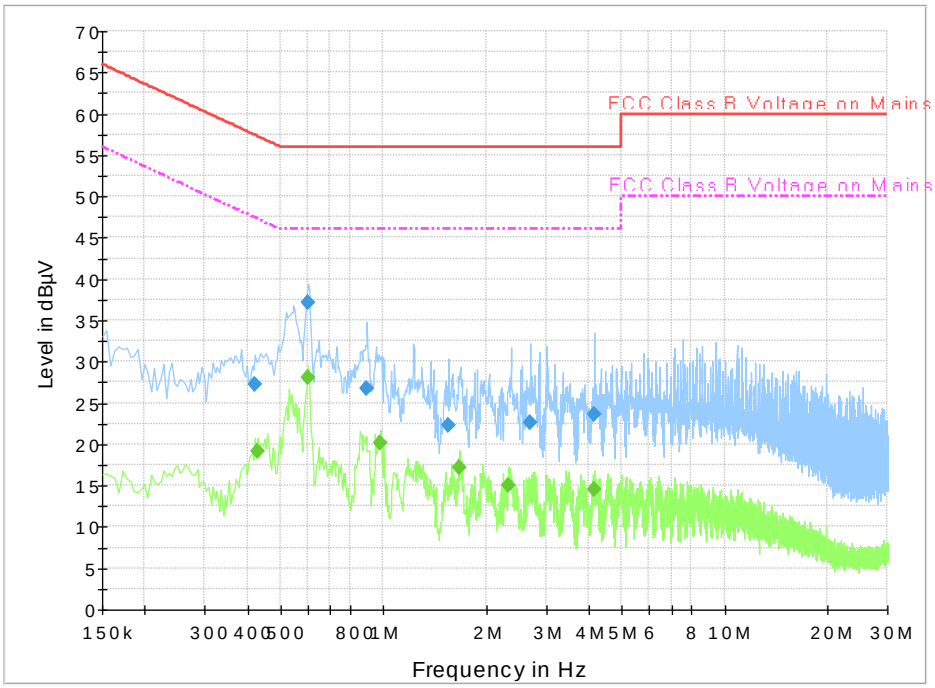

Fig A.14 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.420000	27.2	1000.0	9.000	On	N	19.6	30.2	57.4	
0.600000	37.1	1000.0	9.000	On	L1	19.6	18.9	56.0	
0.897000	26.7	1000.0	9.000	On	N	19.5	29.3	56.0	
1.554000	22.3	1000.0	9.000	On	N	19.6	33.7	56.0	
2.692500	22.6	1000.0	9.000	On	N	19.6	33.4	56.0	
4.159500	23.6	1000.0	9.000	On	N	19.7	32.4	56.0	

Final Result 2

Frequency (MHz)	Average (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.429000	19.2	1000.0	9.000	On	N	19.6	28.1	47.3	
0.600000	28.1	1000.0	9.000	On	L1	19.6	17.9	46.0	
0.982500	20.2	1000.0	9.000	On	N	19.6	25.8	46.0	
1.675500	17.1	1000.0	9.000	On	N	19.6	28.9	46.0	
2.332500	14.9	1000.0	9.000	On	L1	19.6	31.1	46.0	
4.159500	14.5	1000.0	9.000	On	N	19.7	31.5	46.0	

Charging Mode, Set.3:

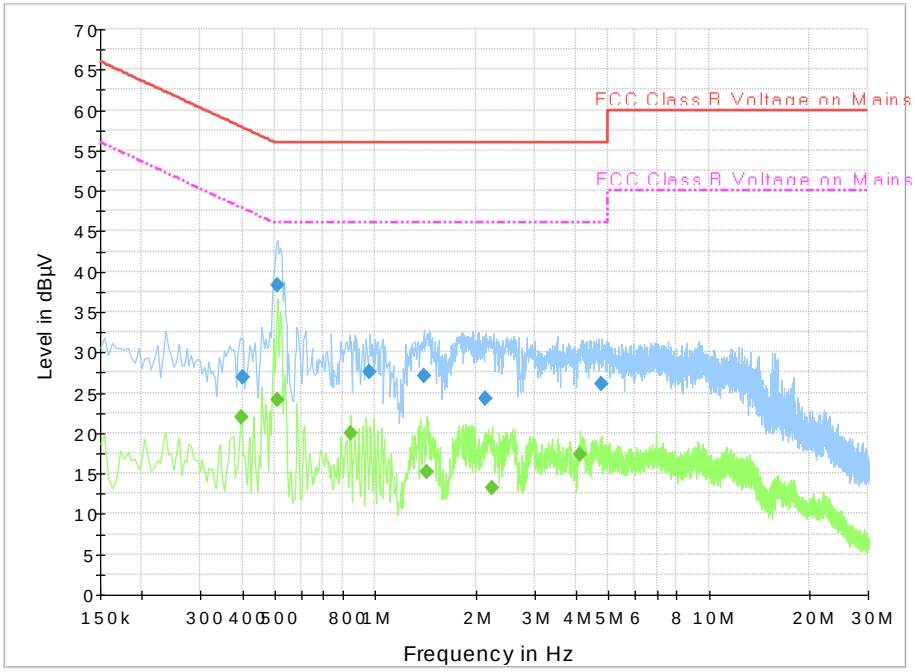

Fig A.15 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.402000	26.9	1000.0	9.000	On	N	19.6	30.9	57.8	
0.510000	38.2	1000.0	9.000	On	L1	19.6	17.8	56.0	
0.964500	27.6	1000.0	9.000	On	L1	19.6	28.4	56.0	
1.396500	27.0	1000.0	9.000	On	N	19.6	29.0	56.0	
2.143500	24.3	1000.0	9.000	On	L1	19.6	31.7	56.0	
4.771500	26.2	1000.0	9.000	On	L1	19.8	29.8	56.0	

Final Result 2

Frequency (MHz)	Average (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.397500	21.9	1000.0	9.000	On	N	19.6	26.0	47.9	
0.510000	24.1	1000.0	9.000	On	L1	19.6	21.9	46.0	
0.843000	19.9	1000.0	9.000	On	N	19.5	26.1	46.0	
1.423500	15.2	1000.0	9.000	On	L1	19.6	30.8	46.0	
2.238000	13.2	1000.0	9.000	On	L1	19.6	32.8	46.0	
4.110000	17.3	1000.0	9.000	On	L1	19.7	28.7	46.0	

Charging Mode, Set.4:

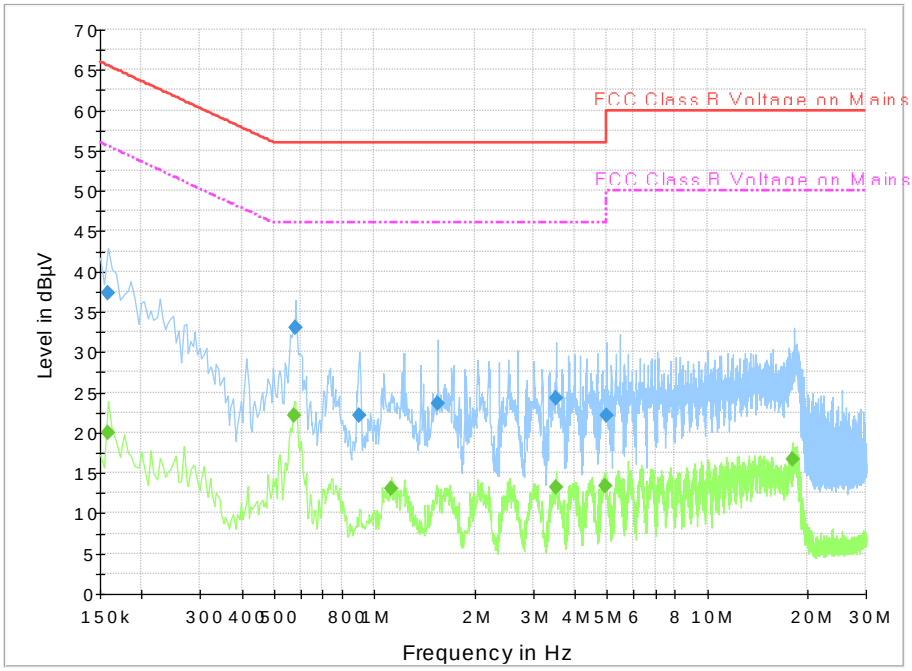

Fig A.16 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.159000	37.3	1000.0	9.000	On	L1	19.7	28.2	65.5	
0.582000	32.9	1000.0	9.000	On	N	19.5	23.1	56.0	
0.901500	22.2	1000.0	9.000	On	L1	19.6	33.8	56.0	
1.554000	23.6	1000.0	9.000	On	N	19.6	32.4	56.0	
3.507000	24.3	1000.0	9.000	On	L1	19.7	31.8	56.0	
4.978500	22.1	1000.0	9.000	On	N	19.7	33.9	56.0	

Final Result 2

Frequency (MHz)	Average (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.159000	19.9	1000.0	9.000	On	L1	19.7	35.6	55.5	
0.573000	22.1	1000.0	9.000	On	N	19.5	23.9	46.0	
1.122000	13.1	1000.0	9.000	On	L1	19.6	32.9	46.0	
3.507000	13.3	1000.0	9.000	On	L1	19.7	32.7	46.0	
4.951500	13.4	1000.0	9.000	On	L1	19.8	32.6	46.0	
18.096000	16.7	1000.0	9.000	On	N	19.9	33.3	50.0	

USB Mode, Set.5:

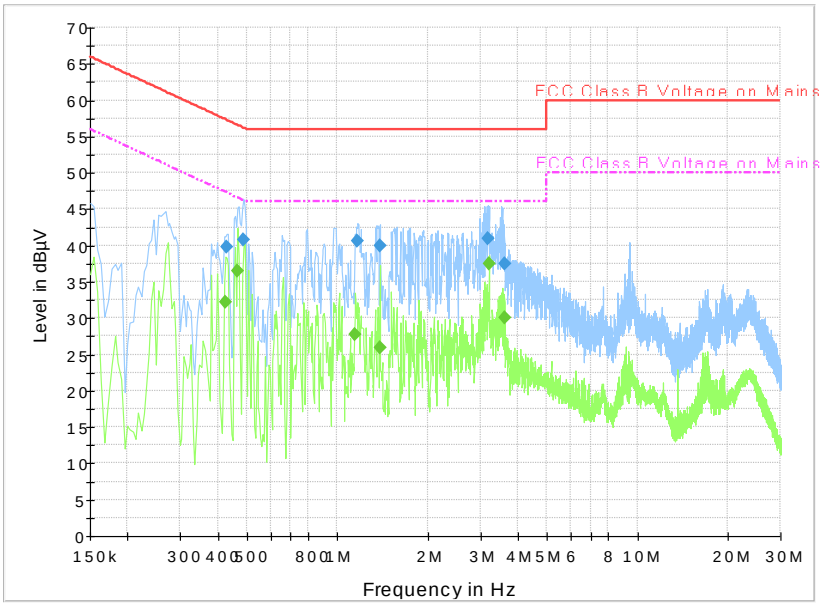

Fig A.17 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.429000	39.8	1000.0	9.000	On	N	19.6	17.5	57.3	
0.487500	40.7	1000.0	9.000	On	N	19.6	15.5	56.2	
1.171500	40.5	1000.0	9.000	On	L1	19.6	15.5	56.0	
1.387500	40.0	1000.0	9.000	On	N	19.6	16.0	56.0	
3.178500	41.0	1000.0	9.000	On	N	19.6	15.0	56.0	
3.619500	37.5	1000.0	9.000	On	N	19.6	18.5	56.0	

