



FCC PART 15B TEST REPORT

No. I21Z60291-EMC01

for

TCL Communication Ltd.

GSM/UMTS/LTE mobile phone

Model Name: T774B/T775B

FCC ID: 2ACCJN054

with

Hardware Version: 03

Software Version: v3.0.9DF2

Issued Date: 2021-03-09

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

Report Number	Revision	Description	Issue Date
I21Z60291-EMC01	Rev.0	1 st edition	2021-03-09

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

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1. Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2005 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0, and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (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: 2021-02-27
Testing End Date: 2021-03-08

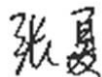
1.5. Signature



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

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Contact Person Gong Zhizhou
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Telephone: 0086-755-36611722
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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
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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	T774B/T775B
FCC ID	2ACCJN054
Extreme vol. Limits	3.6VDC to 4.4VDC (nominal: 3.85VDC)

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	351897970000208	03	v3.0.9DF2

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

AE1

Model	TLp048A1
Manufacturer	BYD
Capacity	4360 mAh
Nominal Voltage	3.85V

AE2

Model	TLp048A7
Manufacturer	VEKEN
Capacity	4360 mAh
Nominal Voltage	3.85V

AE3

Model	CDA0000128C1
Manufacturer	Juwei
Length of cable	/

AE4

Model	CDA0000128C2
Manufacturer	Shenghua



Length of cable	/
AE5	
Model	UC13US
Manufacturer	PUAN
Length of cable	/
AE6	
Model	UC13US
Manufacturer	Tenpao
Length of cable	/
AE7	
Model	QC13US
Manufacturer	BYD
Length of cable	/
AE8	
Model	QC13US
Manufacturer	PUAN
Length of cable	/
AE9	
Model	WH35
Manufacturer	JUWEI
Length of cable	/
AE10	
Model	WH70
Manufacturer	Liangchuang
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/AE4+ AE5	REAR Camera+GSM 850 idle
Set.2	EUT1 + AE1/AE2 + AE3/AE4+ AE6	MP4+WCDMA 850 idle
Set.3	EUT1+ AE1/AE2 + AE3/AE4+ AE7	REAR Camera+GSM 850 idle
Set.4	EUT1 + AE1/AE2 + AE3/AE4+ AE8	REAR Camera+GSM 850 idle
Set.5	EUT1 + AE1/AE2 + AE3/AE4+ AE9	USB+front camera +LTE B5 idle worse+FM98
Set.6	EUT1 + AE1/AE2 + AE3/AE4+ AE10	USB+front camera +LTE B5 idle worse+FM98

Note:

The device supports GSM/GPRS/EGPRS 850/900/1800/1900, UMTS FDD Band 1/2/4/5/8; LTE FDD Band 1/2/3/4/5/7/8/12/13/17/20/25/26/28/29/66/71,TDD Band 38/40/41. 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 ,LTE Band 5,LTE Band 12, LTE band 13 and LTE Band 71. All licensed band receivers that tune in the range of 30MHz-960MHz are investigated. Only the worst case emissions are reported.

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 M
Ground system resistance	< 4
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 M
Ground system resistance	< 4

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	2022-02-23	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	2022-02-23	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 ($\mu\text{V}/\text{m}$)		
	Quasi-peak	Average	Peak
30-88	100		
88-216	150		
216-960	200		
960-1000	500		
>1000		500	5000

Note: the above limit is for 3 meters test distance. 10 meters' limit is got by converting.

A.1.4 Test Condition

Frequency range (MHz)	RBW/VBW	Sweep Time (s)	Detector
30-1000	120kHz (IF Bandwidth)	5	Peak/Quasi-peak
Above 1000	1MHz/1MHz	15	Peak, Average

A.1.5 Measurement Results

A "reference path loss" is established and the A_{Rpl} is the attenuation of "reference path loss". It includes the antenna factor of receive antenna and the path loss.

The measurement results are obtained as described below:

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

Where

G_A : Antenna factor of receive antenna

G_{PL} : Path Loss

P_{Mea} : Measurement result on receiver.

Measurement uncertainty (worst case): $U = 4.74 \text{ dB}$, $k=2$.

Measurement results for Set.1:

Charging Mode/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)
17952.967	44.3	-28.9	46.7	26.583	54.0	9.7	H
17972.800	43.6	-29.1	46.7	26.001	54.0	10.4	V
17994.333	43.4	-29.1	46.7	25.798	54.0	10.6	H
17996.600	43.3	-29.1	46.7	25.698	54.0	10.7	V
17979.033	43.3	-29.1	46.7	25.701	54.0	10.7	V
17530.233	43.1	-29.3	44.4	28.067	54.0	10.9	V

Charging Mode/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)
18000.000	52.2	-29.2	47.0	34.443	74.0	21.8	V
17929.733	52.0	-29.4	46.7	34.739	74.0	22	H
17415.200	52.0	-29.4	44.4	37.086	74.0	22	H
17496.800	51.9	-29.8	44.4	37.317	74.0	22.1	H
17994.333	51.8	-29.1	46.7	34.198	74.0	22.2	V
17934.267	51.8	-29.4	46.7	34.539	74.0	22.2	V

Measurement results for Set.2:
Charging Mode/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)
17987.533	43.9	-29.1	46.7	26.298	54.0	10.1	H
17941.633	43.6	-28.9	46.7	25.883	54.0	10.4	V
17983.567	43.6	-29.1	46.7	25.998	54.0	10.4	H
17934.833	43.5	-29.4	46.7	26.239	54.0	10.5	H
17979.600	43.2	-29.1	46.7	25.601	54.0	10.8	H
17933.133	43.2	-29.4	46.7	25.939	54.0	10.8	H

Charging Mode/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)
17980.167	52.4	-29.1	46.7	34.798	74.0	21.6	H
17999.433	52.4	-29.1	46.7	34.798	74.0	21.6	V
17907.633	52.2	-29.3	46.0	35.572	74.0	21.8	H
17968.267	52.1	-29.1	46.7	34.501	74.0	21.9	V
17918.400	52.0	-29.3	46.7	34.665	74.0	22	H
17924.067	52.0	-29.4	46.7	34.739	74.0	22	V

Measurement results for Set. 3:
Charging Mode/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)
17939.933	44.8	-29.4	46.7	27.539	54.0	9.2	H
17893.467	43.3	-29.5	46.0	26.880	54.0	10.7	V
17850.967	43.3	-29.3	46.0	26.682	54.0	10.7	H
17992.067	43.2	-29.1	46.7	25.598	54.0	10.8	H
17878.167	42.9	-29.4	46.0	26.339	54.0	11.1	V
17942.200	42.9	-28.9	46.7	25.183	54.0	11.1	H

Charging Mode/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)
17998.867	52.3	-29.1	46.7	34.698	74.0	21.7	H
17809.033	52.0	-29.6	46.0	35.676	74.0	22	V
17916.700	51.9	-29.3	46.7	34.565	74.0	22.1	H
17936.533	51.9	-29.4	46.7	34.639	74.0	22.1	H
17939.933	51.9	-29.4	46.7	34.639	74.0	22.1	V
17622.033	51.8	-29.4	45.2	35.952	74.0	22.2	H

Measurement results for Set.4:
Charging Mode/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)
17951.833	43.7	-28.9	46.7	25.983	54.0	10.3	H
17890.067	43.3	-29.5	46.0	26.880	54.0	10.7	V
17997.167	43.3	-29.1	46.7	25.698	54.0	10.7	V
17930.867	43.3	-29.4	46.7	26.039	54.0	10.7	V
17844.733	43.2	-29.3	46.0	26.582	54.0	10.8	V
17870.233	43.0	-29.4	46.0	26.439	54.0	11	H

