



FCC PART 15B TEST REPORT

No. I22Z61292-EMC01

for

BLU Products,Inc.

Smart Phone

Model name: B1550VL

FCC ID: YHLBLUB1550VL

with

Hardware Version: V1.0

Software Version: BLU_B1550VL_V12.0.02.05.02.

17.FSec

Issued Date: 2022-09-01

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: ctl_terminals@caict.ac.cn, website: www.caict.ac.cn



REPORT HISTORY

Report Number	Revision	Description	Issue Date
I22Z61292-EMC01	Rev.0	1 st edition	2022-09-01

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



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1. Test Laboratory

1.1. Testing Location

CTTL (huayuan North Road)

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

1.2. Testing Environment

Normal Temperature: 15-35°C

Relative Humidity: 20-75%

1.3. Project data

Testing Start Date: 2022-08-10

Testing End Date: 2022-08-24

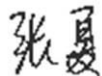
1.4. Signature



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	BLU Products, Inc.
Address	10814 NW 33rd St # 100 Doral, FL 33172, USA
Contact	Zeng wei
Email	zwei@ctasiasz.com
Tel.	305.715.7171
Fax	305.436.8819

2.2. Manufacturer Information

Company Name	BLU Products, Inc.
Address	10814 NW 33rd St # 100 Doral, FL 33172, USA
Contact	Zeng wei
Email	zwei@ctasiasz.com
Tel.	305.715.7171
Fax	305.436.8819

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

3.1. About EUT

Description	Smart Phone
Model Name	B1550VL
FCC ID:	YHLBLUB1550VL

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	350547790007484	V1.0	BLU_B1550VL_V12.0.02.05.02.17.FSec

*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	Charger	/	/
AE3	USB Cable	/	
AE4	USB Cable	/	

AE1

Model	TN-BP4000N1
Manufacturer	Guangdong Fenghua New Energy Co.,Ltd.
Capacity	4000mAh
Nominal Voltage	3.85V

AE2

Model	TN-050200U3
Manufacturer	Guangdong Beicom Electronics Co.,Ltd.
Length of cable	/

AE3

Model	336275
Manufacturer	SUNTOPS ELECTRONICS CO.,LTD
Length of cable	/

AE4

Model	T365-011B-1
Manufacturer	Shenzhen Yihuaxing Electronics Co. Ltd.
Length of cable	/

3.4. EUT set-ups

EUT set-up No.	Combination of EUT and AE	Remarks
Set.1	EUT1 + AE1 + AE2 + AE3	Charger1 +REAR Camera+GSM 850 idle
Set.2	EUT1 + AE1 + AE2 + AE3	Charger1+MP4+WCDMA 850 idle
Set.3	EUT1 + AE1 + AE2	USB+ front camera+LTE B5 idle

Note:



Equipment Under Test (EUT) is a model of Smart Phone with integrated antenna.

It supports

UMTS Band FDD Band II(W1900) /FDD Band IV(W1700)/FDD Band V(W850)

LTE Band FDD2/4/5/12/13/66

NR Band NSA n2/5/66/77/79

It has MP3, Camera, USB memory, Bluetooth 5.1, Wi-Fi (802.11a/b/g/n/ac, 802.11n supports 20MHz and 40MHz bandwidth, 802.11ac supports 20MHz ,40MHz and 80MHz bandwidth) ,GPS functions.

The device contains receivers which tune and operate between 30MHz-960MHz in the following bands: WCDMA850, LTE Band 5/12/13, NR n5. 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 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	ESW44	103023	R&S	2022-10-28	1 Year
2	LISN	ENV216	101200	R&S	2023-06-29	1 year
3	Universal Radio Communication Tester	CMW500	116588	R&S	2022-12-20	1 year
4	Test Receiver	ESCI 7	100344	R&S	2023-03-21	1 Year
5	EMI Antenna	VULB 9163	302	SCHWARZBECK	2022-12-28	1 year
6	EMI Antenna	3115	00167250	ETS-Lindgren	2023-06-20	1 year
7	Signal Generator	SMB100A	102063	R&S	2022-12-30	1 year
8	Software	EMC32	/	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 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 ($\mu\text{V/m}$)		
	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:

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

Where

G_A : Antenna factor of receive antenna

G_{PL} : Path Loss

P_{Mea} : Measurement result on receiver.

