TESTREPORT

No.I19N00570-EMC

for

Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd

smartphone

Model Name: cp3705AS

FCC ID: R38YLCP3705AS

Hardware Version: P0

Software Version: 9.0.3705AS.SPRINT.190408.1D

Issued Date: 2019-04-29

Designation Number: CN1210

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 SAICT.

Test Laboratory:

Shenzhen Academy of Information and Communications Technology

Building G, Shenzhen International Innovation Center, No.1006 Shennan Road, Futian District, Shenzhen, Guangdong, P. R. China 518026.

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I19N00570-EMC	Rev.0	1st edition	2019-04-29

CONTENTS

1. Test Laboratory

1.1. TestingLocation

Company Name:	Shenzhen Academy of Information and Communications Technology
Address:	Building G, Shenzhen International Innovation Center, No.1006 Shennan Road, Futian District, Shenzhen, Guangdong, P. R. China
Postal Code:	518026
Telephone:	+86(0)755-33322000
Fax:	+86(0)755-33322001

1.2. TestingEnvironment

Normal Temperature:	15-35℃
Relative Humidity:	20-75%

1.3. Project data

Testing Start Date:	2019-03-22
Testing End Date:	2019-04-29

1.4. Signature

Liang Yong
(Prepared this test report)

Zhang Yunzhuan
(Reviewed this test report)

Cao Junfei
Director of the laboratory
(Approvedthis test report)

2. ClientInformation

2.1. Applicant Information

Company Name:	Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd
Address:	Building B, Boton Science Park, Chaguang Road, Xili Town, Nanshan District, Shenzhen

2.2. Manufacturer Information

Company Name:	Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd
Address:	Building B, Boton Science Park, Chaguang Road, Xili Town, Nanshan District, Shenzhen

3. Equipment UnderTest (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	smartphone
Model Name	cp3705AS
FCC ID	R38YLCP3705AS
Condition of EUT as received	No obvious damage in appearance

The Equipment Under Test (EUT) are a model of smartphone with integrated antenna.
The EUT supports GPRS service and EGPRS service.
Remark: The above EUT's information is declared by manufacturer. Please refer to the specifications or user's manual for more detailed information.

3.2. Internal Identification of EUT

EUT ID*	SN or IMEI	HW Version	SW Version
UT01aa	990013490002933	P0	9.0.3705AS.SPRINT.190408.1D
UT02aa	990013490004202	P0	9.0.3705AS.SPRINT.190408.1D

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

3.3. Internal Identification of AE

AE ID*	Description	SN
AE1	Battery	/
AE2	Adapter	/
AE3	Data Cable	/

AE1-1

Model	Li-ion Polymer
Manufacturer	Tianjin Lishen
Capacitance	3980mAh
Nominal Voltage	3.85V

AE1-2

Model	Li-ion Polymer
Manufacturer	Zhuhai Coslight
Capacitance	3980mAh
Nominal Voltage	3.85V

AE2

Model	Q3W18-1U-A
Manufacturer	Shenzhen Ruide

AE3-1

Model	USB A To Type C
Manufacturer	Leagtech Electronics

AE3-2

Model	USB A To Type C
Manufacturer	Shenzhen Saibao

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

3.4. EUT set-ups

EUT set-up No.	Combination of EUT and AE	Remarks
Set.1	EUT1+ AE1-1+AE2+AE3-1	Charging mode
Set.2	EUT2+ AE1-2+AE2+AE3-2	Charging mode
Set.3	EUT1+AE1-1+AE3-1	USB mode
Set.4	EUT2+AE1-2+AE3-2	USB mode

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	10-1-2018 Edition
ANSI C63.4	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2014

5. LABORATORY ENVIRONMENT

Semi-anechoic chamber did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 35℃
Relative humidity	Min. = 15 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz,>60dB; 1MHz-18000MHz,>90dB
Electrical insulation	>2MΩ
Ground system resistance	<4Ω
Normalised site attenuation (NSA)	<±4 dB, 3 m distance, from 30 to 1000 MHz

Shield room did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. =20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz,>60dB; 1MHz-10000MHz,>90dB
Electrical insulation	>2MΩ
Ground system resistance	<4Ω

Fully-anechoic chamber did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 35℃
Relative humidity	Min. = 15 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz,>60dB; 1MHz-18000MHz,>90dB
Electrical insulation	>2MΩ
Ground system resistance	<4Ω
VoltageStandingWaveRatio（VSWR）	≤ 6 dB, from 1 to 18GHz，3 m distance
Uniformity of field strength	Between 0 and 6 dB, from 80 to 6000 MHz

6. SUMMARY OF TEST RESULTS

Abbreviations used in this clause:	
P	Pass
NA	Not applicable
F	Fail

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Radiated Emission	15.109(a)	A.1	P
2	Conducted Emission	15.107(a)	A.2	P

7. Test Facilities Utilized

NO.	NAME	TYPE	SERIES NUMBER	PRODUCER	CALDUE DATE	CAL PERIOD
1.	Test Receiver	ESR7	101676	R&S	2019.11.28	1 year
2.	TestReceiver	ESCI	100702	R&S	2019.06.20	1 year
3.	Spectrum Analyzer	FSV40	101192	R&S	2019.05.21	1 year
4.	BiLog Antenna	3142E	00224831	ETS-lindgren	2021.05.17	3 years
5.	LISN	ENV216	102067	R&S	2019.07.18	1 year
6.	Horn Antenna	3117	00066577	ETS-lindgren	2022.04.02	3 years
7.	Universal Radio Communication Tester	CMU200	114545	R&S	2019.05.17	1 year
8.	PC	ThinkPad E480	PF-0Z56NV	Lenovo	/	/
9.	Printer	P1008	VNF6C12491	HP	/	/
10.	Mouse	MOEUUOA	44NY517	Lenovo	/	/
11.	Chamber	FACT3-2.0	1285	ETS-Lindgren	2020.07.20	3 years

ANNEX A: MEASUREMENT RESULTS

A.1 Radiated Emission (§15.109(a))

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 a distance 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 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:

Camera mode: The EUT is keeping on taking photos.

Charging mode: The MS is synchronized to SS, and able to respond to paging messages and incoming call. An established call has been released.The MS is connected to a charger.

USB mode: The model of the PC is Lenovo ThinkPad E480, and the serial number of the PC is PF-0Z56NV. The software is used to let the PC keep on copying data to MS, reading and erasing the data after copy action was finished.

USB mode/TF Card: The model of the PC is Lenovo ThinkPad E480, and the serial number of the PC is PF-0Z56NV. The software is used to let the PC keep on copying data to TF card, reading and erasing the data after copy action was finished.

A.1.3 Measurement Limit

Limit from CFR Part 15.109(a)

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

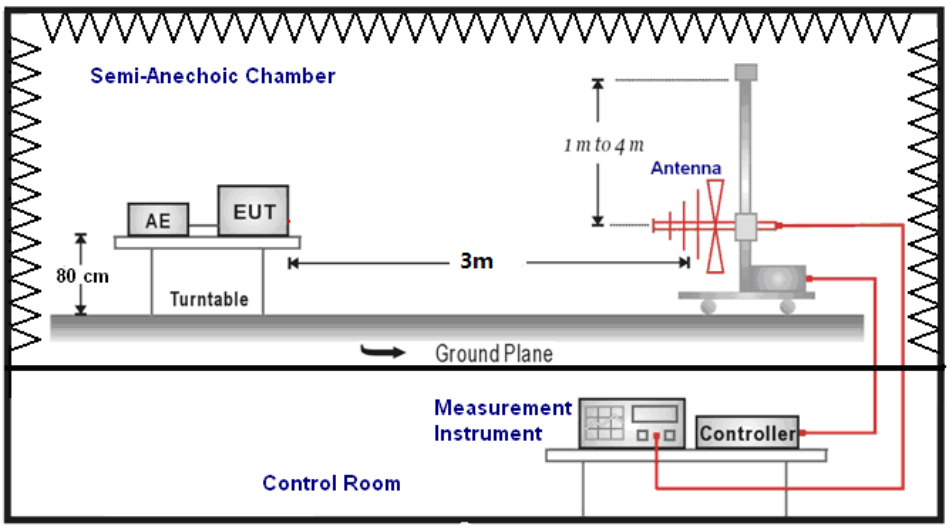
*Note: The original limit is defined at 10m test distance. This limit is calculated according to CISPR requirements.

A.1.4 Test Condition

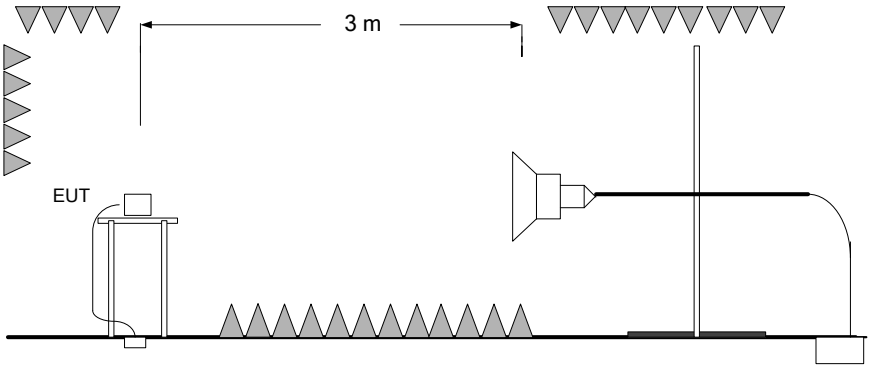
Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	120kHz (IF bandwidth)	5
Above 1000	1MHz/3MHz	15

A.1.5 Test set-up:

30MHz-1GHz



1GHz-18GHz



A.1.6 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}:PathLoss

P_{Mea}: Measurement result on receiver.

Note: the result contains vertical part and Horizontal part

RE Measurement uncertainty:30M-1GHz: 5.12dB (k=2);
1GHz-18GHz: 5.05 dB (k=2)

Set.1 Camera mode / Charging mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBμV)
7694.00	42.94	74.00	31.06	V	3.10	39.84
9216.50	44.68	74.00	29.32	V	5.00	39.68
10864.00	45.87	74.00	28.13	H	7.20	38.67
12539.00	46.21	74.00	27.79	V	9.70	36.51
14403.00	48.22	74.00	25.78	V	12.60	35.62
16830.00	50.22	74.00	23.78	H	16.20	34.02

Set.1 Camera mode / Charging mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBμV)
7694.00	30.05	54.00	23.95	V	3.10	26.95
9216.50	30.92	54.00	23.08	V	5.00	25.92
10864.00	32.73	54.00	21.27	H	7.20	25.53
12539.00	34.05	54.00	19.95	V	9.70	24.35
14403.00	35.66	54.00	18.34	V	12.60	23.06
16830.00	37.73	54.00	16.27	H	16.20	21.53

Set.1 IDEL mode /Charging mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBμV)
8185.00	43.41	74.00	30.59	H	4.10	39.31
9382.50	44.35	74.00	29.65	H	5.10	39.25
10684.00	44.58	74.00	29.42	V	7.00	37.58
12661.00	46.39	74.00	27.61	V	9.70	36.69
14403.00	47.43	74.00	26.57	H	12.60	34.83
16452.50	49.30	74.00	24.70	V	15.50	33.80

Set.1 IDEL mode /Charging mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBμV)
8185.00	30.00	54.00	24.00	H	4.10	25.90
9382.50	31.01	54.00	22.99	H	5.10	25.91
10684.00	32.27	54.00	21.73	V	7.00	25.27
12661.00	33.67	54.00	20.33	V	9.70	23.97
14403.00	35.22	54.00	18.78	H	12.60	22.62
16452.50	36.78	54.00	17.22	V	15.50	21.28

Set.2 Camera mode / Charging mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBμV)
8074.50	43.19	74.00	30.81	H	3.90	39.29
9460.50	43.65	74.00	30.35	V	5.20	38.45
10886.00	45.42	74.00	28.58	V	7.40	38.02
12554.50	46.50	74.00	27.50	V	9.70	36.80
14383.50	48.14	74.00	25.86	H	12.70	35.44
16899.00	50.41	74.00	23.59	H	16.20	34.21

Set.2 Camera mode / Charging mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBμV)
8074.50	30.35	54.00	23.65	H	3.90	26.45
9460.50	31.03	54.00	22.97	V	5.20	25.83
10886.00	32.60	54.00	21.40	V	7.40	25.20
12554.50	33.81	54.00	20.19	V	9.70	24.11
14383.50	35.29	54.00	18.71	H	12.70	22.59
16899.00	37.58	54.00	16.43	H	16.20	21.38

Set.2 IDEL mode /Charging mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBµV)
8582.00	43.03	74.00	30.97	V	4.60	38.43
10091.50	44.18	74.00	29.82	V	6.80	37.38
11533.00	45.13	74.00	28.87	V	8.00	37.13
12978.00	46.63	74.00	27.37	V	10.10	36.53
15551.00	48.34	74.00	25.66	V	14.00	34.34
17556.50	50.80	74.00	23.20	H	16.70	34.10

Set.2 IDEL mode /Charging mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBµV)
8582.00	30.53	54.00	23.47	V	4.60	25.93
10091.50	31.77	54.00	22.23	V	6.80	24.97
11533.00	32.77	54.00	21.23	V	8.00	24.77
12978.00	33.80	54.00	20.20	V	10.10	23.70
15551.00	36.06	54.00	17.94	V	14.00	22.06
17556.50	37.86	54.00	16.14	H	16.70	21.16