Charging Mode/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)
17964.300	53.3	-29.1	46.7	35.701	74.0	20.7	V
17987.533	52.4	-29.1	46.7	34.798	74.0	21.6	H
17955.800	52.3	-28.9	46.7	34.583	74.0	21.7	V
17937.667	52.3	-29.4	46.7	35.039	74.0	21.7	V
17909.333	51.9	-29.3	46.0	35.272	74.0	22.1	H
17937.100	51.8	-29.4	46.7	34.539	74.0	22.2	V

Measurement results for Set. 5:
USB Mode/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)
17845.867	43.6	-29.3	46.0	26.982	54.0	10.4	V
17926.333	43.5	-29.4	46.7	26.239	54.0	10.5	H
17988.667	43.3	-29.1	46.7	25.698	54.0	10.7	H
17960.333	43.1	-29.1	46.7	25.501	54.0	10.9	H
17999.433	43.0	-29.1	46.7	25.398	54.0	11	V
17997.733	42.9	-29.1	46.7	25.298	54.0	11.1	V

USB Mode/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)
17937.100	53.0	-29.4	46.7	35.739	74.0	21	V
17950.700	52.5	-28.9	46.7	34.783	74.0	21.5	H
17986.967	52.5	-29.1	46.7	34.898	74.0	21.5	H
17968.833	52.4	-29.1	46.7	34.801	74.0	21.6	V
17990.933	52.0	-29.1	46.7	34.398	74.0	22	H
17836.800	51.9	-29.7	46.0	35.624	74.0	22.1	H

Measurement results for Set. 6:
USB Mode/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)
17997.733	43.5	-29.1	46.7	25.898	54.0	10.5	V
17996.033	43.4	-29.1	46.7	25.798	54.0	10.6	V
17963.167	43.3	-29.1	46.7	25.701	54.0	10.7	H
17965.433	43.2	-29.1	46.7	25.601	54.0	10.8	H
17949.567	43.1	-28.9	46.7	25.383	54.0	10.9	V
17849.267	43.0	-29.3	46.0	26.382	54.0	11	V

USB Mode/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)
17934.833	52.9	-29.4	46.7	35.639	74.0	21.1	V
17979.600	51.9	-29.1	46.7	34.301	74.0	22.1	V
17911.033	51.9	-29.3	46.0	35.272	74.0	22.1	V
17928.600	51.9	-29.4	46.7	34.639	74.0	22.1	H
17390.833	51.8	-29.8	44.4	37.276	74.0	22.2	V
17927.467	51.8	-29.4	46.7	34.539	74.0	22.2	V

Measurement results for Set.1:

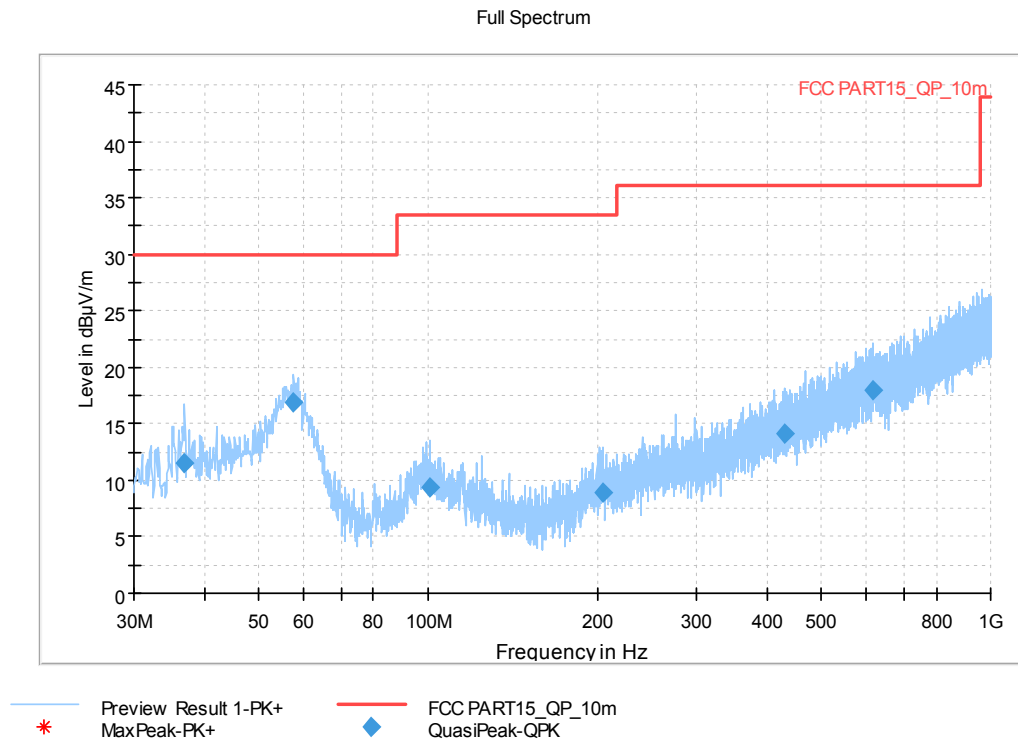


Fig A.1 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
36.887000	11.48	30.00	18.52	1000.0	120.000	277.1	V	290.0
57.742000	16.87	30.00	13.13	1000.0	120.000	106.7	V	278.0
100.810000	9.36	33.50	24.16	1000.0	120.000	225.0	V	80.0
204.794000	8.96	33.50	24.56	1000.0	120.000	210.3	V	81.0
430.125000	14.19	36.00	21.83	1000.0	120.000	102.1	V	175.0
616.462000	18.03	36.00	17.99	1000.0	120.000	204.5	V	66.0

Full Spectrum

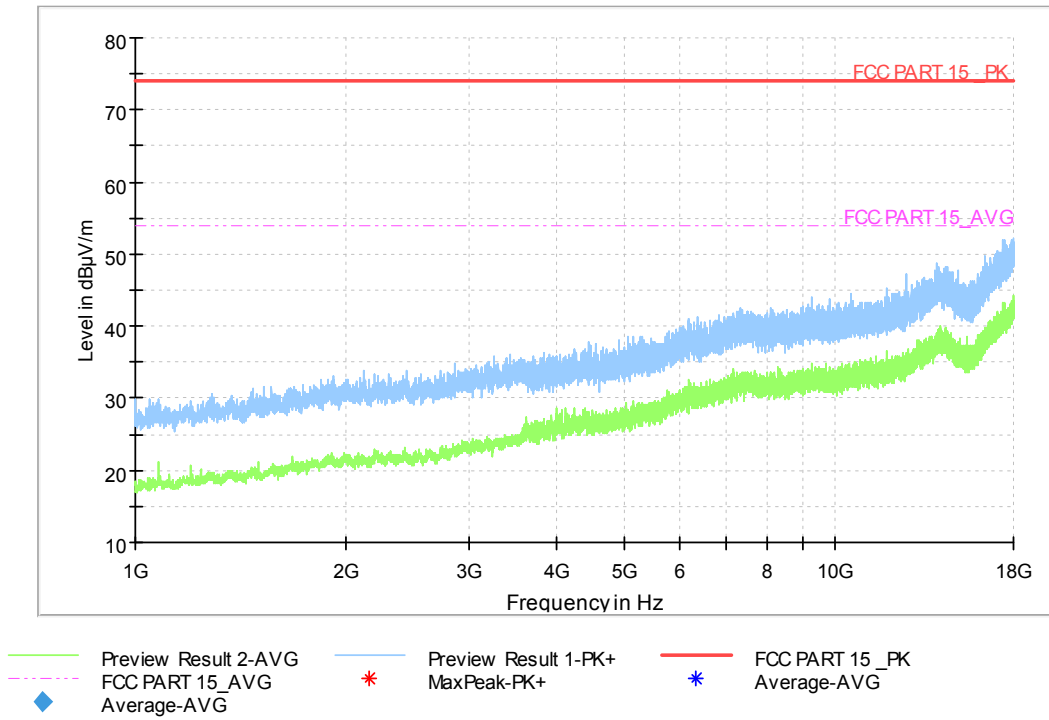


Fig A.2 Radiated Emission from 1GHz to 18GHz

Measurement results for Set. 2:

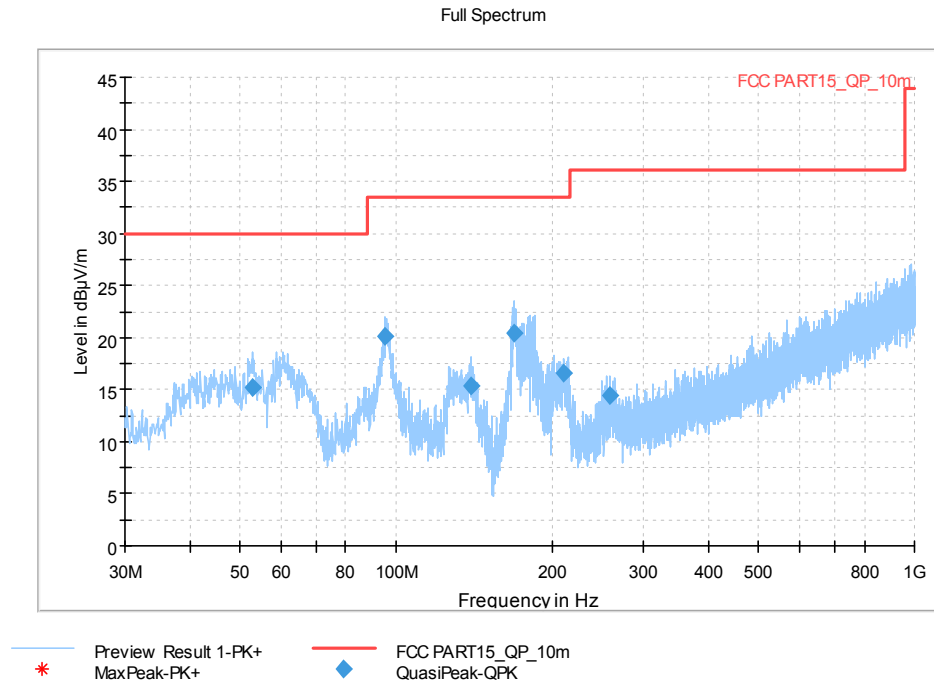


Fig A.3 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
52.892000	15.15	30.00	14.85	1000.0	120.000	102.0	V	185.0
95.184000	20.09	33.50	13.43	1000.0	120.000	105.0	V	271.0
139.416000	15.32	33.50	18.20	1000.0	120.000	212.0	V	-10.0
168.904000	20.46	33.50	13.06	1000.0	120.000	113.0	V	-1.0
211.196000	16.65	33.50	16.87	1000.0	120.000	100.0	V	150.0
258.047000	14.49	36.00	21.53	1000.0	120.000	114.0	V	155.0

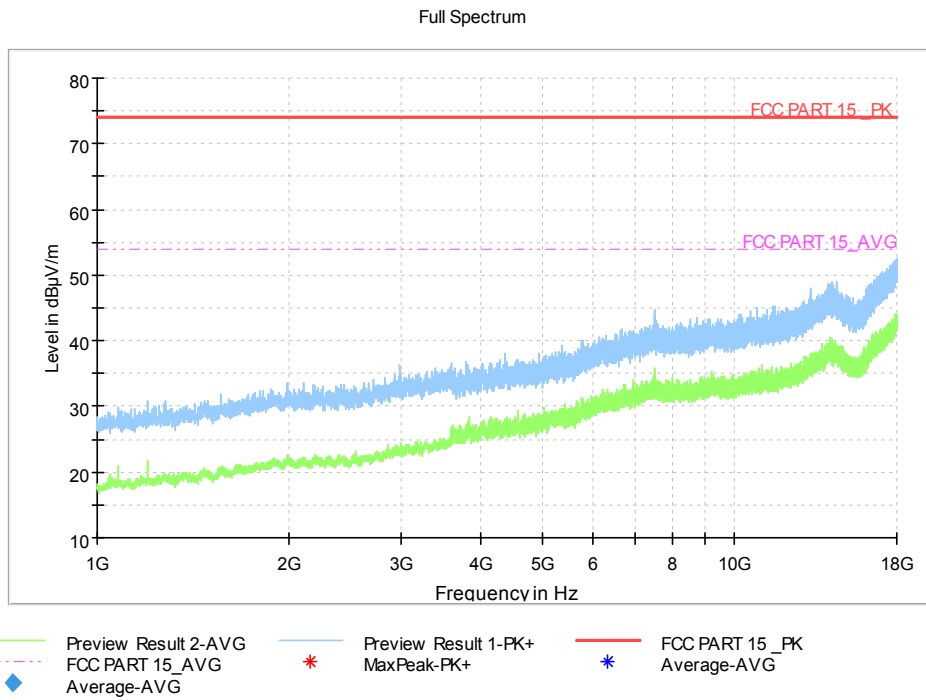


Fig A.4 Radiated Emission from 1GHz to 18GHz

Measurement results for Set.3:

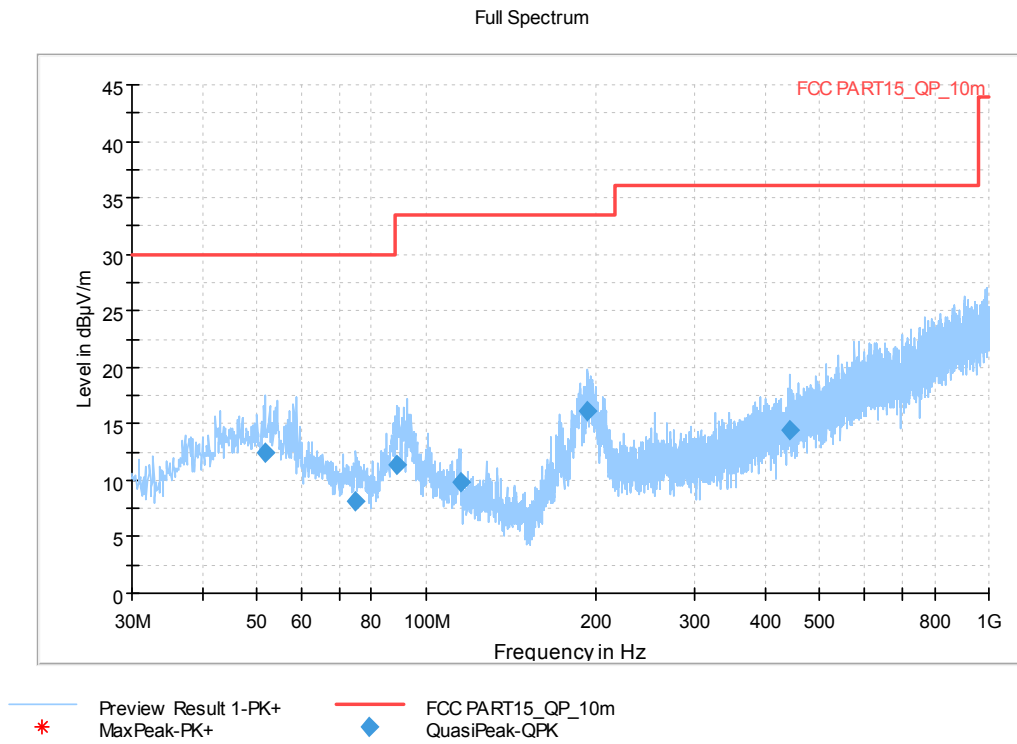


Fig A.5 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
51.825000	12.38	30.00	17.62	1000.0	120.000	118.9	V	-3.0
75.008000	8.08	30.00	21.92	1000.0	120.000	275.0	V	254.0
88.588000	11.39	33.50	22.13	1000.0	120.000	177.4	V	277.0
114.875000	9.82	33.50	23.70	1000.0	120.000	125.0	V	106.0
193.930000	16.15	33.50	17.37	1000.0	120.000	119.9	V	-16.0
442.541000	14.44	36.00	21.58	1000.0	120.000	225.0	V	79.0