Measurement uncertainty (30MHz-1GHz): $U = 5.15$ dB, $k=2$.

Measurement uncertainty (≥ 1 GHz): $U = 5.54$ dB, $k=2$.

Measurement results for Set.1:

Charing 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)
17617.840	43.20	-29.52	45.25	27.47	54.00	10.80	V
17639.940	43.10	-29.40	45.25	27.25	54.00	10.90	V
17901.740	42.90	-29.33	45.95	26.27	54.00	11.10	V
17996.940	42.90	-29.06	46.66	25.30	54.00	11.10	H
17531.820	42.80	-29.32	44.35	27.77	54.00	11.20	V
17559.700	42.80	-29.49	44.35	27.93	54.00	11.20	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)
17540.660	54.20	-29.49	44.35	39.33	74.00	19.80	V
17996.600	54.10	-29.06	46.66	36.50	74.00	19.90	V
17614.440	54.00	-29.52	45.25	38.27	74.00	20.00	V
17892.560	53.90	-29.53	45.95	37.48	74.00	20.10	H
17984.020	53.90	-29.06	46.66	36.30	74.00	20.10	V
17614.780	53.80	-29.52	45.25	38.07	74.00	20.20	H

Measurement results for Set.2:
Charing 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)
17997.620	43.00	-29.06	46.66	25.40	54.00	11.00	V
17991.840	42.90	-29.06	46.66	25.30	54.00	11.10	H
17554.260	42.90	-29.49	44.35	28.03	54.00	11.10	V
17995.240	42.80	-29.06	46.66	25.20	54.00	11.20	V
17651.500	42.80	-29.60	45.25	27.15	54.00	11.20	H
18000.000	42.70	-29.24	47.00	24.94	54.00	11.30	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)
17994.560	54.40	-29.06	46.66	36.80	74.00	19.60	H
17363.520	54.00	-29.97	43.36	40.61	74.00	20.00	V
17556.640	54.00	-29.49	44.35	39.13	74.00	20.00	V
17634.160	53.80	-29.40	45.25	37.95	74.00	20.20	V
17803.480	53.70	-29.63	45.95	37.38	74.00	20.30	H
17641.980	53.70	-29.60	45.25	38.05	74.00	20.30	V

Measurement results for Set.3:
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)
6052.740	46.50	-37.82	34.40	49.92	54.00	7.50	H
6052.400	45.40	-37.82	34.40	48.82	54.00	8.60	V
6053.080	44.50	-37.82	34.40	47.92	54.00	9.50	H
17997.620	43.50	-29.06	46.66	25.90	54.00	10.50	V
17548.820	43.00	-29.49	44.35	28.13	54.00	11.00	H
17977.220	42.90	-29.06	46.66	25.30	54.00	11.10	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)
17566.500	54.00	-29.79	45.25	38.55	74.00	20.00	V
17622.260	53.70	-29.40	45.25	37.85	74.00	20.30	V
17359.780	53.60	-29.97	43.36	40.21	74.00	20.40	H
17891.540	53.60	-29.53	45.95	37.18	74.00	20.40	V
17465.860	53.50	-30.06	44.35	39.20	74.00	20.50	H
17977.900	53.50	-29.06	46.66	35.90	74.00	20.50	H

Measurement results for Set.1:

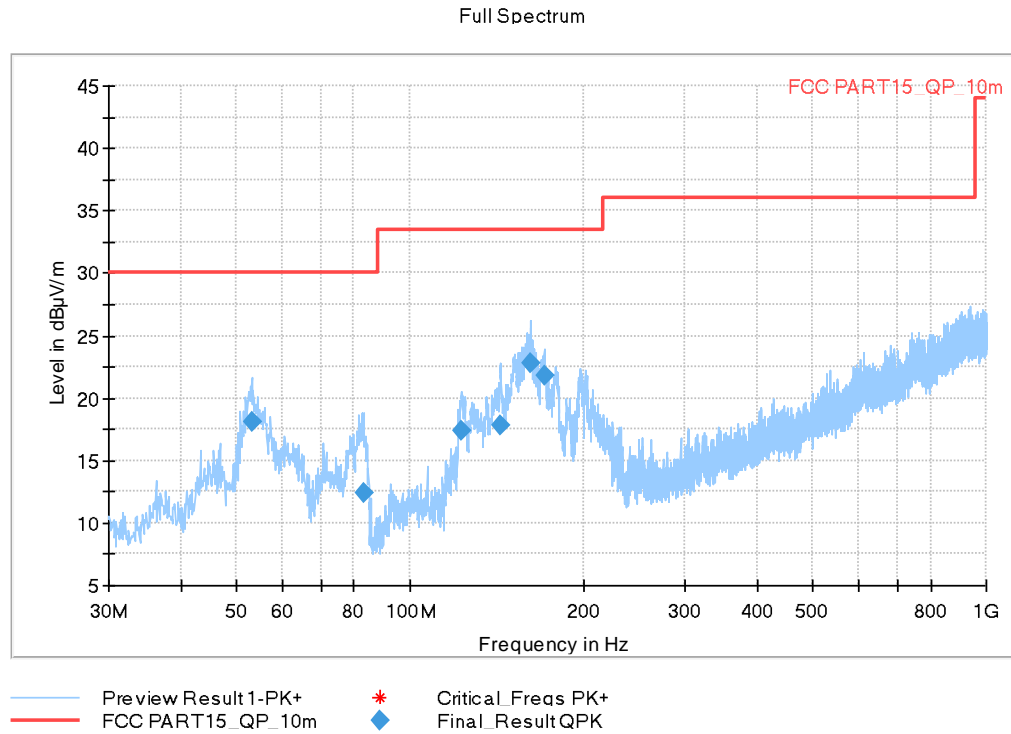


Fig A.1 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
53.086000	18.08	30.00	11.92	2000.0	120.000	100.0	V	-45.0
83.059000	12.37	30.00	17.63	2000.0	120.000	323.0	V	86.0
122.732000	17.42	33.52	16.10	2000.0	120.000	125.0	V	-4.0
143.684000	17.86	33.52	15.66	2000.0	120.000	100.0	V	8.0
161.823000	22.81	33.52	10.71	2000.0	120.000	100.0	V	22.0
170.844000	21.75	33.52	11.77	2000.0	120.000	125.0	V	9.0