Set.3 USB mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBµV)
7932.50	42.66	74.00	31.34	V	3.50	39.16
9373.00	44.66	74.00	29.34	V	5.10	39.56
11009.50	45.49	74.00	28.51	H	7.30	38.19
12540.00	46.43	74.00	27.57	V	9.70	36.73
14475.50	48.06	74.00	25.94	V	12.60	35.46
16734.50	50.11	74.00	23.89	H	16.10	34.01

Set.3 USB mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBµV)
7932.50	29.65	54.00	24.35	V	3.50	26.15
9373.00	30.89	54.00	23.11	V	5.10	25.79
11009.50	32.41	54.00	21.59	H	7.30	25.11
12540.00	33.67	54.00	20.33	V	9.70	23.97
14475.50	35.48	54.00	18.52	V	12.60	22.88
16734.50	37.53	54.00	16.47	H	16.10	21.43

Set.3 USB mode /TF Card/ Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBμV)
9710.00	44.59	74.00	29.41	V	5.90	38.69
11119.50	45.74	74.00	28.26	H	7.30	38.44
12286.00	47.13	74.00	26.87	V	9.40	37.73
14012.00	47.41	74.00	26.59	V	11.50	35.91
15426.50	48.47	74.00	25.53	V	13.80	34.67
17202.00	50.42	74.00	23.58	V	16.30	34.12

Set.3 USB mode /TF Card/Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBμV)
9710.00	31.83	54.00	22.17	V	5.90	25.93
11119.50	32.93	54.00	21.07	H	7.30	25.63
12286.00	34.36	54.00	19.64	V	9.40	24.96
14012.00	34.92	54.00	19.08	V	11.50	23.42
15426.50	36.00	54.00	18.00	V	13.80	22.20
17202.00	37.64	54.00	16.36	V	16.30	21.34

Set.4 USB mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBμV)
8663.00	43.70	74.00	30.30	H	5.10	38.60
10050.50	43.86	74.00	30.14	H	6.60	37.26
11309.00	44.51	74.00	29.49	V	7.40	37.11
12976.00	47.41	74.00	26.59	V	10.00	37.41
14840.50	48.51	74.00	25.49	H	12.50	36.01
17004.50	50.01	74.00	23.99	H	16.40	33.61

Set.4 USB mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBμV)
8663.00	30.82	54.00	23.18	H	5.10	25.72
10050.50	31.45	54.00	22.55	H	6.60	24.85
11309.00	32.26	54.00	21.74	V	7.40	24.86
12976.00	34.00	54.00	20.00	V	10.00	24.00
14840.50	34.95	54.00	19.05	H	12.50	22.45
17004.50	37.81	54.00	16.19	H	16.40	21.41

Set.4 USB mode /TF Card/ Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBμV)
8064.50	43.05	74.00	30.95	H	3.80	39.25
9307.00	43.99	74.00	30.01	H	5.20	38.79
11194.00	45.06	74.00	28.94	V	7.40	37.66
12083.00	46.39	74.00	27.61	V	9.40	36.99
15253.50	48.47	74.00	25.53	V	13.40	35.07
17093.50	50.30	74.00	23.70	H	16.00	34.30

Set.4 USB mode /TF Card/Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBμV)
8064.50	30.09	54.00	23.91	H	3.80	26.29
9307.00	31.02	54.00	22.98	H	5.20	25.82
11194.00	32.63	54.00	21.38	V	7.40	25.23
12083.00	33.89	54.00	20.11	V	9.40	24.49
15253.50	36.09	54.00	17.91	V	13.40	22.69
17093.50	37.45	54.00	16.55	H	16.00	21.45

Camera mode / Charging mode: Set 1

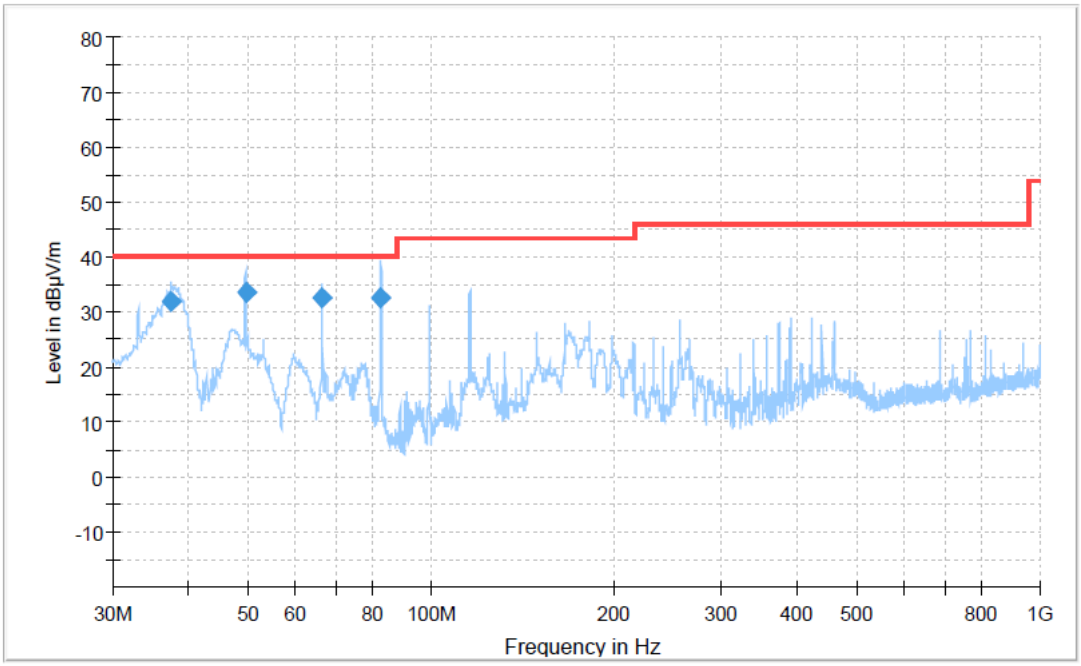


Figure A.1 Radiated Emission from 30MHz to 1GHz

Final_Result_QPK

Frequency(MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBµV)
37.51	31.83	40.00	8.17	V	-27.70	59.53
49.66	33.48	40.00	6.52	V	-35.80	69.28
66.22	32.74	40.00	7.26	V	-35.20	67.94
82.72	32.52	40.00	7.48	V	-33.10	65.62

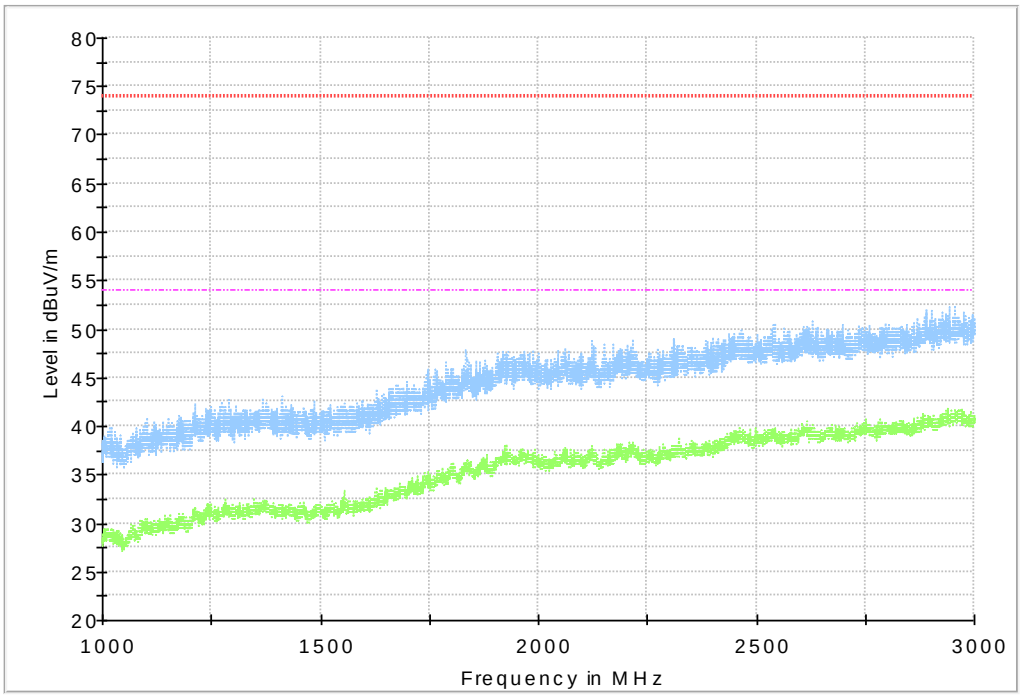


Figure A.2 Radiated Emission from 1GHz to 3GHz

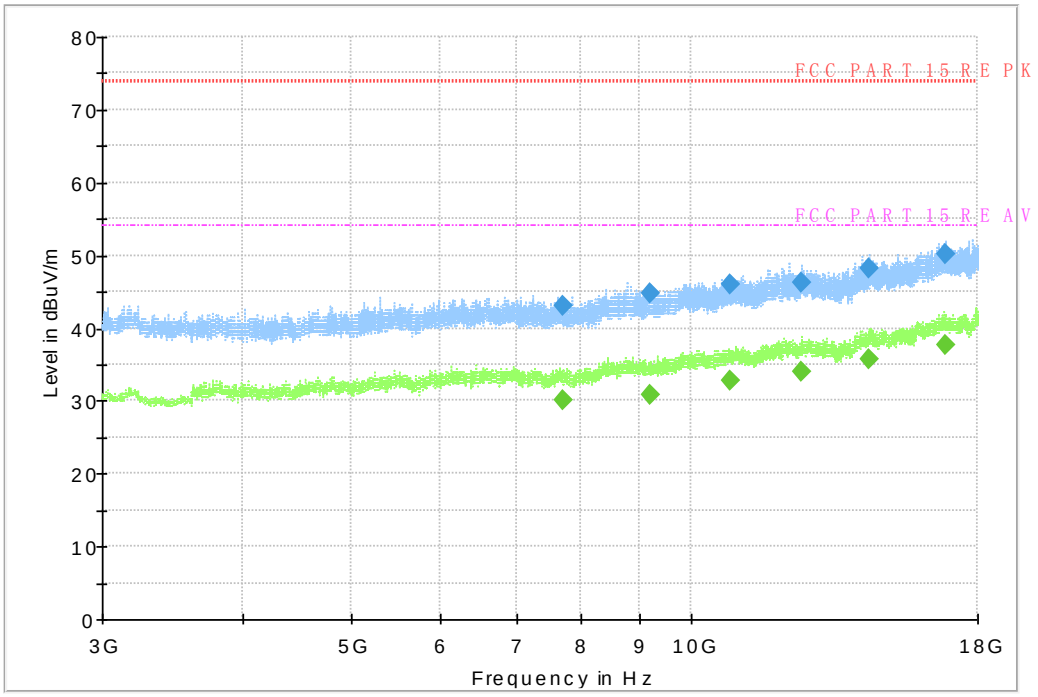


Figure A.3 Radiated Emission from 3GHz to 18GHz

IDEL mode / Charging mode: Set 1

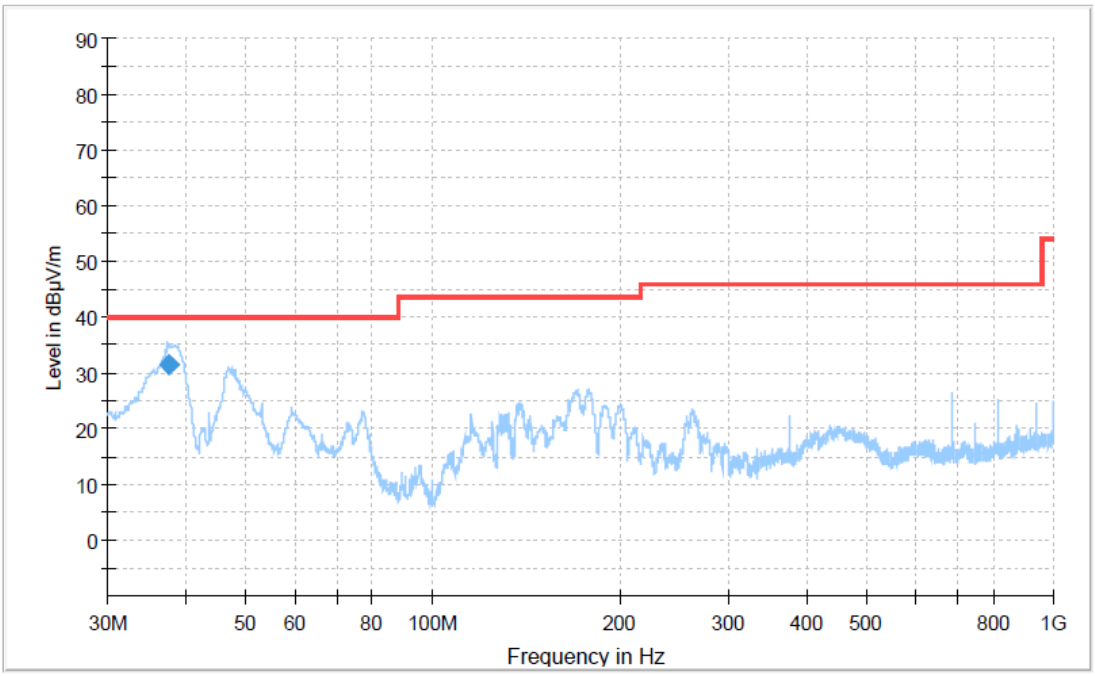


Figure A.4 Radiated Emission from 30MHz to 1GHz

Final_Result_QPK

Frequency(MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBµV)
37.51	31.52	40.00	8.48	V	-27.70	59.22