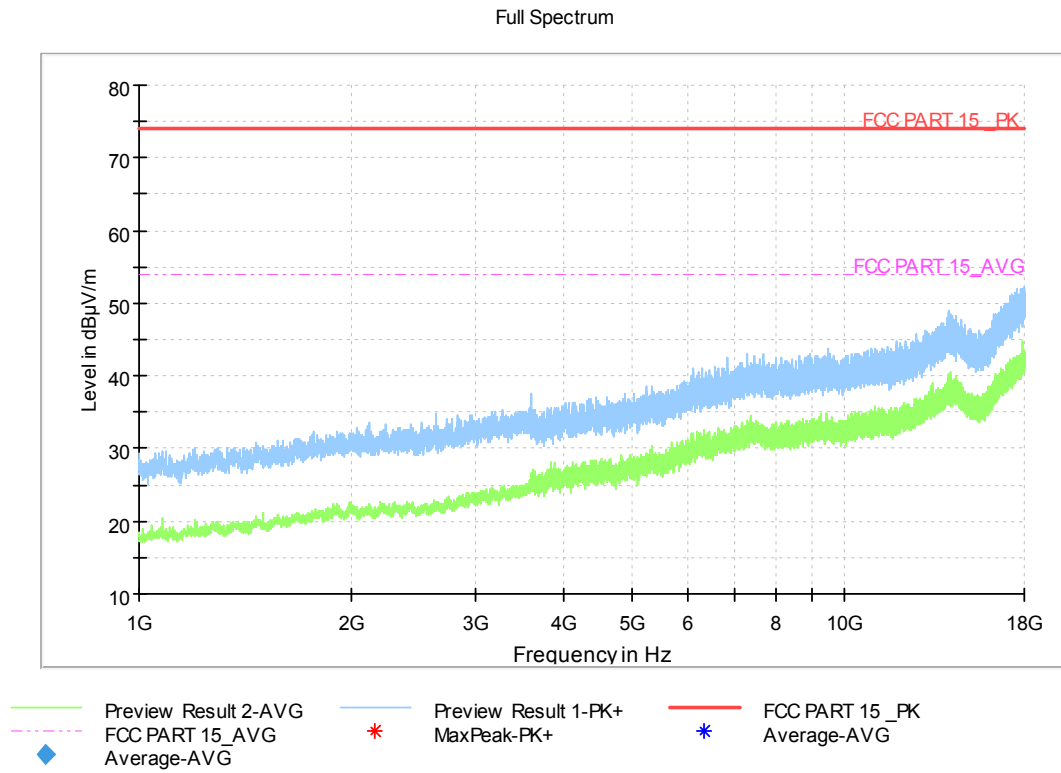


Fig A.6 Radiated Emission from 1GHz to 18GHz

Measurement results for Set.4:

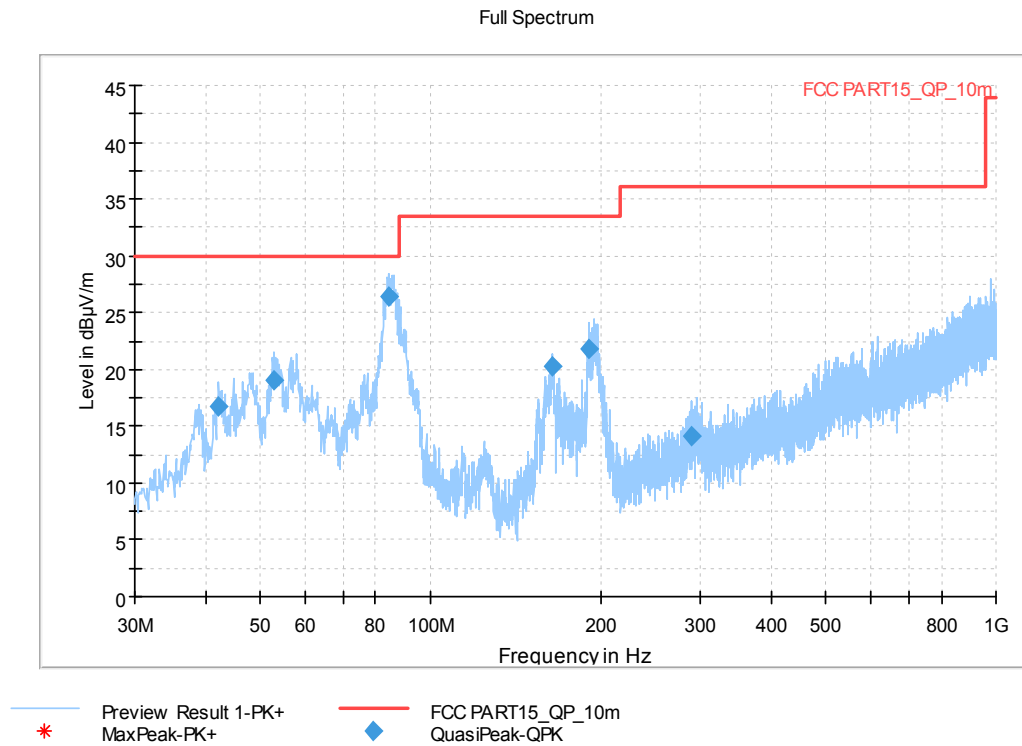


Fig A.7 Radiated Emission from 30MHz to 1GHz

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
42.222000	16.73	30.00	13.27	1000.0	120.000	125.0	V	-10.0
52.892000	18.99	30.00	11.01	1000.0	120.000	119.6	V	259.0
84.417000	26.42	30.00	3.58	1000.0	120.000	125.0	V	300.0
163.860000	20.32	33.50	13.20	1000.0	120.000	111.1	V	-30.0
190.729000	21.88	33.50	11.64	1000.0	120.000	185.9	V	153.0
289.766000	14.06	36.00	21.96	1000.0	120.000	107.6	V	174.0