Full Spectrum

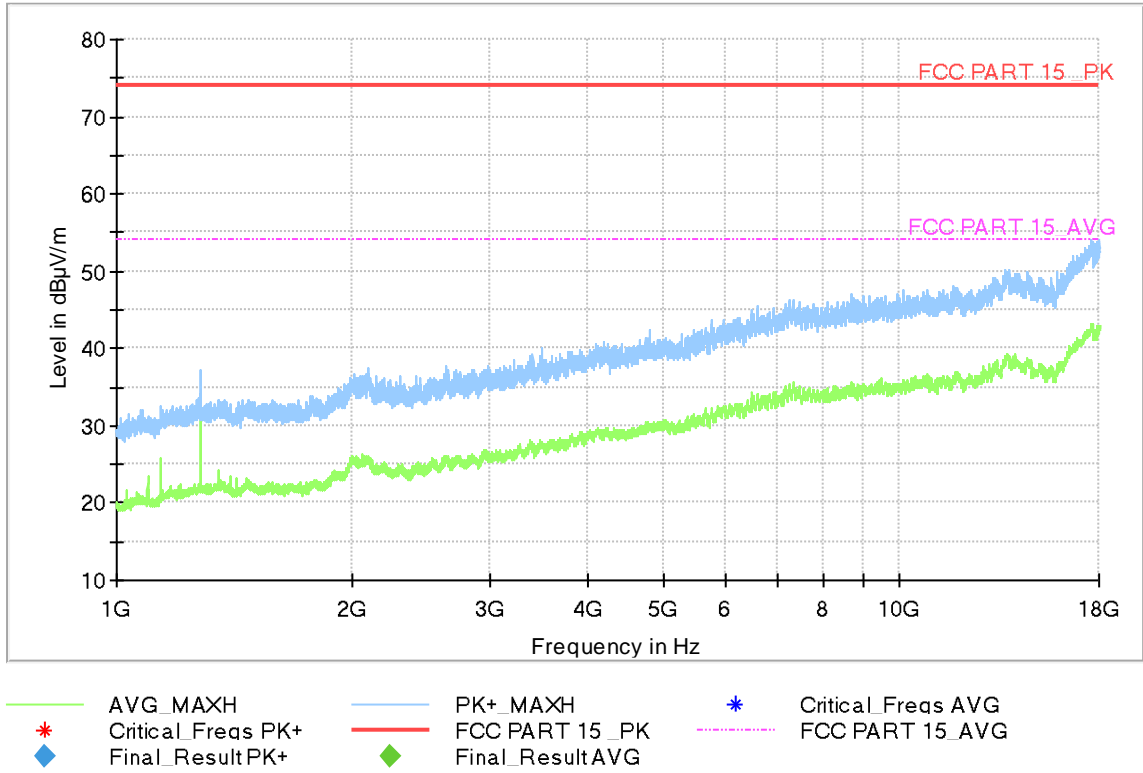
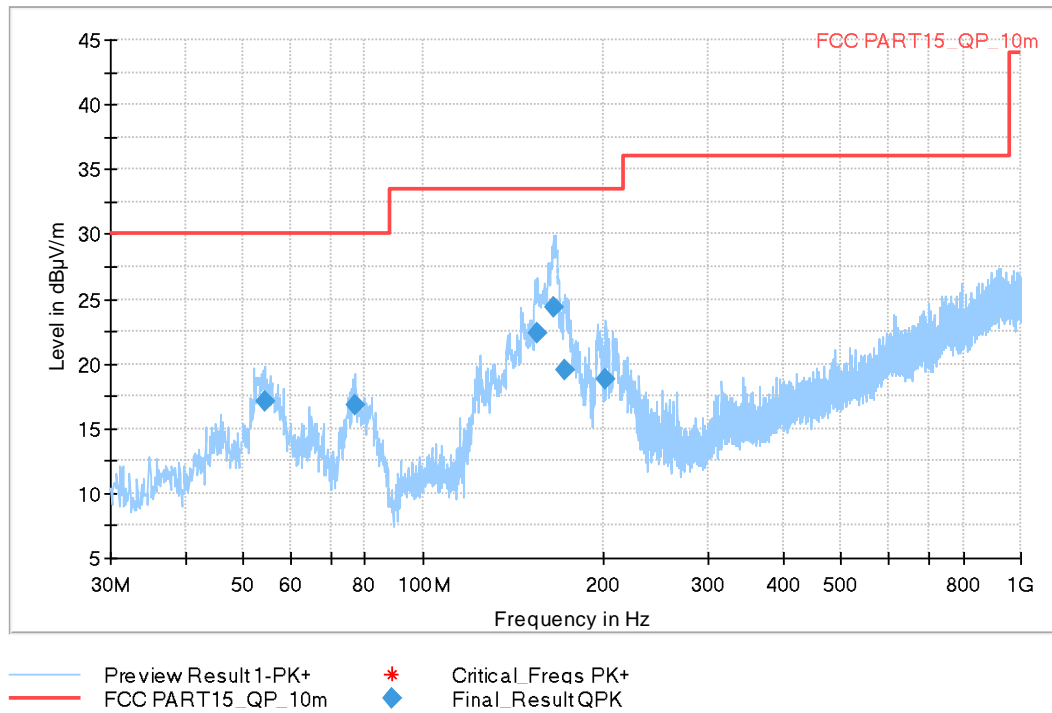


Fig A.2 Radiated Emission from 1GHz to 18GHz

Measurement results for Set.2:

Full Spectrum


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)	PoI	Azimuth (deg)
54.444000	17.04	30.00	12.96	2000.0	120.000	100.0	V	315.0
76.851000	16.84	30.00	13.16	2000.0	120.000	108.0	V	86.0
154.839000	22.37	33.52	11.15	2000.0	120.000	175.0	V	9.0
165.800000	24.37	33.52	9.15	2000.0	120.000	100.0	V	9.0
172.978000	19.57	33.52	13.95	2000.0	120.000	275.0	V	8.0
202.369000	18.76	33.52	14.76	2000.0	120.000	100.0	V	-5.0