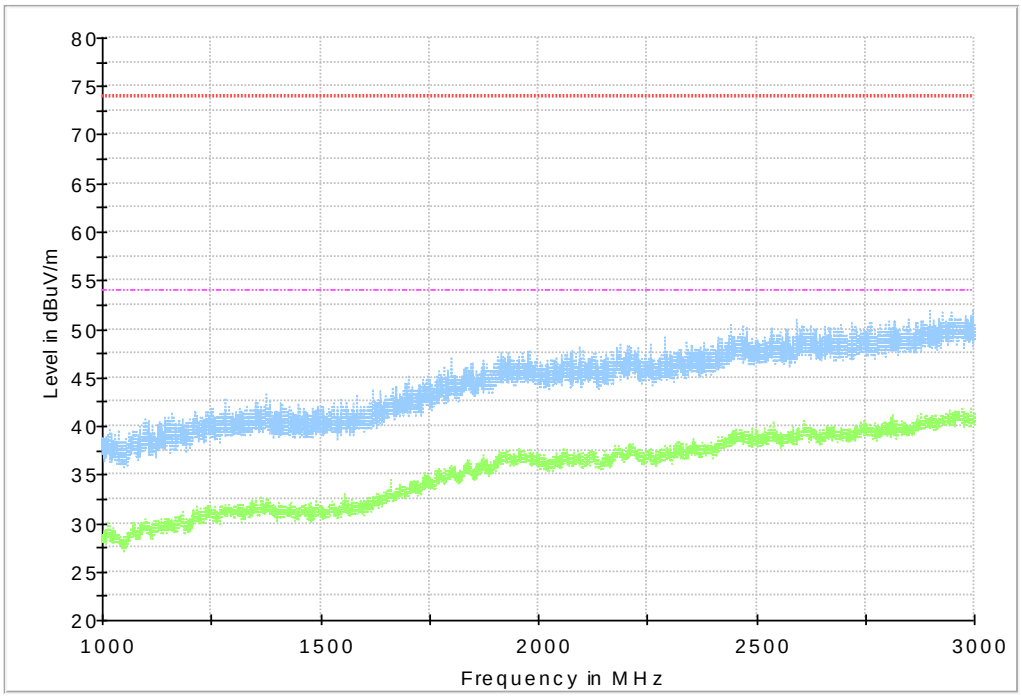


Figure A.5 Radiated Emission from 1GHz to 3GHz

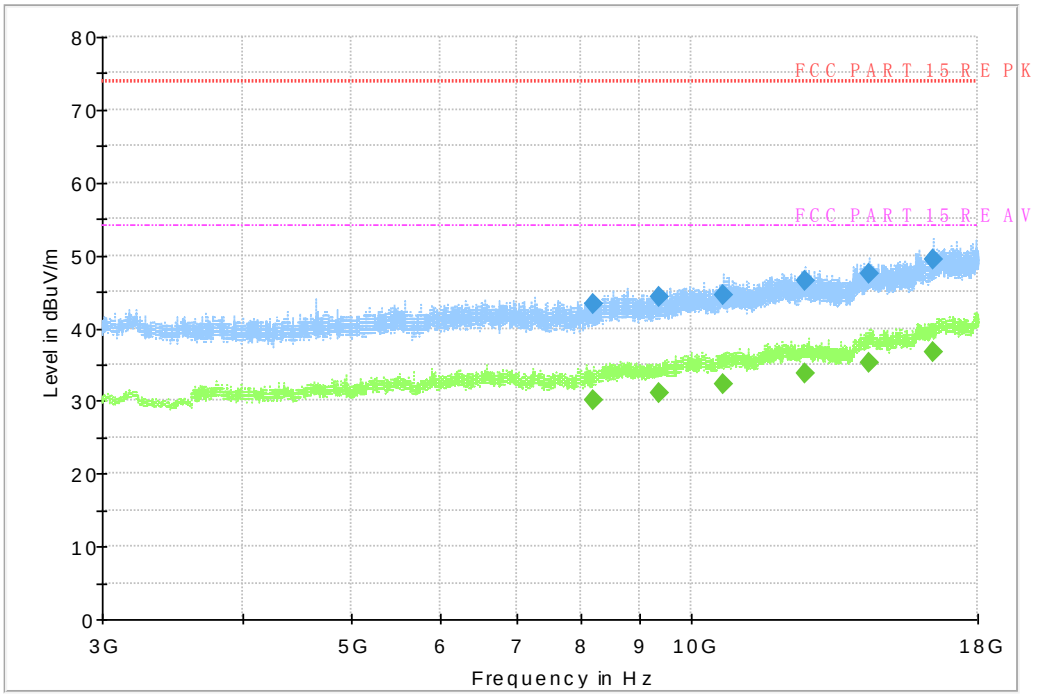


Figure A.6 Radiated Emission from 3GHz to 18GHz

Camera mode / Charging mode: Set 2

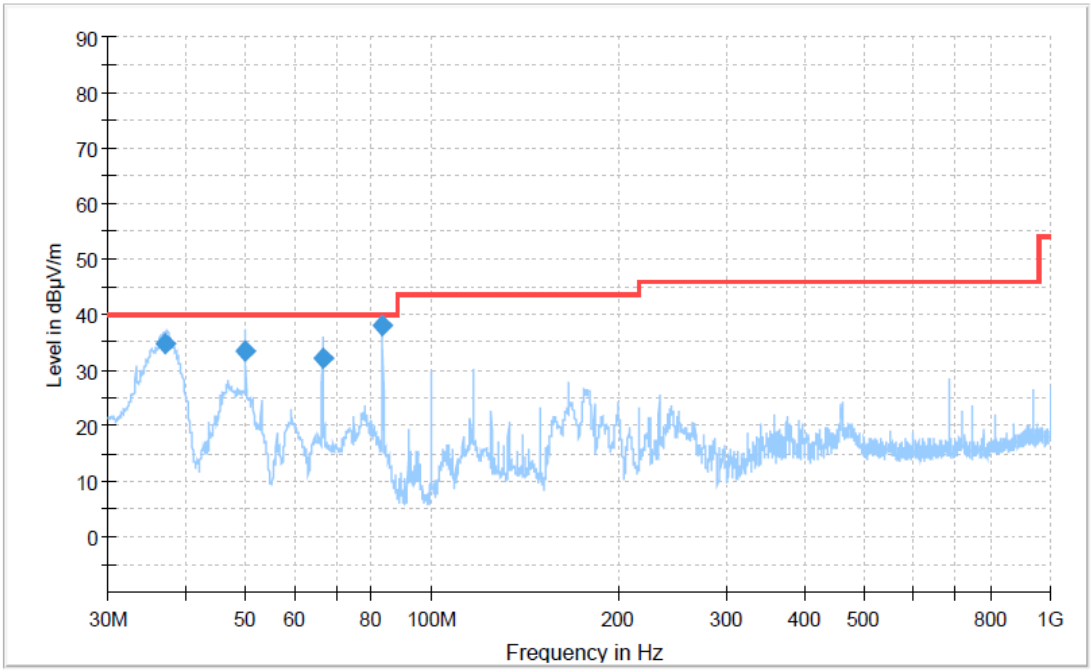


Figure A.7 Radiated Emission from 30MHz to 1GHz

Final_Result_QPK

Frequency(MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBµV)
37.13	34.77	40.00	5.23	V	-27.60	62.37
50.01	33.37	40.00	6.63	V	-36.00	69.37
66.70	32.09	40.00	7.91	V	-35.10	67.19
83.37	38.06	40.00	1.94	V	-33.00	71.06

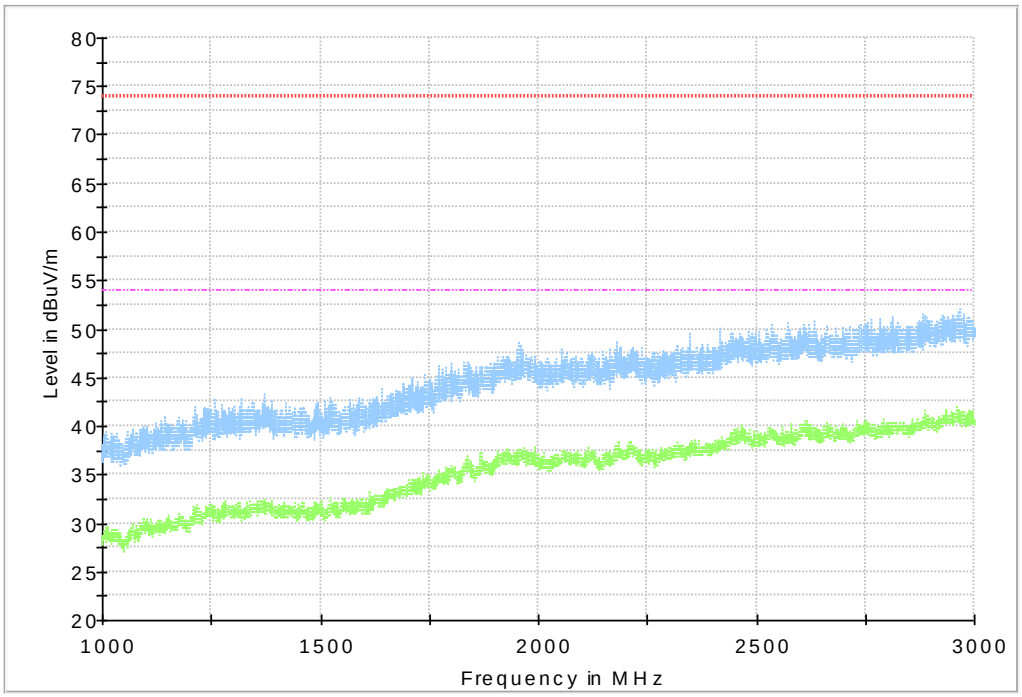


Figure A.8 Radiated Emission from 1GHz to 3GHz

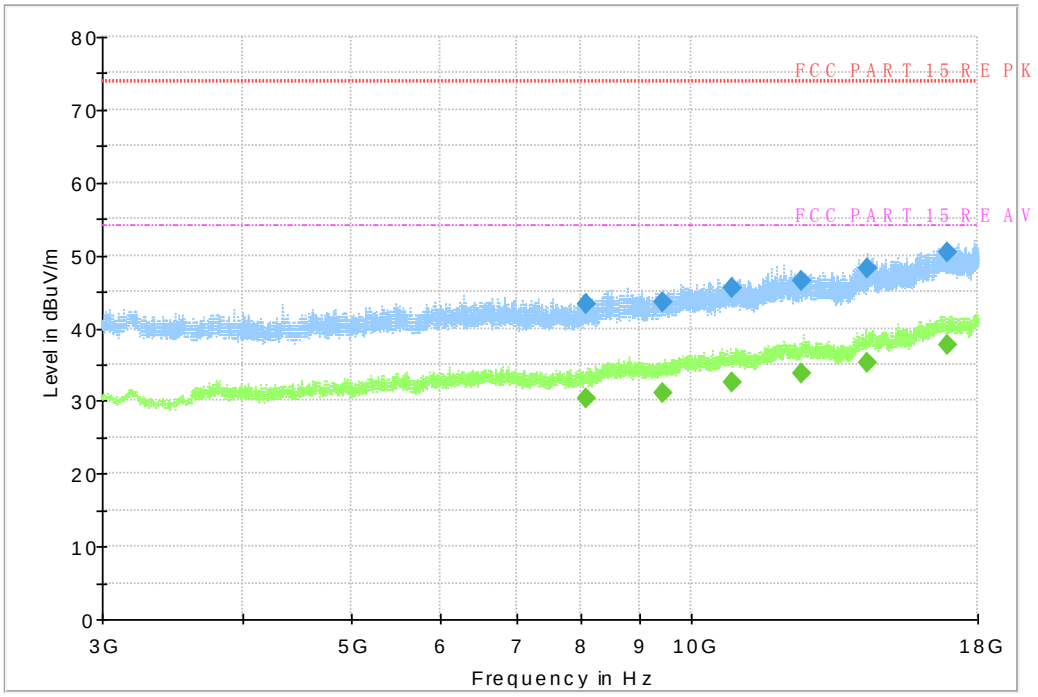


Figure A.9 Radiated Emission from 3GHz to 18GHz

IDEL mode / Charging mode: Set 2

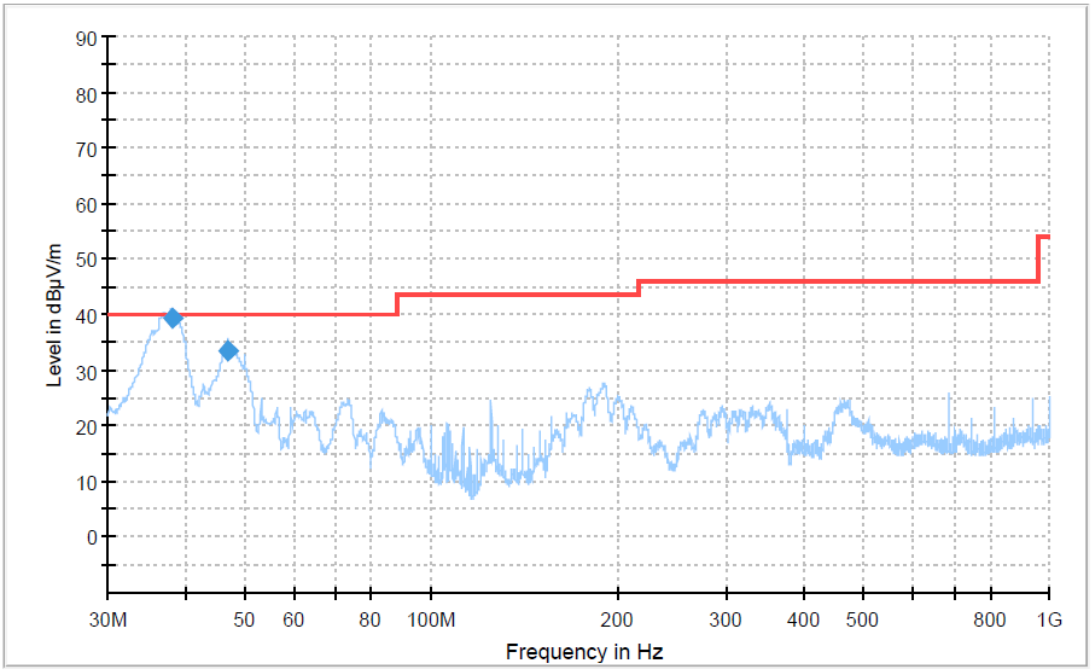


Figure A.10 Radiated Emission from 30MHz to 1GHz

Final_Result_QPK

Frequency(MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBµV)
38.09	39.38	40.00	0.62	V	-28.00	67.38
46.89	33.32	40.00	6.68	V	-33.70	67.02