Full Spectrum

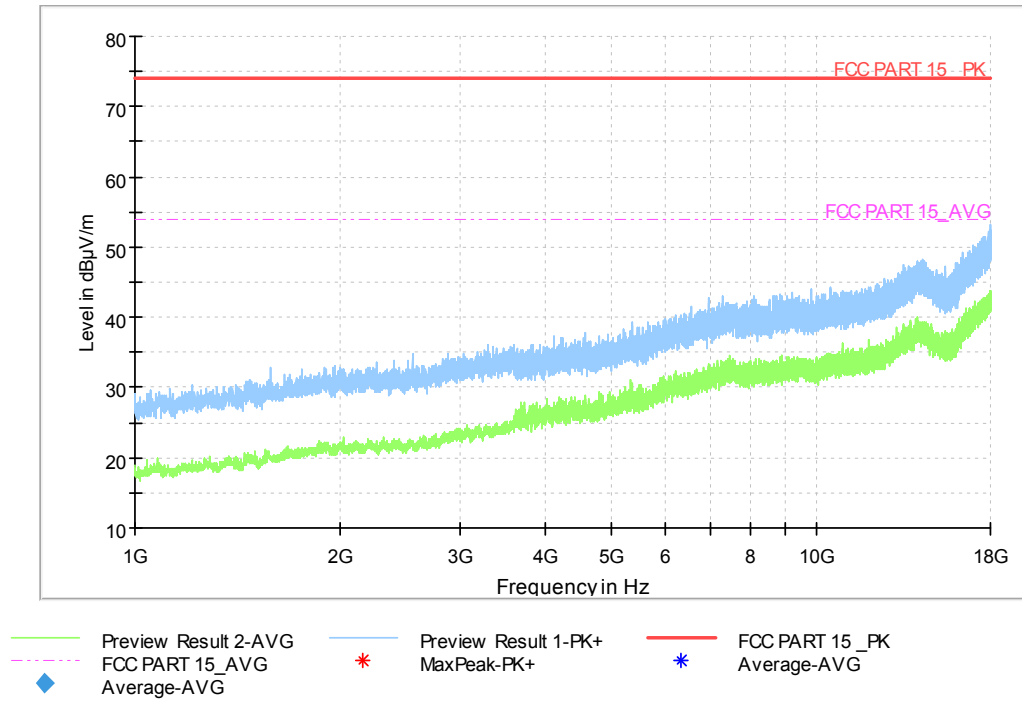


Fig A.8 Radiated Emission from 1GHz to 18GHz

Measurement results for Set.5:

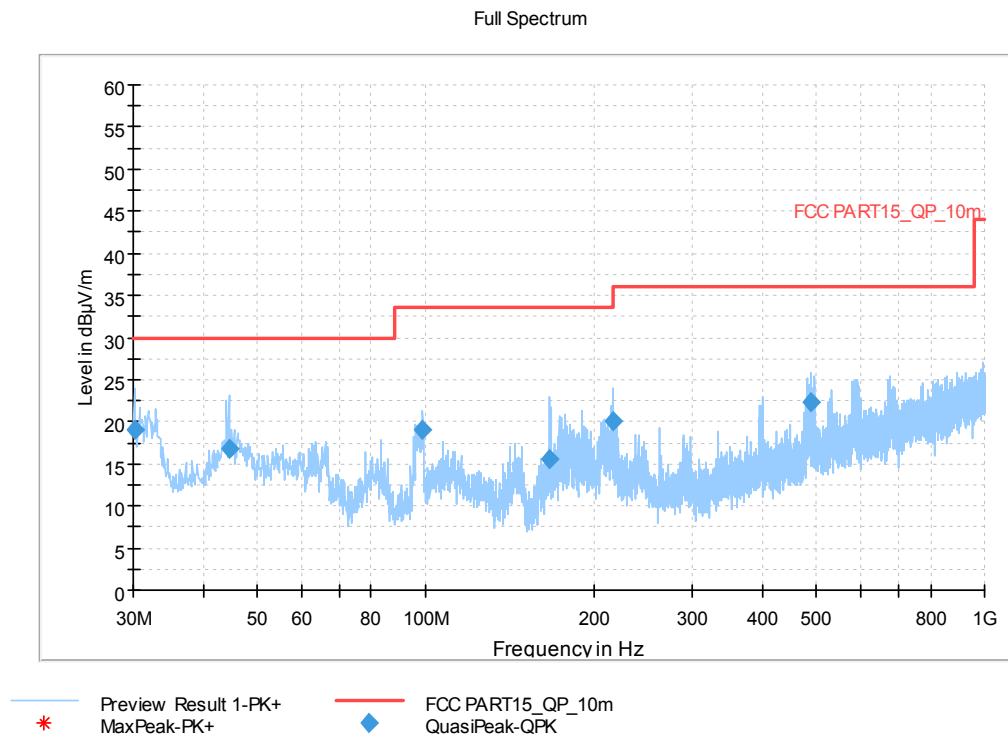


Fig A.9 Radiated Emission from 30MHz to 1GHz

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
30.194000	19.05	30.00	10.95	1000.0	120.000	125.0	V	97.0
44.453000	16.78	30.00	13.22	1000.0	120.000	175.0	V	102.0
98.967000	19.02	33.50	14.50	1000.0	120.000	125.0	V	-3.0
166.673000	15.60	33.50	17.92	1000.0	120.000	115.0	V	196.0
216.046000	19.99	36.00	16.03	1000.0	120.000	102.0	V	267.0
488.228000	22.39	36.00	13.63	1000.0	120.000	297.0	V	-12.0

Full Spectrum

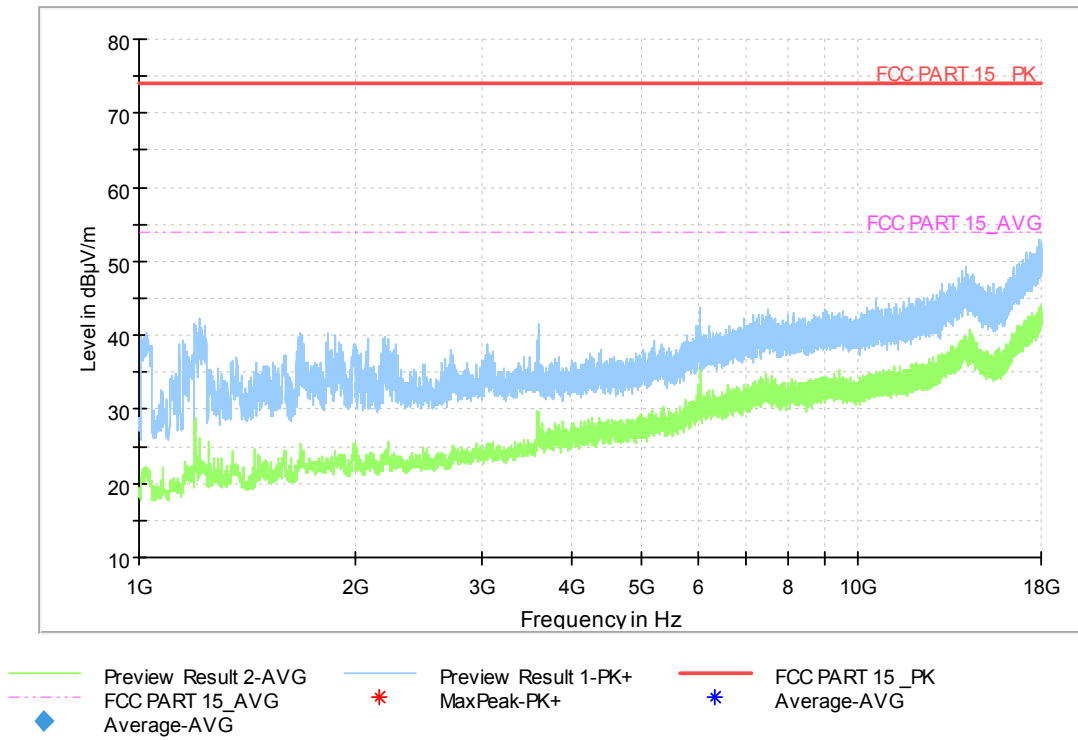


Fig A.10 Radiated Emission from 1GHz to 18GHz

Measurement results for Set.6:

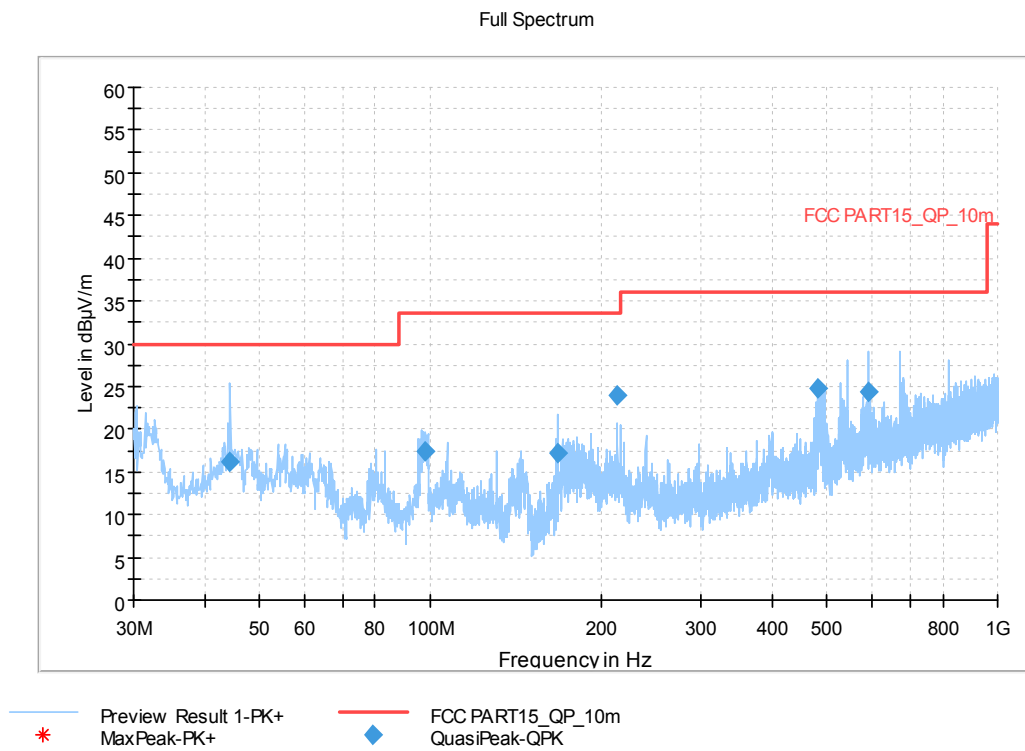


Fig A.11 Radiated Emission from 30MHz to 1GHz

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
44.356000	16.11	30.00	13.89	1000.0	120.000	302.0	V	23.0
98.191000	17.46	33.50	16.06	1000.0	120.000	106.0	V	17.0
167.934000	17.20	33.50	16.32	1000.0	120.000	118.0	V	196.0
214.106000	24.00	33.50	9.52	1000.0	120.000	119.0	V	210.0
481.923000	24.78	36.00	11.24	1000.0	120.000	277.0	V	12.0
592.794000	24.27	36.00	11.75	1000.0	120.000	210.0	V	-23.0

Full Spectrum

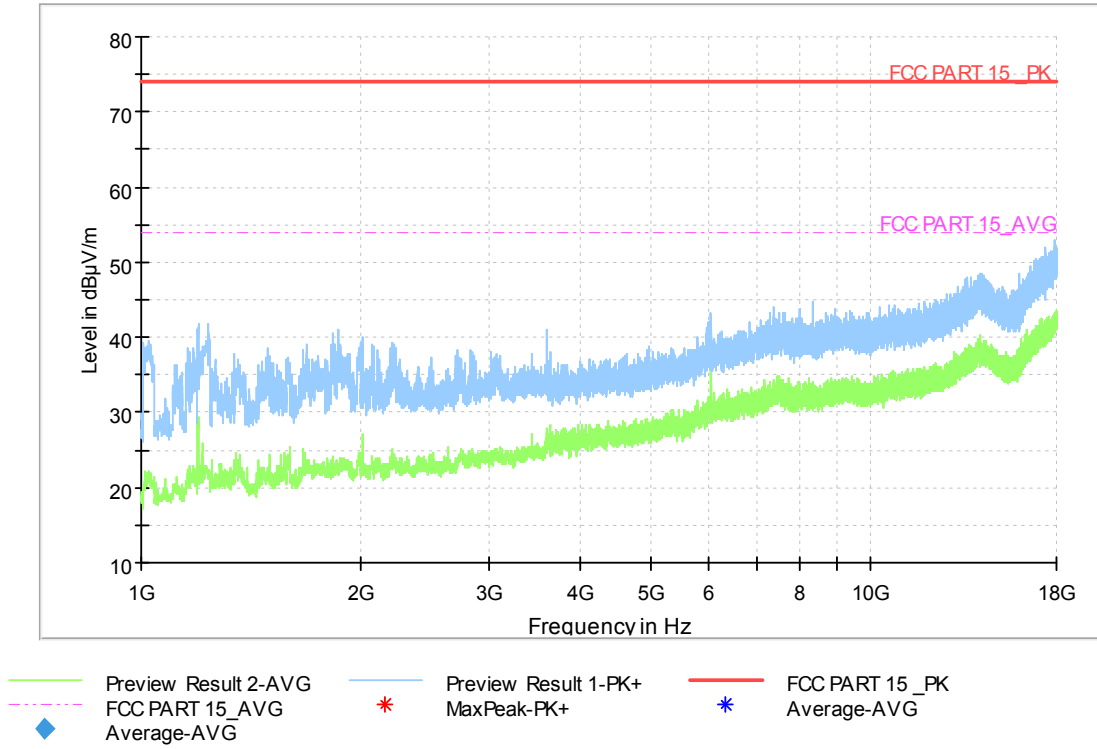


Fig A.12 Radiated Emission from 1GHz to 18GHz

A.2 Conducted Emission

Reference

FCC: CFR Part 15.107(a).

A.2.1 Method of measurement

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits. Tested in accordance with the procedures of ANSI C63.4 – 2014, section 7.3.

A.2.2 EUT Operating Mode

The MS is operating in the USB mode and 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 (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: $U= 3.1$ dB, $k=2$.

Charging Mode, Set.1:

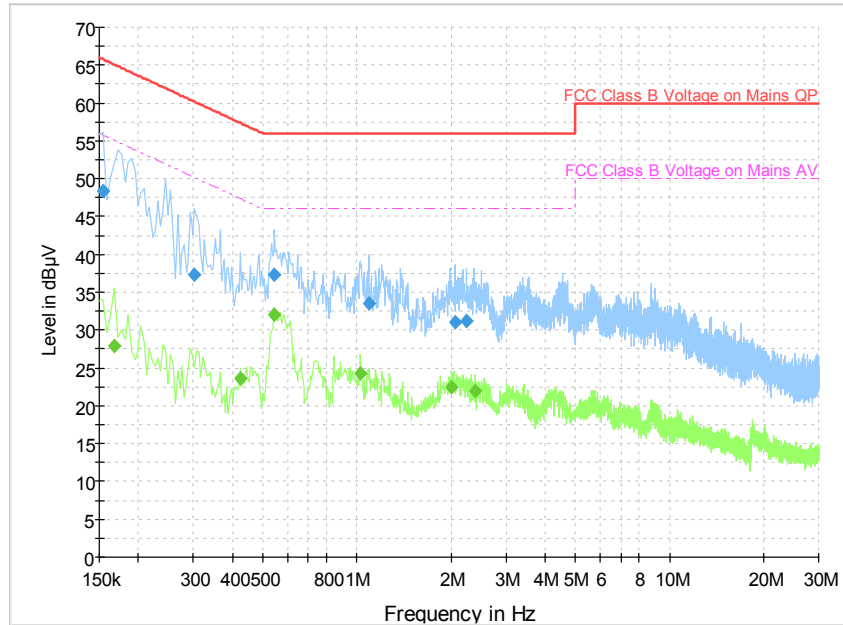


Fig A.13 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.154500	48.3	1000.0	9.000	On	L1	19.7	17.4	65.8	
0.303000	37.4	1000.0	9.000	On	L1	19.6	22.8	60.2	
0.546000	37.4	1000.0	9.000	On	N	19.5	18.6	56.0	
1.090500	33.5	1000.0	9.000	On	L1	19.6	22.5	56.0	
2.058000	31.1	1000.0	9.000	On	L1	19.5	24.9	56.0	
2.238000	31.2	1000.0	9.000	On	L1	19.6	24.8	56.0	