Full Spectrum

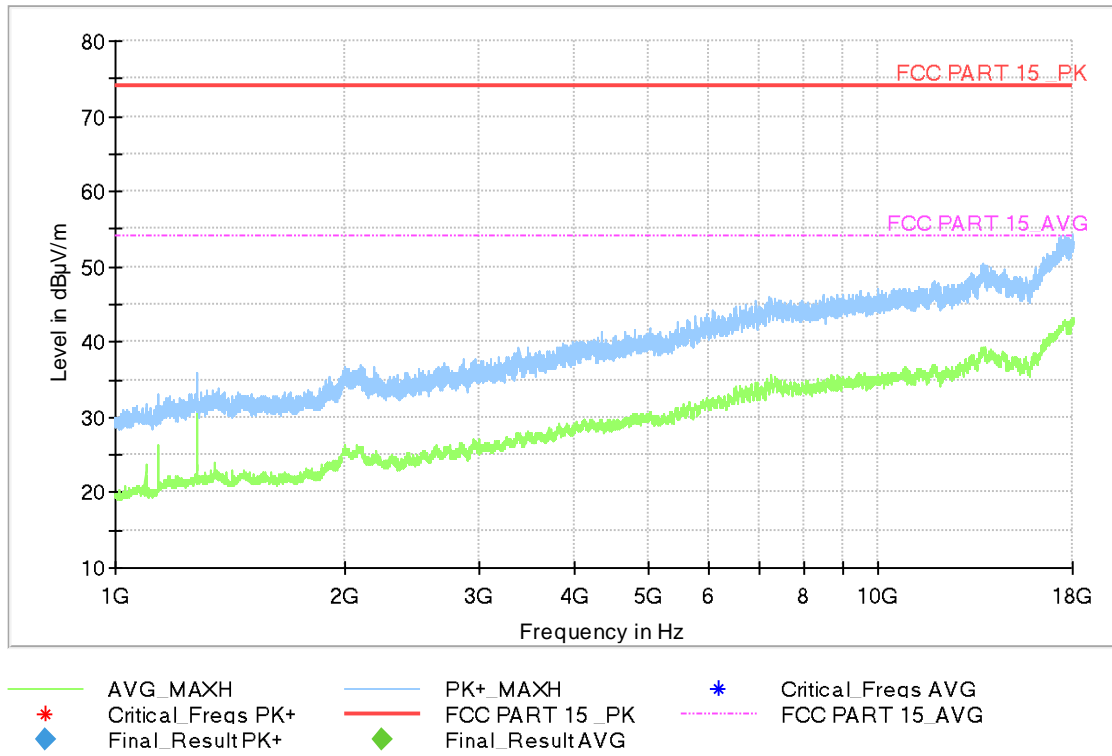


Fig A.4 Radiated Emission from 1GHz to 18GHz

Measurement results for Set.3:

Full Spectrum

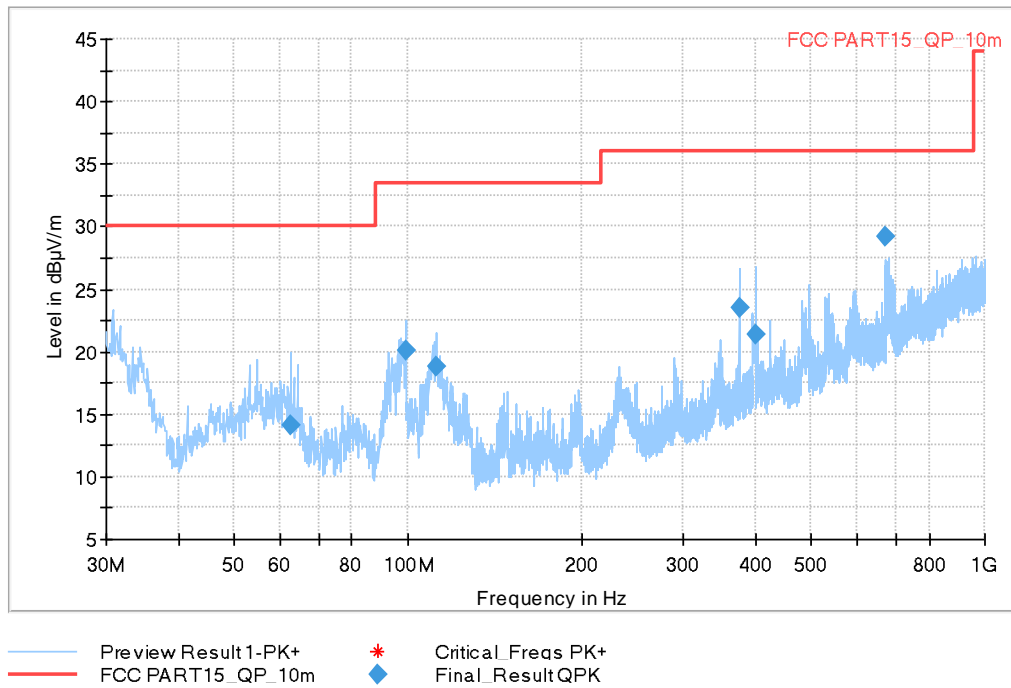


Fig A.5 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	PoI	Azimuth (deg)
62.786000	14.05	30.00	15.95	2000.0	120.000	100.0	V	216.0
99.161000	20.10	33.52	13.42	2000.0	120.000	100.0	V	0.0
112.062000	18.78	33.52	14.75	2000.0	120.000	100.0	V	150.0
375.029000	23.47	36.02	12.55	2000.0	120.000	275.0	H	163.0
400.055000	21.31	36.02	14.71	2000.0	120.000	183.0	H	162.0
673.110000	29.16	36.02	6.86	2000.0	120.000	183.0	V	292.0

Full Spectrum

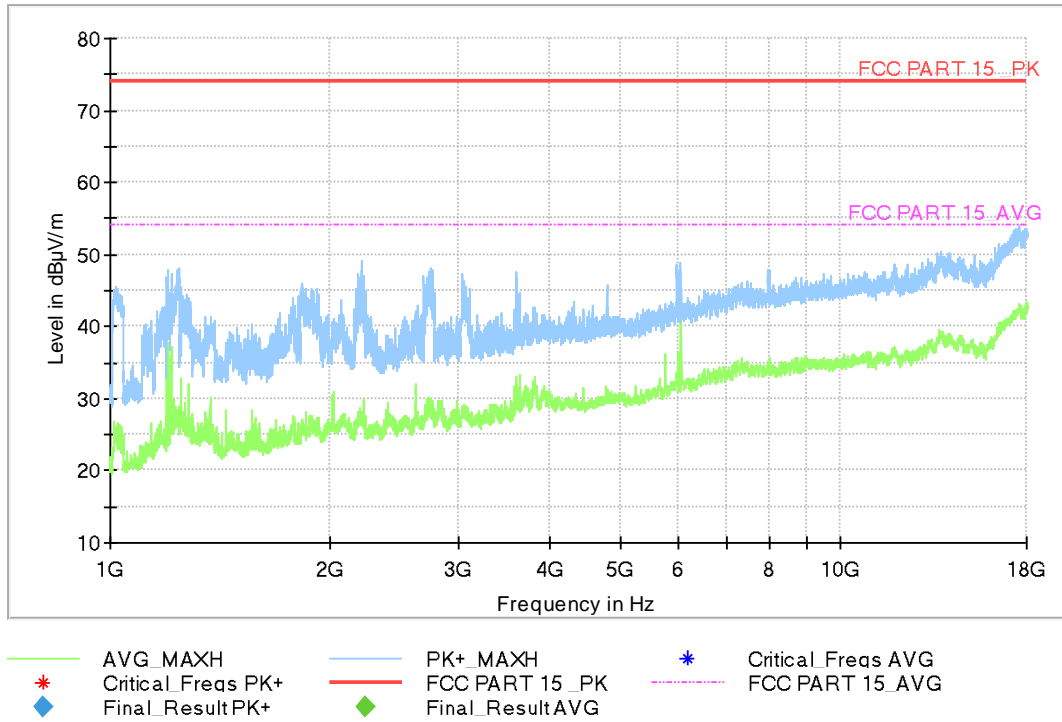


Fig A.6 Radiated Emission from 1GHz to 18GHz

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: $U= 3.08$ dB, $k=2$.