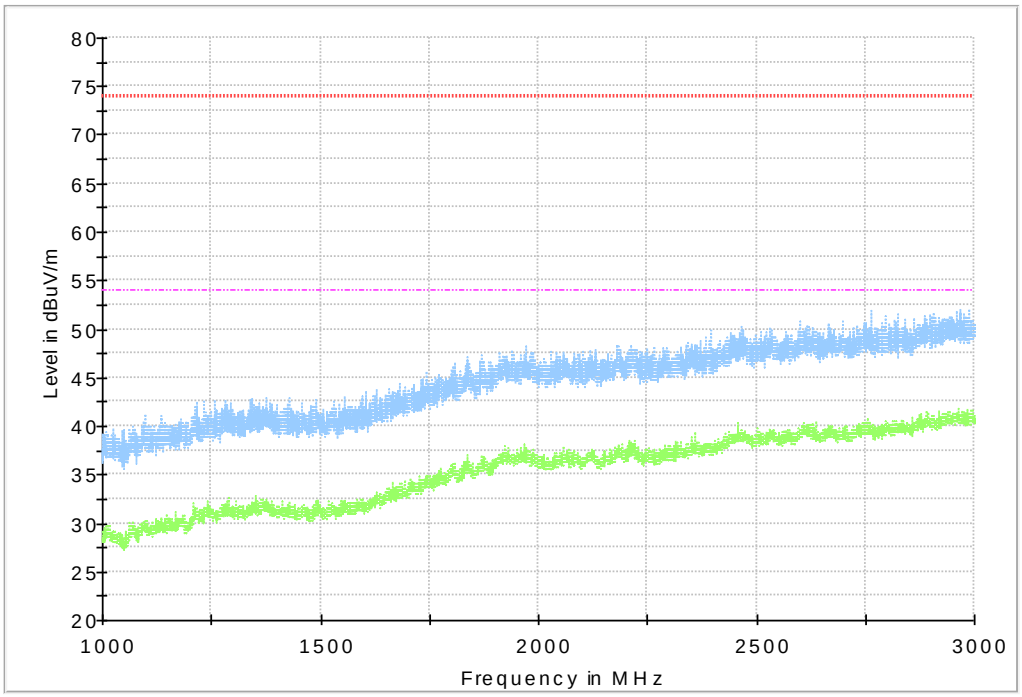


Figure A.11 Radiated Emission from 1GHz to 3GHz

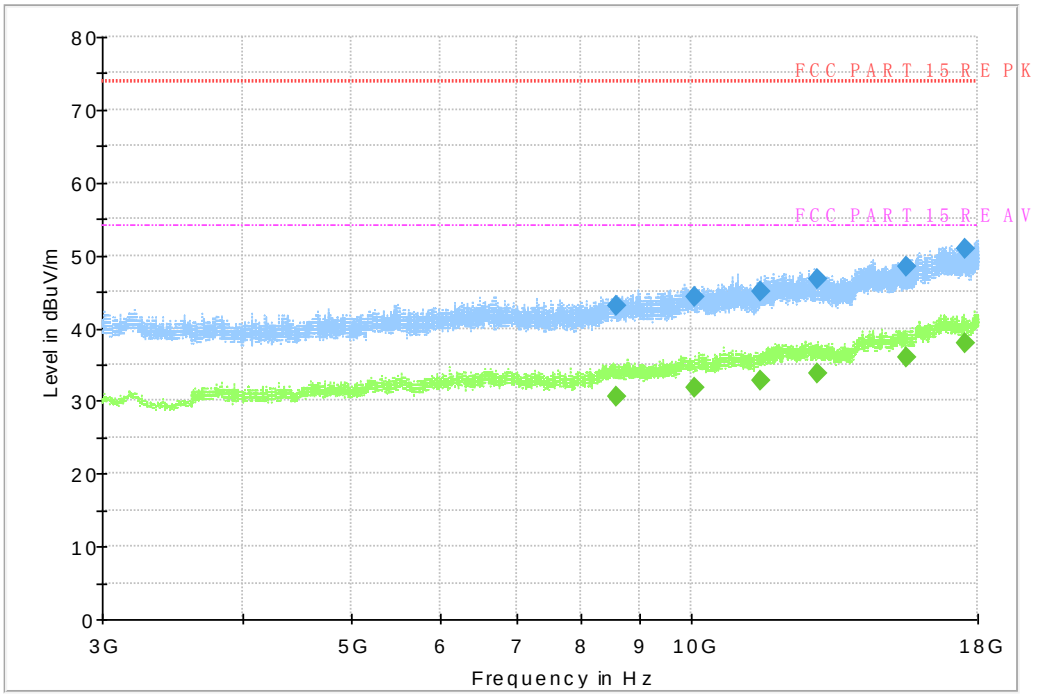


Figure A.12 Radiated Emission from 3GHz to 18GHz

USB mode: Set 3

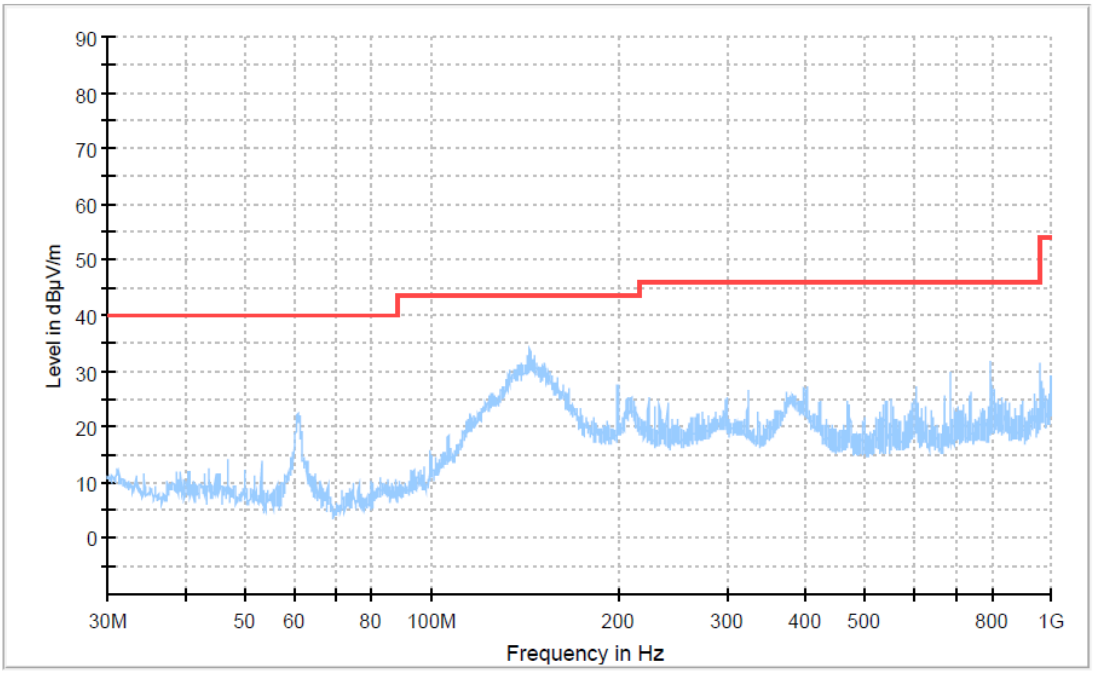


Figure A.13 Radiated Emission from 30MHz to 1GHz

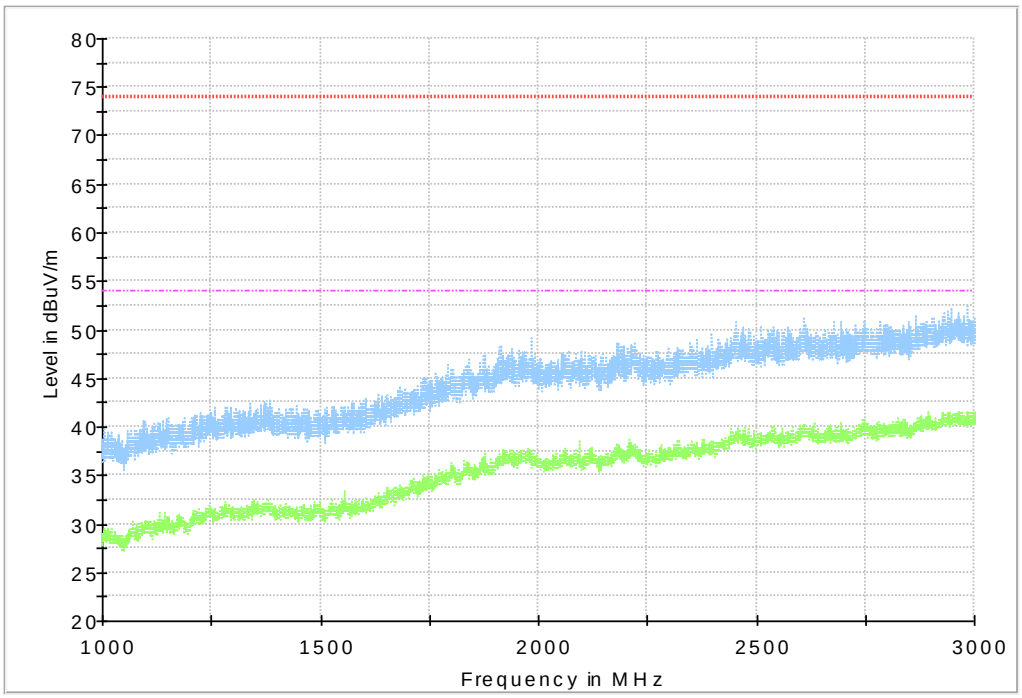


Figure A.14 Radiated Emission from 1GHz to 3GHz

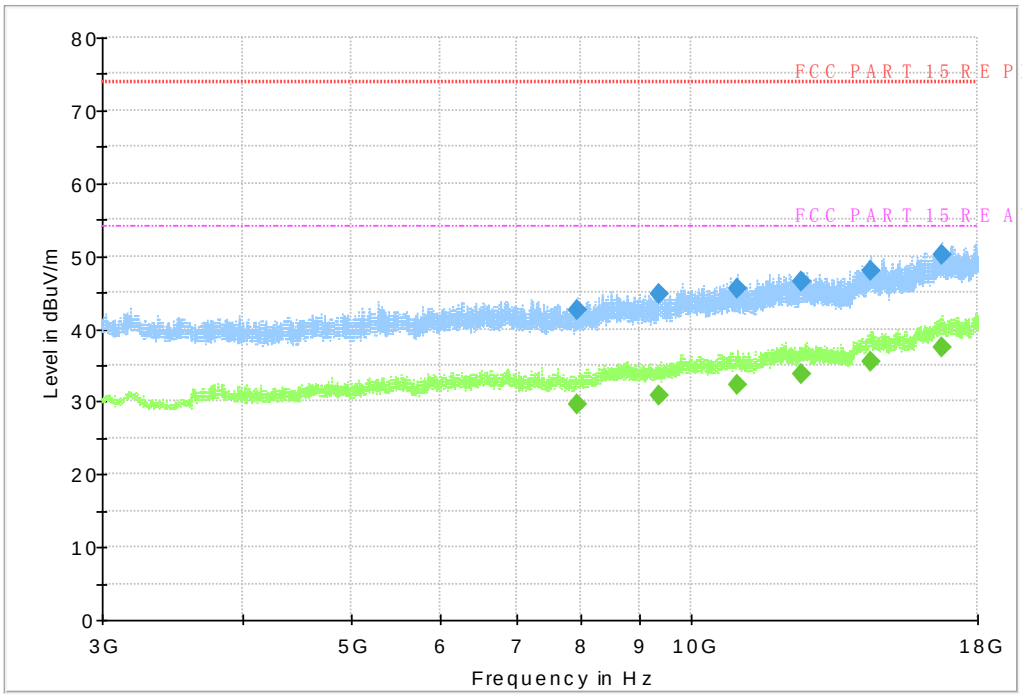


Figure A.15 Radiated Emission from 3GHz to 18GHz

USB mode/TF Card Mode: Set 3

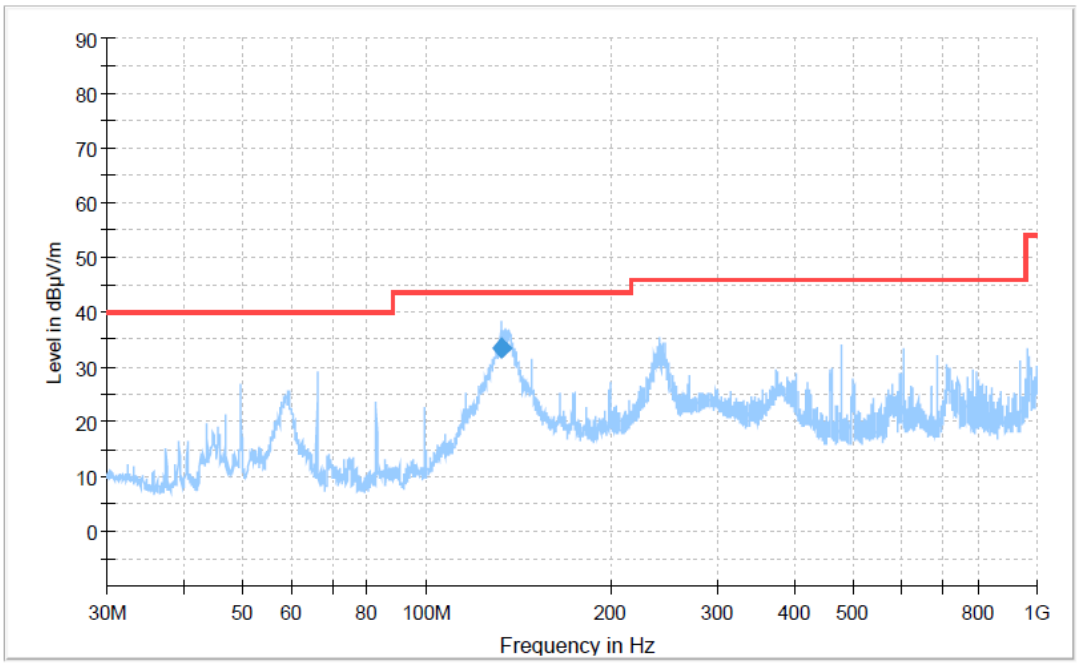


Figure A.16 Radiated Emission from 30MHz to 1GHz

Final_Result_QPK

Frequency(MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBµV)
132.45	33.53	43.50	9.97	H	-32.40	65.93