Final Result 2

Frequency (MHz)	Average (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.168000	27.9	1000.0	9.000	On	L1	19.7	27.2	55.1	
0.424500	23.6	1000.0	9.000	On	L1	19.6	23.7	47.4	
0.546000	32.1	1000.0	9.000	On	N	19.5	13.9	46.0	
1.023000	24.2	1000.0	9.000	On	L1	19.6	21.8	46.0	
2.004000	22.4	1000.0	9.000	On	L1	19.5	23.6	46.0	
2.386500	21.9	1000.0	9.000	On	L1	19.6	24.1	46.0	

Charging Mode, Set.2:

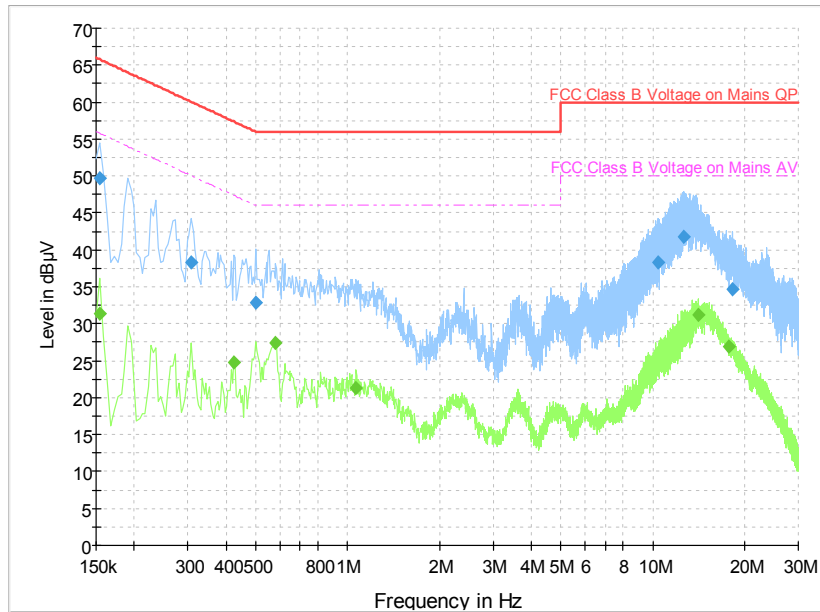


Fig A.14 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.154500	49.7	1000.0	9.000	On	L1	19.7	16.1	65.8	
0.307500	38.2	1000.0	9.000	On	L1	19.6	21.8	60.0	
0.501000	32.9	1000.0	9.000	On	N	19.6	23.1	56.0	
10.387500	38.4	1000.0	9.000	On	L1	19.9	21.6	60.0	
12.637500	41.8	1000.0	9.000	On	L1	19.9	18.2	60.0	
18.298500	34.6	1000.0	9.000	On	N	19.9	25.4	60.0	

Final Result 2

Frequency (MHz)	Average (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.154500	31.4	1000.0	9.000	On	L1	19.7	24.4	55.8	
0.424500	24.8	1000.0	9.000	On	L1	19.6	22.6	47.4	
0.582000	27.4	1000.0	9.000	On	L1	19.6	18.6	46.0	
1.068000	21.3	1000.0	9.000	On	L1	19.6	24.7	46.0	
14.059500	31.2	1000.0	9.000	On	L1	20.0	18.8	50.0	
17.772000	26.9	1000.0	9.000	On	L1	19.8	23.1	50.0	

Charging Mode, Set.3:

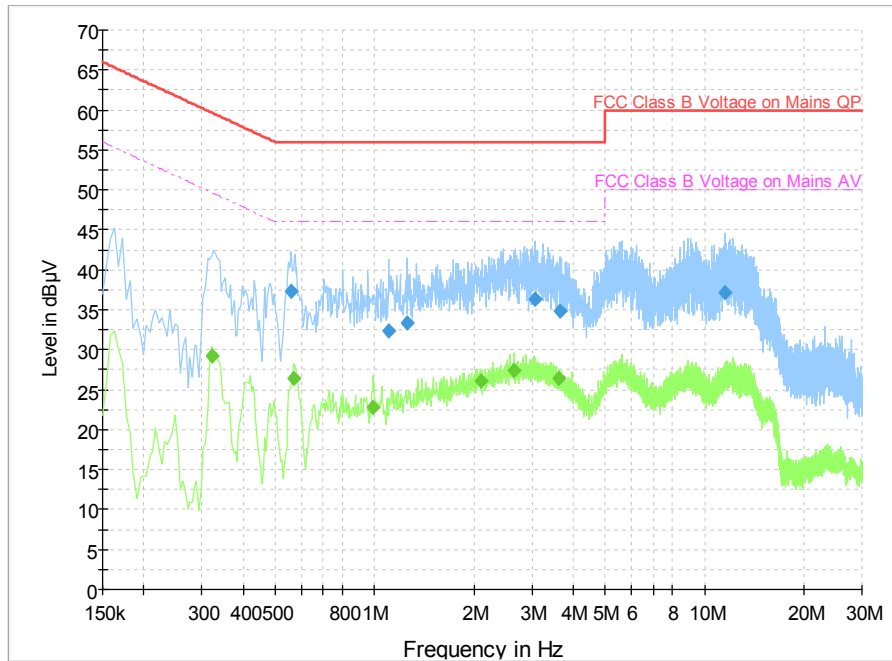


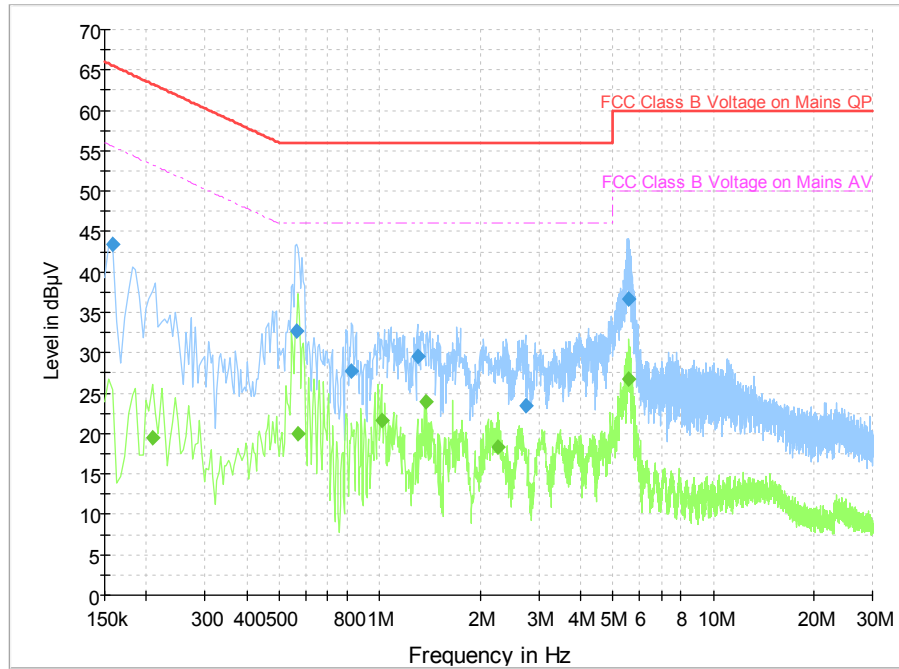
Fig A.15 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.559500	37.3	1000.0	9.000	On	L1	19.6	18.7	56.0	
1.104000	32.3	1000.0	9.000	On	L1	19.6	23.7	56.0	
1.257000	33.3	1000.0	9.000	On	L1	19.6	22.7	56.0	
3.075000	36.2	1000.0	9.000	On	L1	19.6	19.8	56.0	
3.651000	34.8	1000.0	9.000	On	L1	19.7	21.2	56.0	
11.535000	37.1	1000.0	9.000	On	L1	19.9	22.9	60.0	