Charging Mode, Set.1:

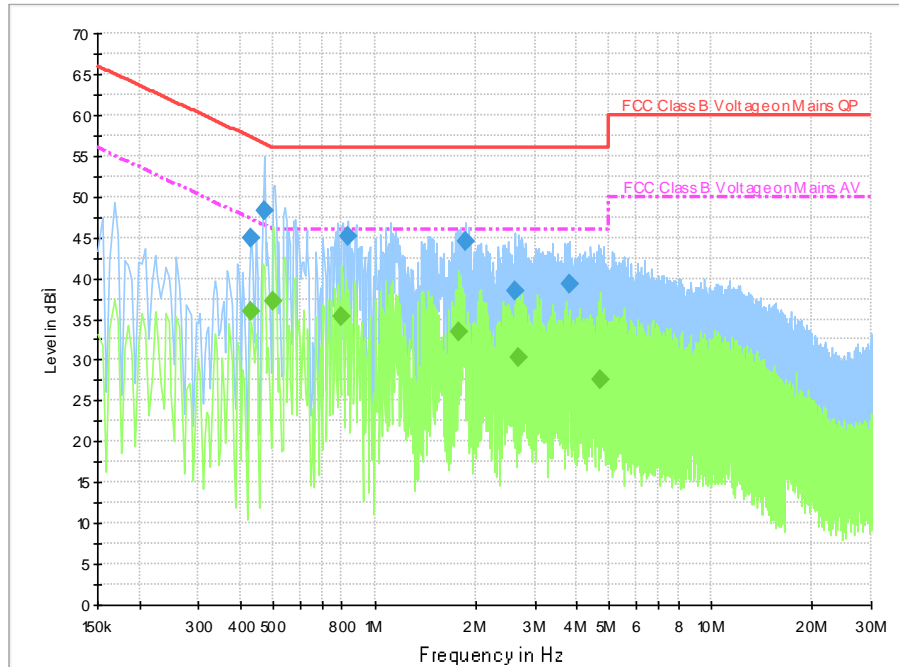


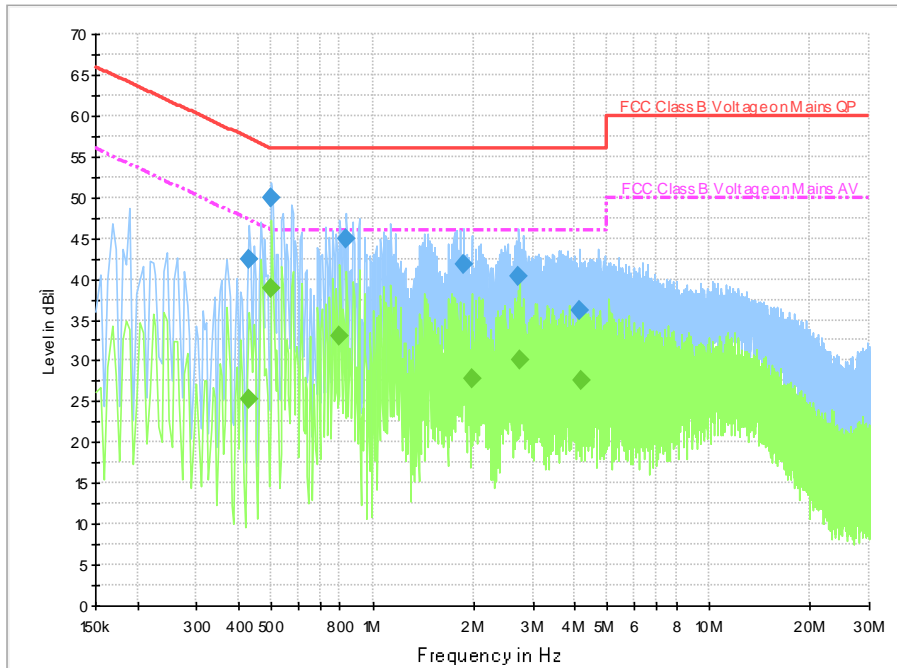
Fig A.7 Conducted Emission from 150kHz to 30MHz

Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.429000	44.9	GND	L1	10.0	12.4	57.3
0.469500	48.3	GND	N	10.0	8.2	56.5
0.834000	45.2	GND	L1	10.0	10.8	56.0
1.860000	44.5	GND	N	10.0	11.5	56.0
2.616000	38.5	GND	L1	10.1	17.5	56.0
3.817500	39.3	GND	L1	10.1	16.7	56.0