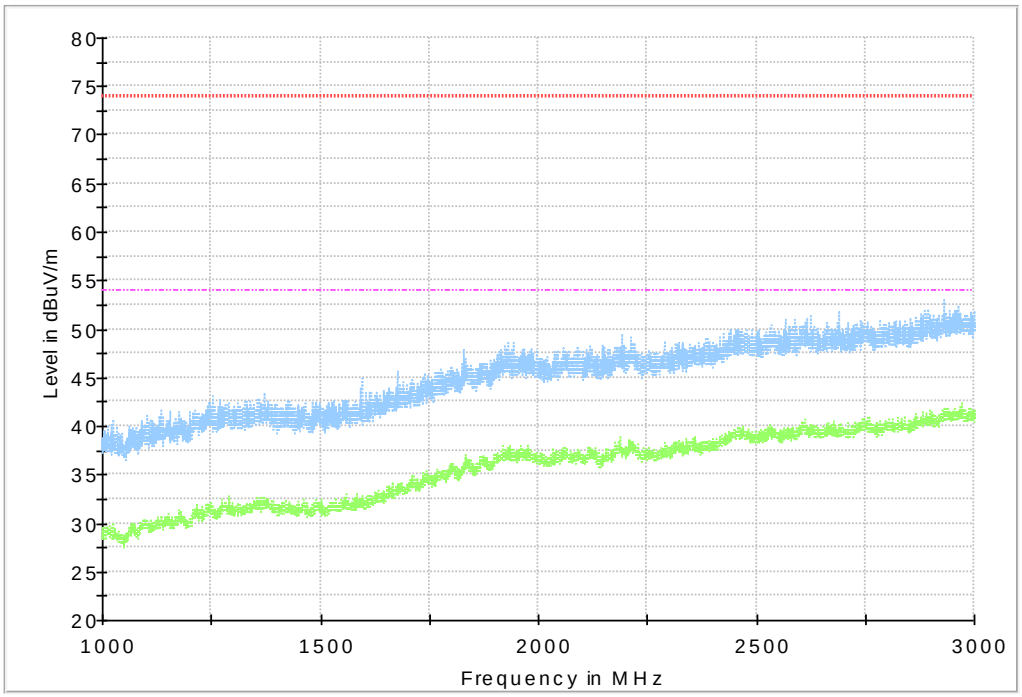


Figure A.17 Radiated Emission from 1GHz to 3GHz

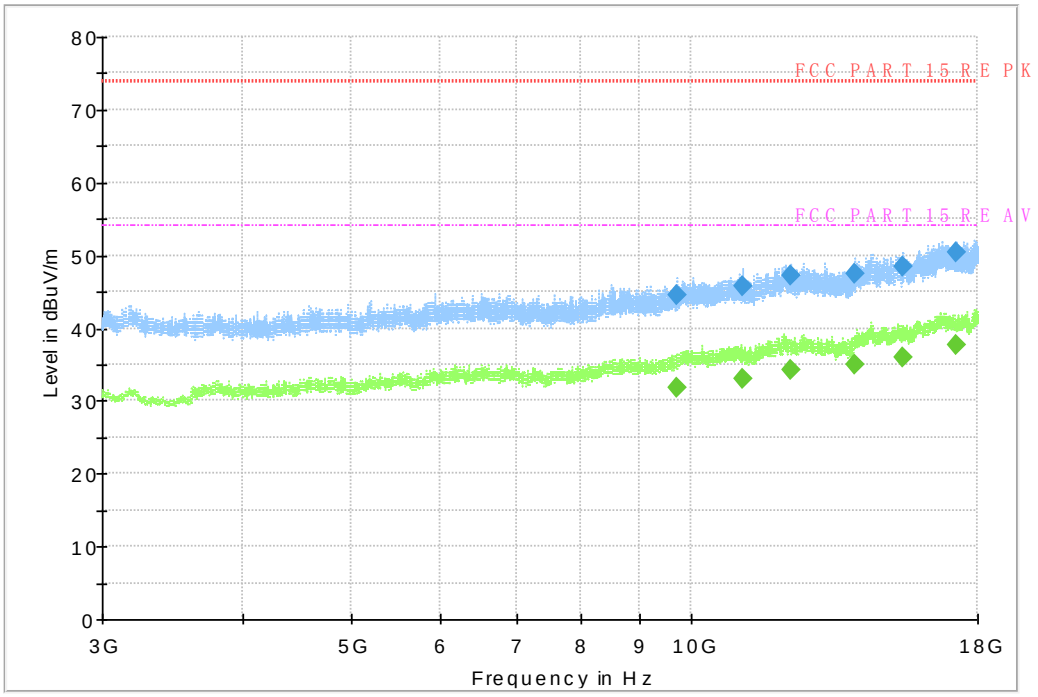


Figure A.18 Radiated Emission from 3GHz to 18GHz

USB mode: Set 4

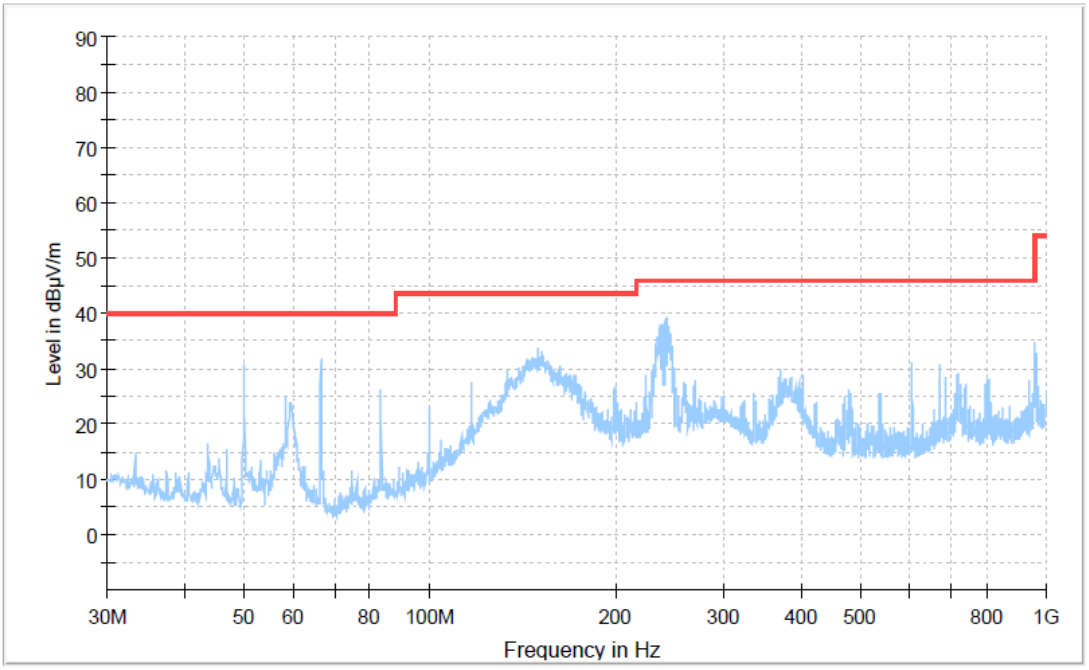


Figure A.19 Radiated Emission from 30MHz to 1GHz

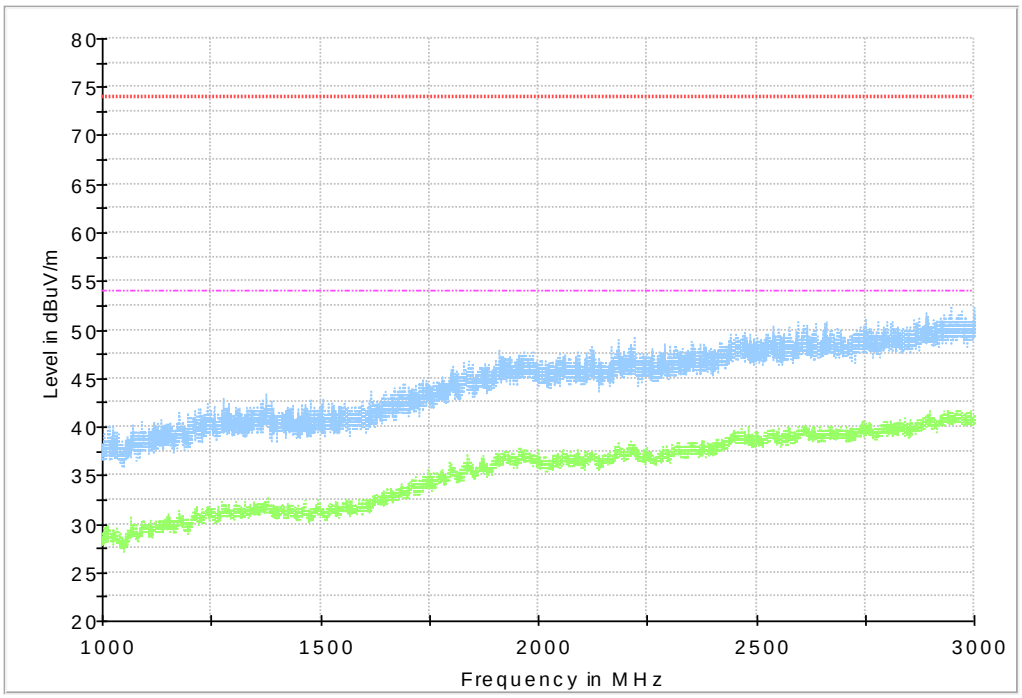


Figure A.20 Radiated Emission from 1GHz to 3GHz

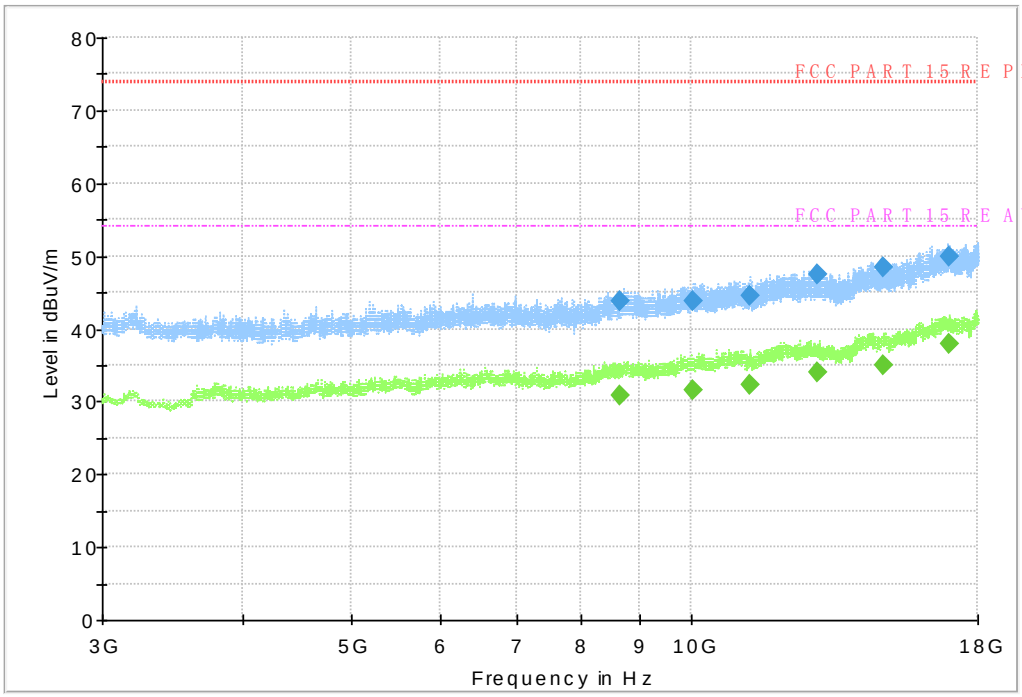


Figure A.21 Radiated Emission from 3GHz to 18GHz

USB mode/TF Card Mode: Set 4

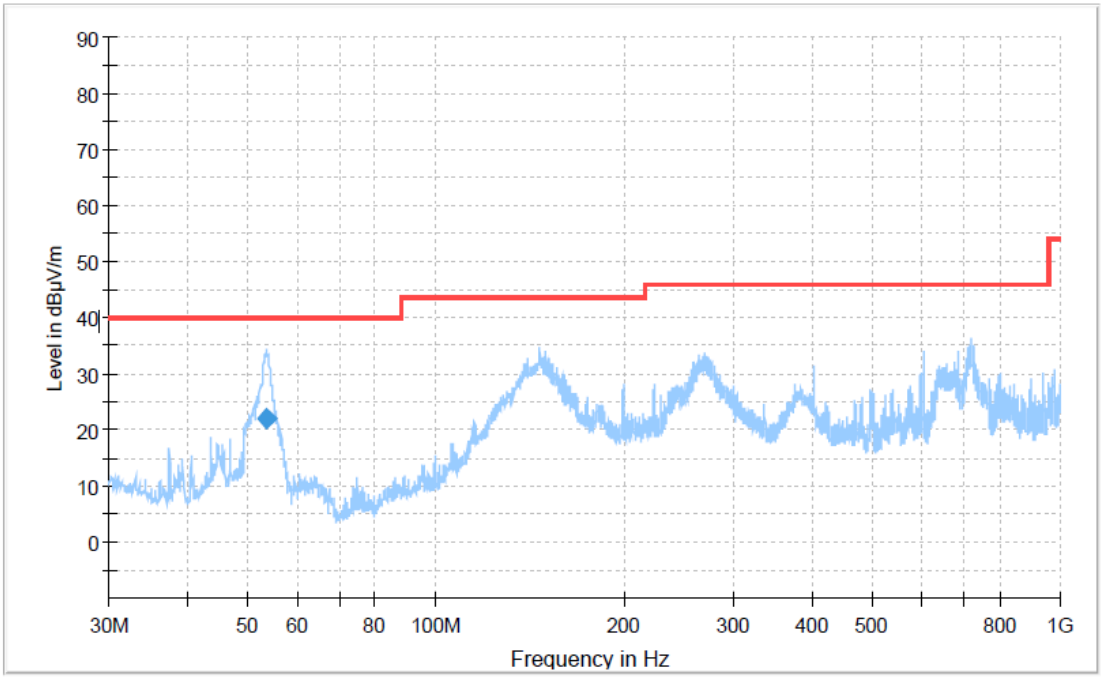


Figure A.22 Radiated Emission from 30MHz to 1GHz

Final_Result_QPK

Frequency(MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P_{Mea} (dBµV)
53.80	22.15	40.00	17.85	V	-37.90	60.05

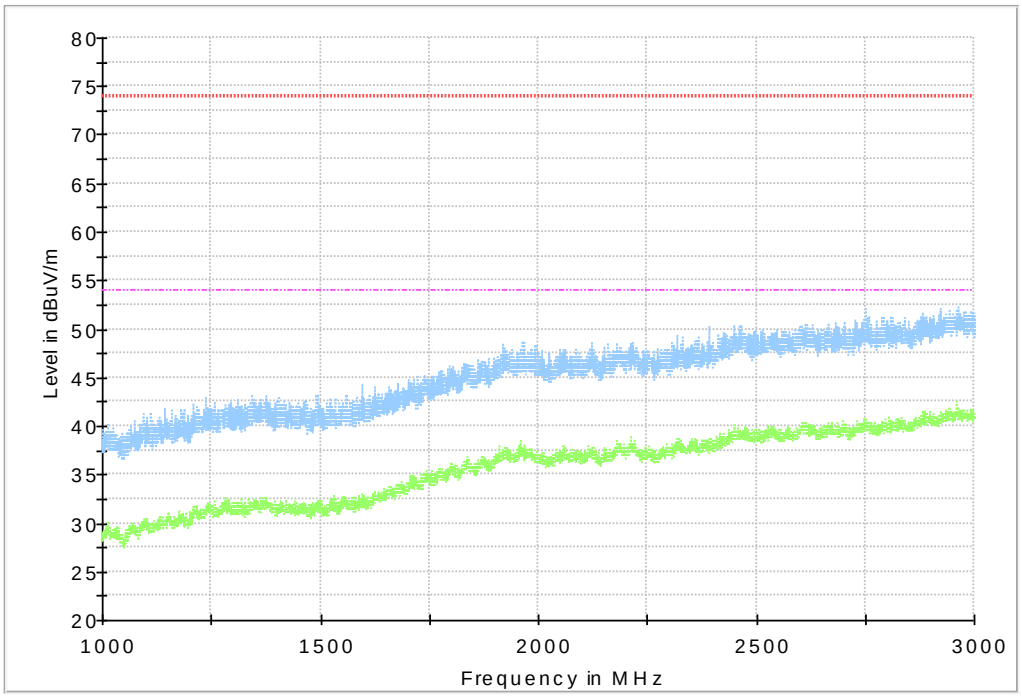


Figure A.23 Radiated Emission from 1GHz to 3GHz

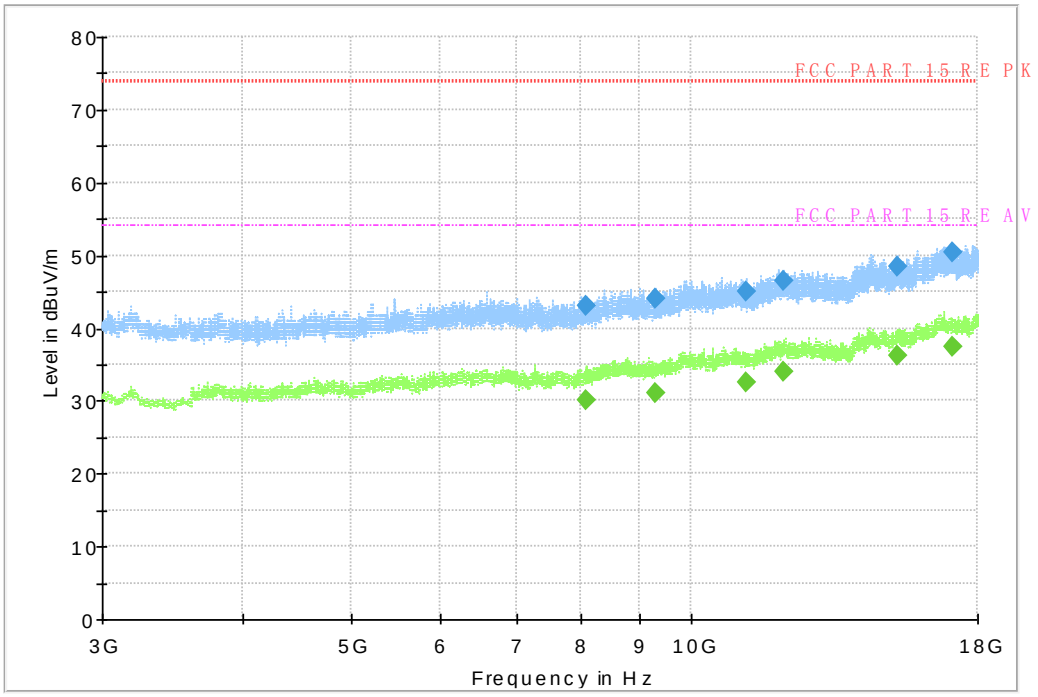


Figure A.24 Radiated Emission from 3GHz to 18GHz

B.2 Conducted Emission (§15.107(a))

Reference

FCC: CFR Part 15.107(a)

B.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 150kHz to 30MHz shall not exceed the limits. Tested in accordance with the procedures of ANSI C63.4 -2014, section 7.3.

B.2.2 EUT Operating Mode:

FM mode: The EUT is keeping on FM receicer.

Camera mode: The EUT is keeping on taking photos.

Charging mode: The MS is synchronized to SS, and able to respond to paging messages and incoming call. An established call has been released.The MS is connected to a charger.

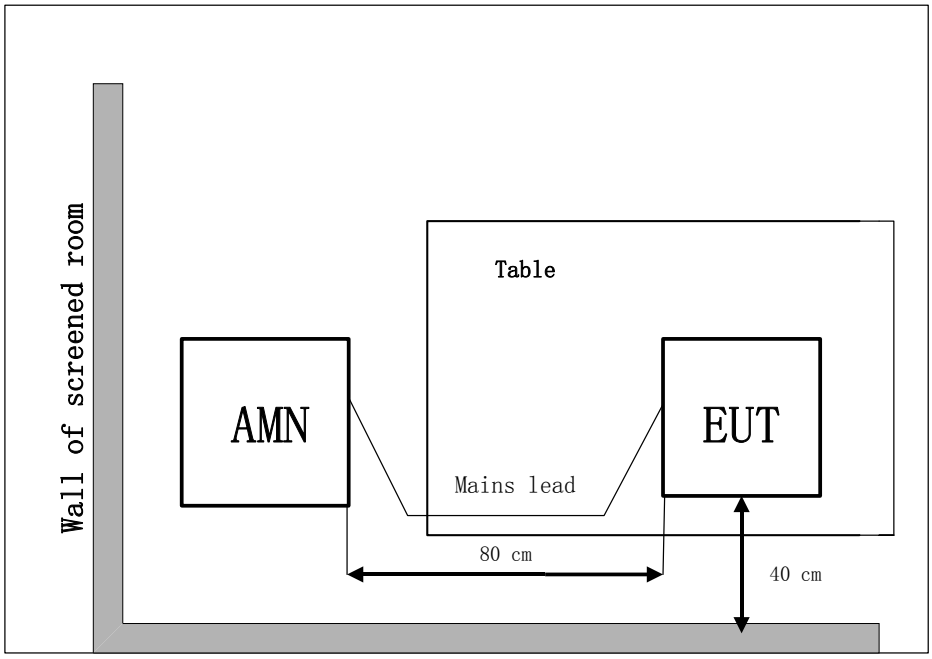