Final Result 2

Frequency (MHz)	Average (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.424500	32.1	1000.0	9.000	On	N	19.6	15.2	47.4	
0.465000	36.4	1000.0	9.000	On	L1	19.6	10.2	46.6	
1.149000	27.8	1000.0	9.000	On	L1	19.6	18.2	46.0	
1.387500	26.0	1000.0	9.000	On	N	19.6	20.0	46.0	
3.201000	37.4	1000.0	9.000	On	N	19.6	8.6	46.0	
3.619500	30.0	1000.0	9.000	On	L1	19.7	16.0	46.0	

USB Mode, Set.6:

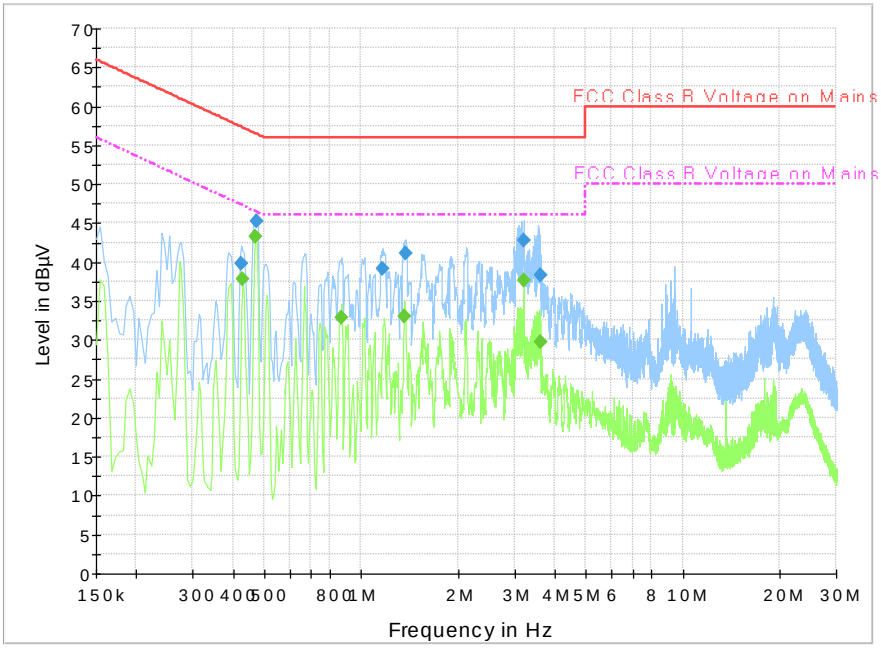

Fig A.18 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.424500	39.8	1000.0	9.000	On	L1	19.6	17.6	57.4	
0.474000	45.2	1000.0	9.000	On	L1	19.6	11.3	56.4	
1.171500	39.2	1000.0	9.000	On	N	19.6	16.8	56.0	
1.374000	41.1	1000.0	9.000	On	L1	19.6	14.9	56.0	
3.201000	42.8	1000.0	9.000	On	N	19.6	13.2	56.0	
3.619500	38.3	1000.0	9.000	On	N	19.6	17.7	56.0	

Final Result 2

Frequency (MHz)	Average (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.429000	37.8	1000.0	9.000	On	N	19.6	9.4	47.3	
0.469500	43.3	1000.0	9.000	On	L1	19.6	3.2	46.5	
0.865500	32.8	1000.0	9.000	On	L1	19.6	13.2	46.0	
1.365000	33.0	1000.0	9.000	On	N	19.6	13.0	46.0	
3.201000	37.6	1000.0	9.000	On	L1	19.7	8.4	46.0	
3.619500	29.7	1000.0	9.000	On	N	19.6	16.3	46.0	

ANNEX B: PERSONS INVOLVED IN THIS TESTING

Test Item	Test Software and Version	Software Vendor	Test operator
Conducted Emission	EMC32 V8.5.2	R&S	Yang Mengke
Radiated Emission	EMC32 V9.01.00	R&S	Ding Zai

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