Final Result 2

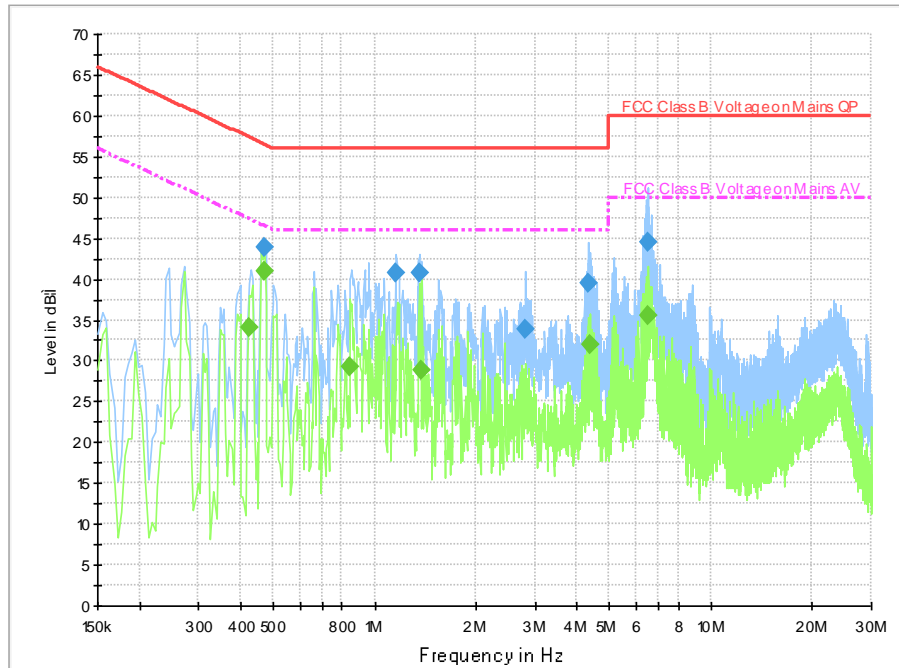
Frequency (MHz)	CAverage (dB μ V)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.429000	35.8	GND	L1	10.0	11.4	47.3
0.501000	37.2	GND	L1	10.0	8.8	46.0
0.798000	35.3	GND	L1	10.0	10.7	46.0
1.788000	33.4	GND	N	10.0	12.6	46.0
2.692500	30.4	GND	L1	10.1	15.6	46.0
4.690500	27.5	GND	L1	10.2	18.5	46.0

Charging Mode, Set.2:

Fig A.8 Conducted Emission from 150kHz to 30MHz
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.429000	42.3	GND	L1	10.0	14.9	57.3
0.501000	49.9	GND	N	10.0	6.1	56.0
0.834000	44.9	GND	L1	10.0	11.1	56.0
1.860000	41.7	GND	N	10.0	14.3	56.0
2.724000	40.4	GND	L1	10.0	15.6	56.0
4.123500	36.2	GND	N	10.1	19.8	56.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.429000	25.2	GND	L1	10.0	22.0	47.3
0.501000	38.9	GND	L1	10.0	7.1	46.0
0.798000	33.0	GND	N	10.0	13.0	46.0
1.968000	27.7	GND	L1	10.0	18.3	46.0
2.742000	30.2	GND	N	10.0	15.8	46.0
4.186500	27.6	GND	L1	10.1	18.4	46.0

USB Mode, Set.3:

Fig A.9 Conducted Emission from 150kHz to 30MHz
Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.469500	43.9	GND	N	10.0	12.6	56.5
1.162500	40.9	GND	N	10.0	15.2	56.0
1.360500	40.8	GND	N	10.0	15.2	56.0
2.818500	33.8	GND	L1	10.0	22.2	56.0
4.330500	39.5	GND	L1	10.2	16.5	56.0
6.495000	44.6	GND	N	10.3	15.4	60.0

Final Result 2

Frequency (MHz)	CAverage (dB μ V)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.424500	34.1	GND	N	9.9	13.2	47.4
0.469500	40.9	GND	L1	10.0	5.6	46.5
0.847500	29.3	GND	L1	10.0	16.7	46.0
1.383000	28.9	GND	N	10.0	17.1	46.0
4.357500	32.0	GND	N	10.1	14.0	46.0
6.495000	35.6	GND	N	10.3	14.4	50.0

END OF REPORT