USB mode: The model of the PC is Lenovo ThinkPad E480, and the serial number of the PC is PF-0Z56NV. The software is used to let the PC keep on copying data to MS, reading and erasing the data after copy action was finished.

USB mode/TF Card: The model of the PC is Lenovo ThinkPad E480, and the serial number of the PC is PF-0Z56NV. The software is used to let the PC keep on copying data to TF card, reading and erasing the data after copy action was finished.

B.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		

B.2.4Test set-up:



B.2.5 Test Condition in charging mode

Voltage（V）	Frequency（Hz）
120	50
240	50

RBW	Sweep Time(s)
9kHz	1

CE Measurement uncertainty: 3.00 dB (k=2)

B.2.6 Measurement Results

QuasiPeak(dBµV) /Average(dBµV) =P_{Mea}+Corr

Where

Corr: PathLoss + Voltage Division Factor

P_{Mea}: Measurement result on receiver.

Camera mode / Charging mode: Set 1
Voltage: 120V

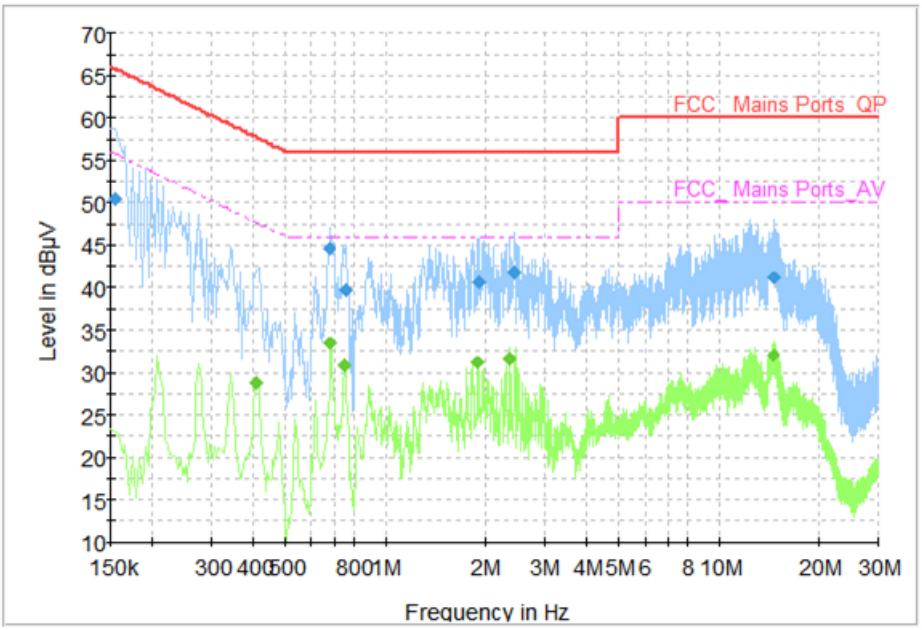


Figure B.1 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.154	50.43	65.78	15.35	L1	9.70	40.73
0.678	44.55	56.00	11.45	N	9.70	34.85
0.762	39.70	56.00	16.30	N	9.70	30.00
1.902	40.62	56.00	15.38	N	9.70	30.92
2.426	41.76	56.00	14.24	N	9.70	32.06
14.646	41.09	60.00	18.91	N	10.00	31.09

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.410	28.76	47.65	18.89	N	9.70	19.06
0.682	33.38	46.00	12.62	N	9.70	23.68
0.754	30.87	46.00	15.13	N	9.70	21.17
1.886	31.11	46.00	14.89	N	9.70	21.41
2.358	31.58	46.00	14.42	N	9.70	21.88
14.450	32.08	50.00	17.92	N	10.00	22.08