Final Result 2

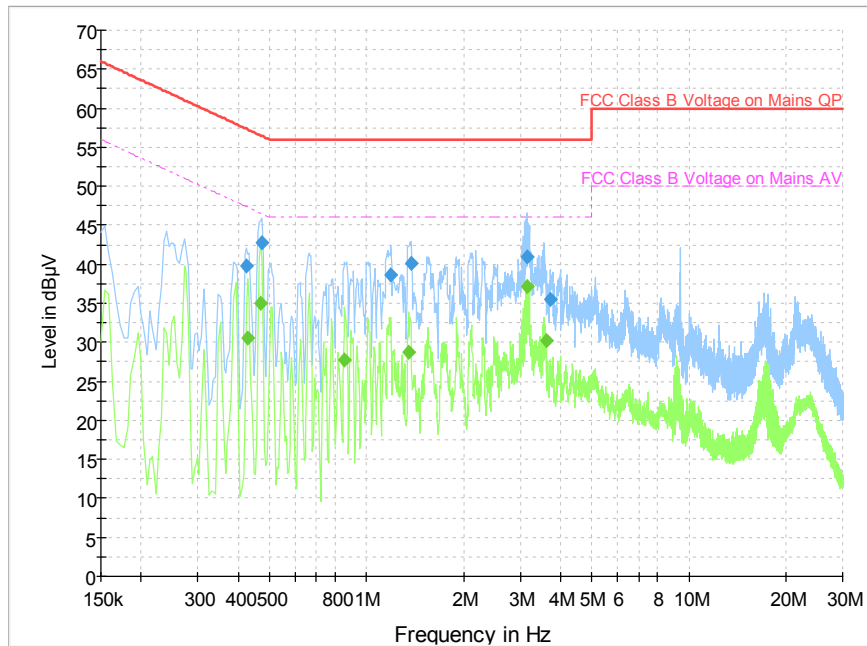
Frequency (MHz)	Average (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.321000	29.2	1000.0	9.000	On	L1	19.6	20.5	49.7	
0.568500	26.4	1000.0	9.000	On	N	19.5	19.6	46.0	
0.991500	22.7	1000.0	9.000	On	N	19.6	23.3	46.0	
2.107500	26.2	1000.0	9.000	On	L1	19.5	19.8	46.0	
2.643000	27.4	1000.0	9.000	On	L1	19.6	18.6	46.0	
3.615000	26.4	1000.0	9.000	On	L1	19.7	19.6	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	43.5	1000.0	9.000	On	L1	19.7	22.0	65.5	
0.564000	32.8	1000.0	9.000	On	L1	19.6	23.2	56.0	
0.825000	27.7	1000.0	9.000	On	L1	19.6	28.3	56.0	
1.297500	29.5	1000.0	9.000	On	L1	19.6	26.5	56.0	
2.733000	23.4	1000.0	9.000	On	L1	19.6	32.6	56.0	
5.563500	36.7	1000.0	9.000	On	L1	19.8	23.3	60.0	

Final Result 2

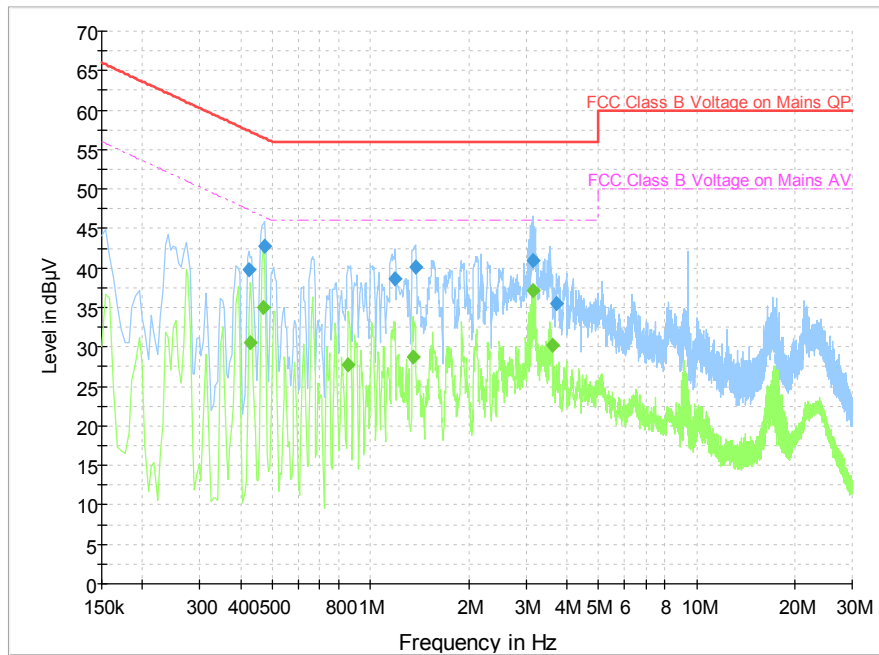
Frequency (MHz)	Average (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.208500	19.4	1000.0	9.000	On	L1	19.6	33.8	53.3	
0.568500	20.0	1000.0	9.000	On	N	19.5	26.0	46.0	
1.014000	21.6	1000.0	9.000	On	N	19.6	24.4	46.0	
1.383000	23.9	1000.0	9.000	On	N	19.6	22.1	46.0	
2.260500	18.4	1000.0	9.000	On	N	19.6	27.6	46.0	
5.595000	26.8	1000.0	9.000	On	L1	19.8	23.2	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
0.424500	39.8	1000.0	9.000	On	L1	19.6	17.5	57.4	
0.474000	42.8	1000.0	9.000	On	N	19.6	13.7	56.4	
1.189500	38.6	1000.0	9.000	On	N	19.6	17.4	56.0	
1.374000	40.1	1000.0	9.000	On	L1	19.6	15.9	56.0	
3.151500	40.9	1000.0	9.000	On	N	19.6	15.1	56.0	
3.718500	35.5	1000.0	9.000	On	N	19.6	20.5	56.0	

Final Result 2

Frequency (MHz)	Average (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.429000	30.6	1000.0	9.000	On	L1	19.6	16.7	47.3	
0.469500	34.9	1000.0	9.000	On	N	19.6	11.6	46.5	
0.856500	27.7	1000.0	9.000	On	N	19.5	18.3	46.0	
1.351500	28.7	1000.0	9.000	On	N	19.6	17.3	46.0	
3.147000	37.1	1000.0	9.000	On	L1	19.7	8.9	46.0	
3.615000	30.1	1000.0	9.000	On	N	19.6	15.9	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	17.5	57.4	
0.474000	42.8	1000.0	9.000	On	N	19.6	13.7	56.4	
1.189500	38.6	1000.0	9.000	On	N	19.6	17.4	56.0	
1.374000	40.1	1000.0	9.000	On	L1	19.6	15.9	56.0	
3.151500	40.9	1000.0	9.000	On	N	19.6	15.1	56.0	
3.718500	35.5	1000.0	9.000	On	N	19.6	20.5	56.0	

Final Result 2

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.429000	30.6	1000.0	9.000	On	L1	19.6	16.7	47.3	
0.469500	34.9	1000.0	9.000	On	N	19.6	11.6	46.5	
0.856500	27.7	1000.0	9.000	On	N	19.5	18.3	46.0	
1.351500	28.7	1000.0	9.000	On	N	19.6	17.3	46.0	
3.147000	37.1	1000.0	9.000	On	L1	19.7	8.9	46.0	
3.615000	30.1	1000.0	9.000	On	N	19.6	15.9	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, Zhang Tianli

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