IDEL mode / Charging mode: Set 1
Voltage: 120V

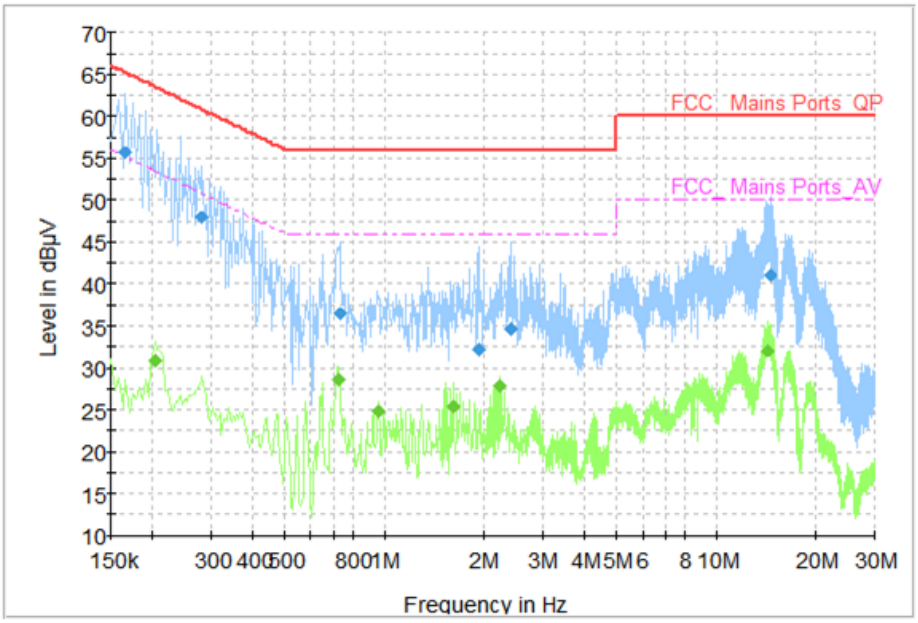


Figure B.2 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.166	55.65	65.16	9.51	L1	9.70	45.95
0.282	47.96	60.76	12.80	L1	9.70	38.26
0.730	36.45	56.00	19.55	N	9.70	26.75
1.926	32.26	56.00	23.74	L1	9.70	22.56
2.394	34.67	56.00	21.33	L1	9.70	24.97
14.446	41.02	60.00	18.98	N	10.00	31.02

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.202	30.80	53.53	22.73	L1	9.70	21.10
0.726	28.62	46.00	17.38	N	9.70	18.92
0.954	24.87	46.00	21.13	N	9.70	15.17
1.610	25.39	46.00	20.61	N	9.70	15.69
2.226	27.88	46.00	18.12	N	9.70	18.18
14.294	32.00	50.00	18.00	N	9.90	22.10

Camera mode / Charging mode: Set 2
Voltage: 120V

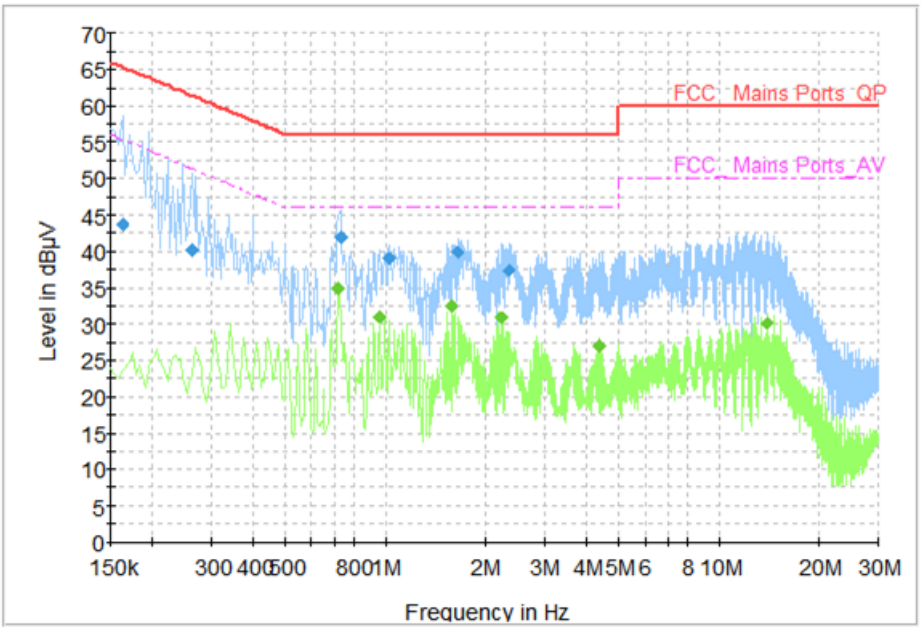


Figure B.3 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.162	43.71	65.36	21.66	L1	9.70	34.01
0.262	40.19	61.37	21.17	L1	9.70	30.49
0.730	41.89	56.00	14.11	N	9.70	32.19
1.022	38.92	56.00	17.08	N	9.70	29.22
1.638	39.84	56.00	16.16	N	9.70	30.14
2.334	37.38	56.00	18.62	N	9.70	27.68

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.722	34.88	46.00	11.12	N	9.70	25.18
0.954	31.09	46.00	14.91	N	9.70	21.39
1.570	32.46	46.00	13.54	N	9.70	22.76
2.222	30.92	46.00	15.08	N	9.70	21.22
4.370	27.04	46.00	18.96	N	9.70	17.34
13.914	30.18	50.00	19.82	N	9.90	20.28

IDEL mode / Charging mode: Set 2
Voltage: 120V

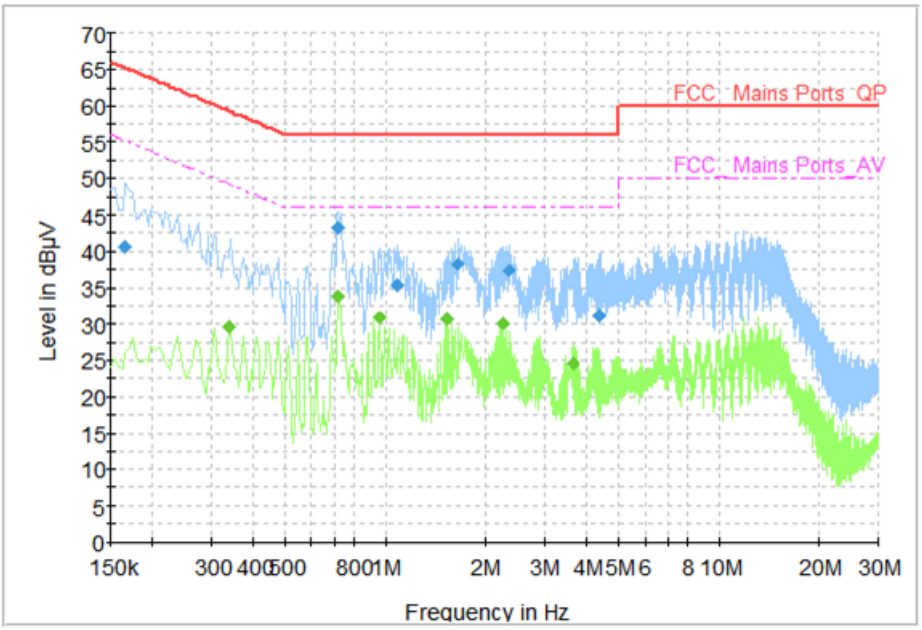


Figure B.4 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.166	40.58	65.16	24.58	L1	9.70	30.88
0.722	43.27	56.00	12.73	N	9.70	33.57
1.078	35.18	56.00	20.82	N	9.70	25.48
1.642	38.22	56.00	17.78	N	9.70	28.52
2.342	37.35	56.00	18.65	N	9.70	27.65
4.386	31.18	56.00	24.82	N	9.70	21.48

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.338	29.63	49.25	19.62	N	9.60	20.03
0.722	33.89	46.00	12.11	N	9.70	24.19
0.954	30.85	46.00	15.15	N	9.70	21.15
1.534	30.72	46.00	15.28	N	9.70	21.02
2.262	30.08	46.00	15.92	N	9.70	20.38
3.654	24.52	46.00	21.48	N	9.70	14.82

USB mode: Set 3
Voltage: 120V

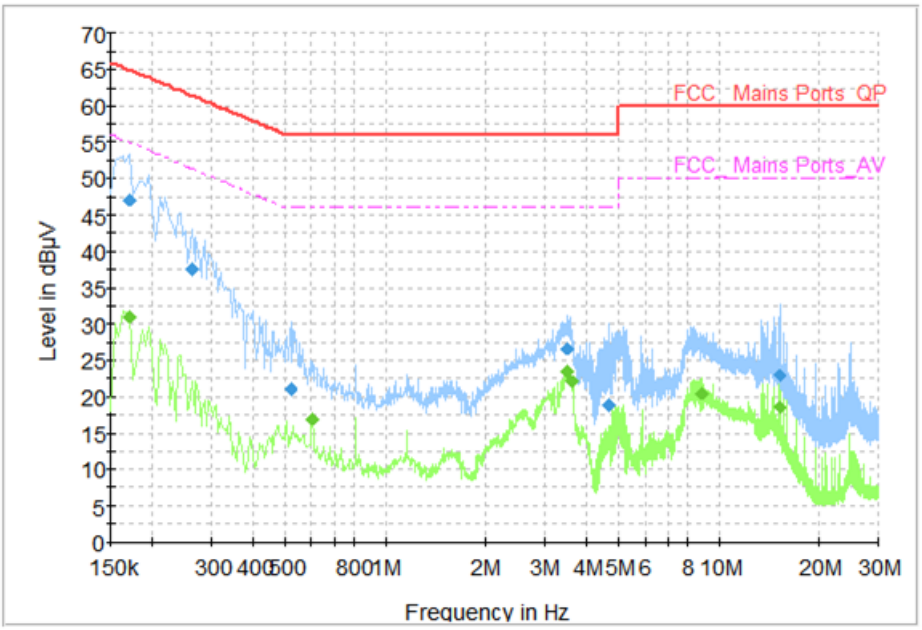


Figure B.5 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.170	47.04	64.96	17.92	L1	9.70	37.34
0.262	37.48	61.37	23.89	N	9.60	27.88
0.518	21.07	56.00	34.93	L1	9.70	11.37
3.518	26.71	56.00	29.29	L1	9.70	17.01
4.678	18.94	56.00	37.06	L1	9.80	9.14
15.110	22.86	60.00	37.14	N	10.00	12.86

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.170	30.98	54.96	23.98	L1	9.70	21.28
0.602	16.84	46.00	29.16	L1	9.70	7.14
3.510	23.53	46.00	22.47	L1	9.70	13.83
3.606	22.07	46.00	23.93	L1	9.70	12.37
8.798	20.43	50.00	29.57	N	9.80	10.63
15.098	18.52	50.00	31.48	N	10.00	8.52

USB mode: Set 4
Voltage: 120V

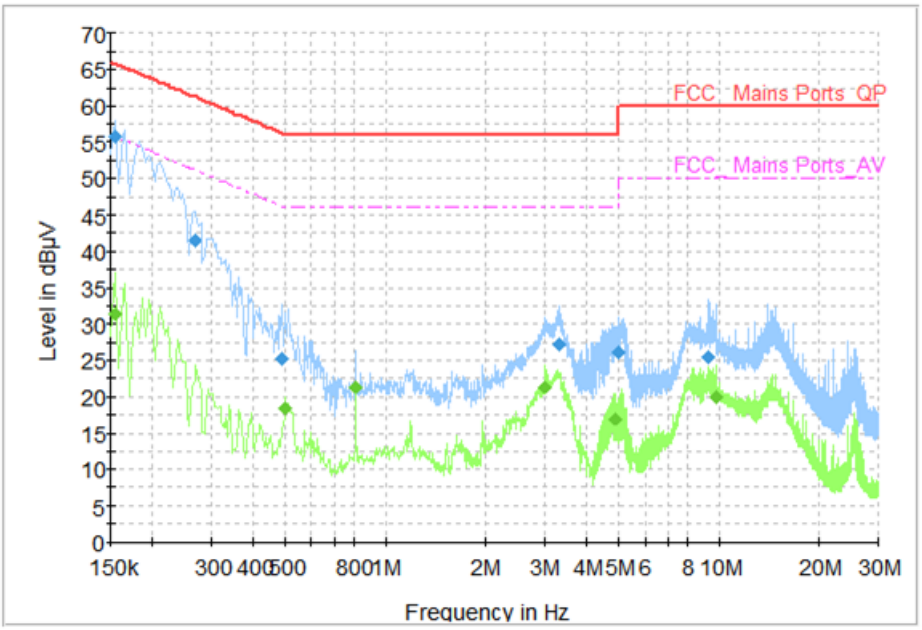


Figure B.6 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.154	55.69	65.78	10.10	N	9.60	46.09
0.266	41.36	61.24	19.88	N	9.60	31.76
0.486	25.24	56.24	30.99	L1	9.70	15.54
3.290	27.15	56.00	28.85	L1	9.70	17.45
4.994	26.04	56.00	29.96	N	9.70	16.34
9.246	25.37	60.00	34.63	N	9.80	15.57

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.154	31.43	55.78	24.35	N	9.60	21.83
0.502	18.26	46.00	27.74	L1	9.70	8.56
0.814	21.29	46.00	24.71	L1	9.70	11.59
3.002	21.33	46.00	24.67	L1	9.70	11.63
4.898	16.84	46.00	29.16	N	9.70	7.14
9.826	19.89	50.00	30.11	N	9.80	10.09

Camera mode / Charging mode: Set 1
Voltage: 240V

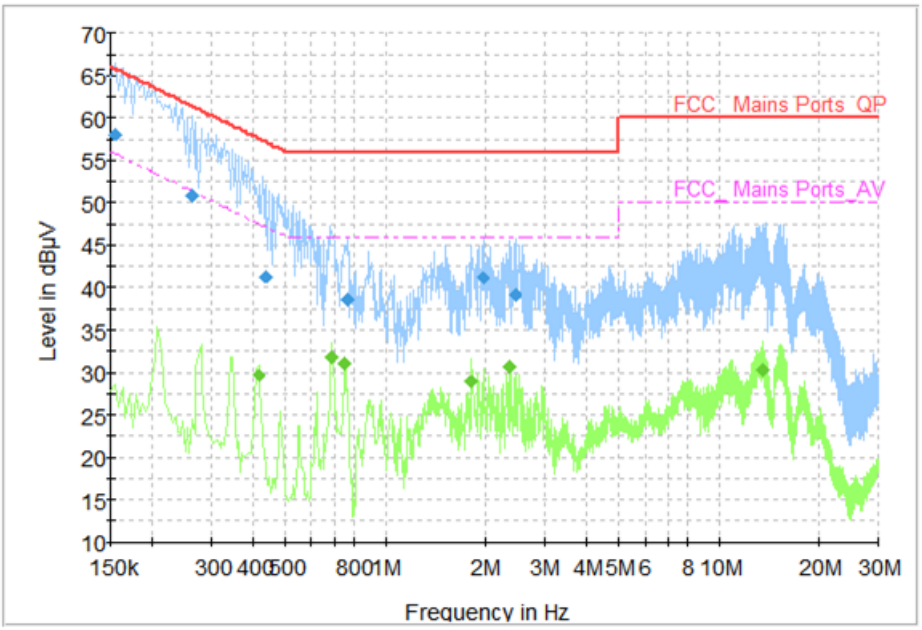


Figure B.7 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.154	58.08	65.78	7.70	L1	9.70	48.38
0.262	50.88	61.37	10.48	L1	9.70	41.18
0.438	41.35	57.10	15.75	L1	9.70	31.65
0.766	38.58	56.00	17.42	N	9.70	28.88
1.954	41.10	56.00	14.90	N	9.70	31.40
2.450	39.23	56.00	16.77	N	9.70	29.53

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.414	29.61	47.57	17.95	N	9.70	19.91
0.690	31.71	46.00	14.29	N	9.70	22.01
0.754	31.00	46.00	15.00	N	9.70	21.30
1.814	28.96	46.00	17.04	N	9.70	19.26
2.362	30.74	46.00	15.26	N	9.70	21.04
13.530	30.21	50.00	19.79	N	9.90	20.31

IDEL mode / Charging mode: Set 1
Voltage: 240V

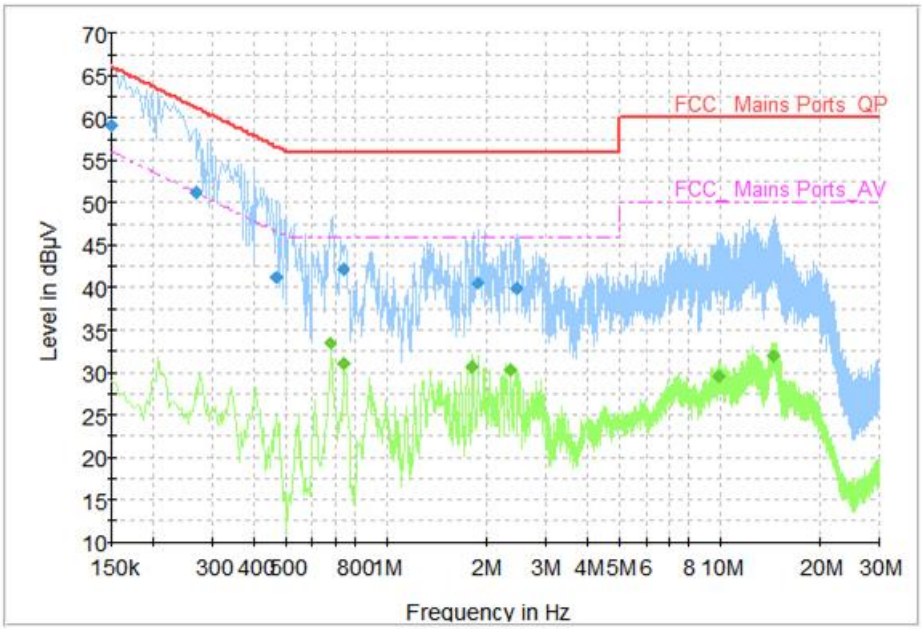


Figure B.8 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.150	59.14	66.00	6.86	L1	9.70	49.44
0.266	51.25	61.24	10.00	N	9.60	41.65
0.466	41.11	56.59	15.47	N	9.70	31.41
0.742	42.21	56.00	13.79	N	9.70	32.51
1.866	40.48	56.00	15.52	N	9.70	30.78
2.434	39.92	56.00	16.08	N	9.70	30.22

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.678	33.39	46.00	12.62	N	9.70	23.69
0.746	31.01	46.00	14.99	N	9.70	21.31
1.814	30.71	46.00	15.29	N	9.70	21.01
2.354	30.25	46.00	15.75	N	9.70	20.55
9.942	29.56	50.00	20.44	N	9.80	19.76
14.354	31.88	50.00	18.12	N	9.90	21.98

Camera mode / Charging mode: Set 2
Voltage: 240V

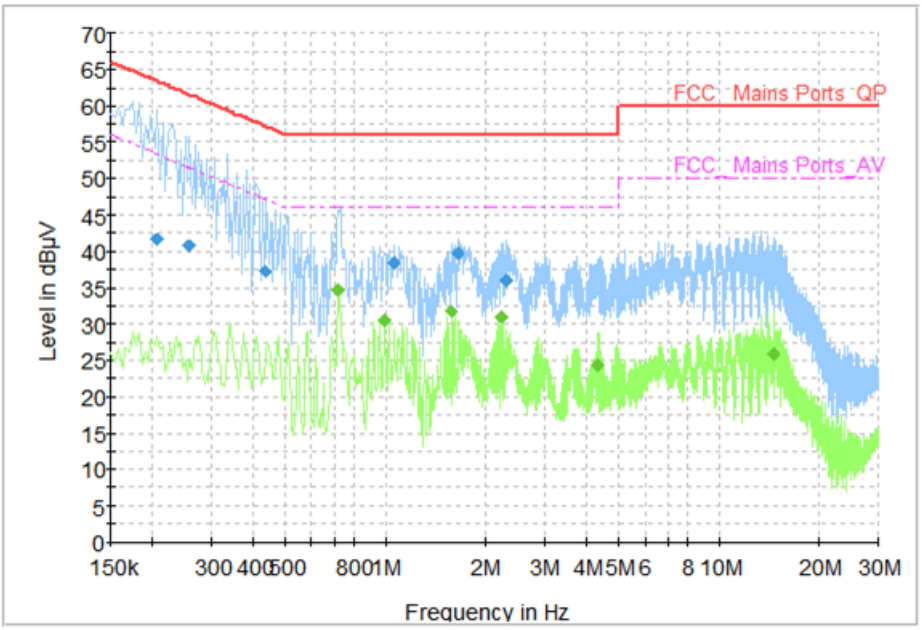


Figure B.9 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.206	41.61	63.37	21.75	N	9.60	32.01
0.258	40.74	61.50	20.76	N	9.60	31.14
0.434	37.29	57.18	19.88	L1	9.70	27.59
1.058	38.47	56.00	17.53	N	9.70	28.77
1.638	39.59	56.00	16.41	N	9.70	29.89
2.302	36.01	56.00	19.99	N	9.70	26.31

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.722	34.65	46.00	11.35	N	9.70	24.95
0.990	30.58	46.00	15.42	N	9.70	20.88
1.570	31.78	46.00	14.22	N	9.70	22.08
2.222	31.07	46.00	14.93	N	9.70	21.37
4.302	24.39	46.00	21.61	N	9.70	14.69
14.558	25.84	50.00	24.16	N	10.00	15.84

IDEL mode / Charging mode: Set 2
Voltage: 240V

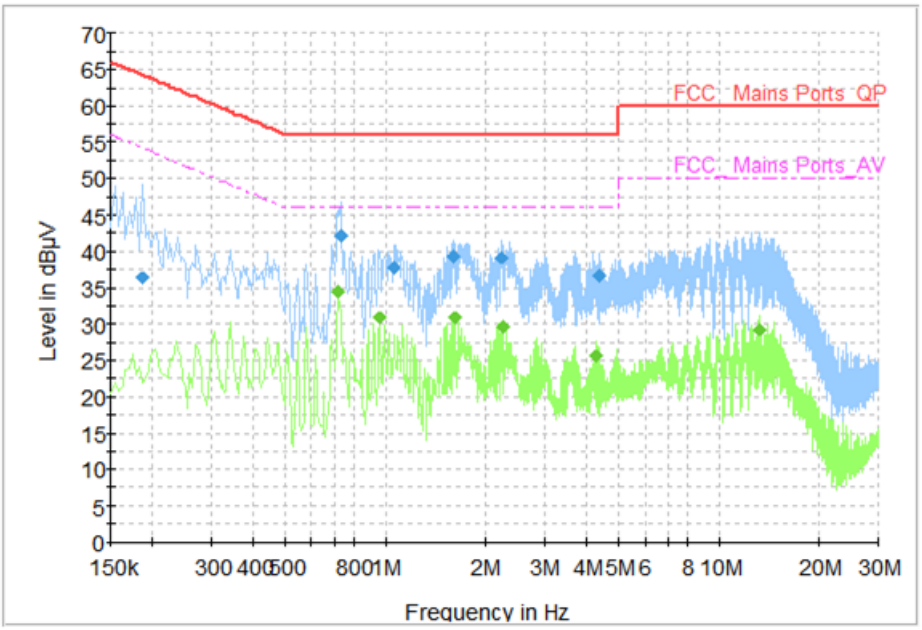


Figure B.10 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.186	36.37	64.21	27.84	L1	9.70	26.67
0.730	42.17	56.00	13.83	N	9.70	32.47
1.058	37.65	56.00	18.35	N	9.70	27.95
1.602	39.26	56.00	16.74	N	9.70	29.56
2.218	39.07	56.00	16.93	N	9.70	29.37
4.370	36.65	56.00	19.35	N	9.70	26.95

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.722	34.45	46.00	11.55	N	9.70	24.75
0.954	30.85	46.00	15.15	N	9.70	21.15
1.606	30.82	46.00	15.18	N	9.70	21.12
2.258	29.70	46.00	16.30	N	9.70	20.00
4.262	25.63	46.00	20.37	N	9.70	15.93
13.142	29.25	50.00	20.75	N	9.90	19.35

USB mode: Set 3
Voltage: 240V

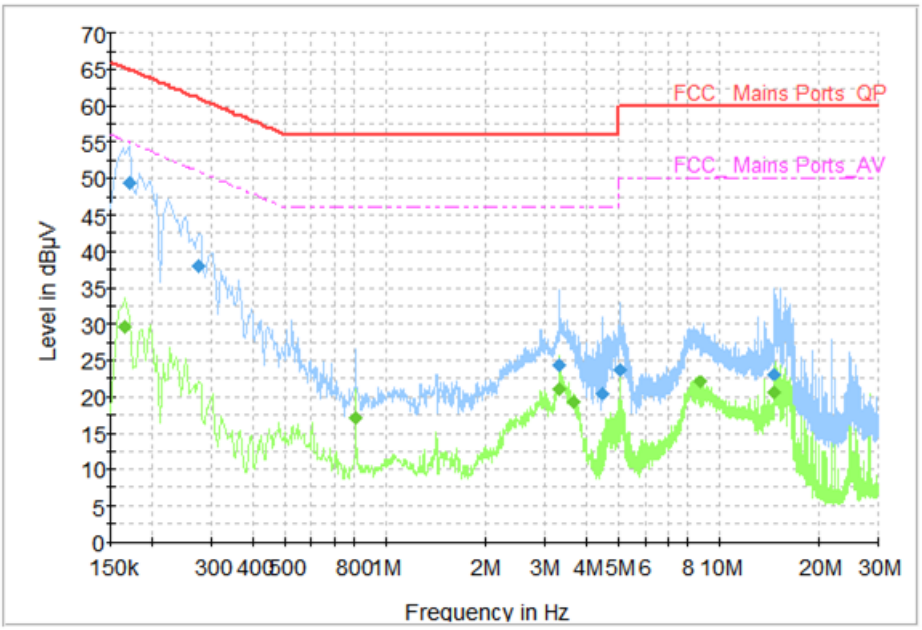


Figure B.11 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.170	49.43	64.96	15.53	L1	9.70	39.73
0.274	37.86	61.00	23.14	N	9.60	28.26
3.310	24.40	56.00	31.60	L1	9.70	14.70
4.482	20.44	56.00	35.56	N	9.70	10.74
5.034	23.62	60.00	36.38	N	9.70	13.92
14.638	23.16	60.00	36.84	N	10.00	13.16

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.166	29.58	55.16	25.58	N	9.60	19.98
0.814	17.03	46.00	28.97	L1	9.70	7.33
3.314	21.02	46.00	24.98	L1	9.70	11.32
3.662	19.17	46.00	26.83	L1	9.70	9.47
8.770	21.99	50.00	28.01	N	9.80	12.19
14.630	20.58	50.00	29.42	N	10.00	10.58

USB mode: Set 4
Voltage: 240V

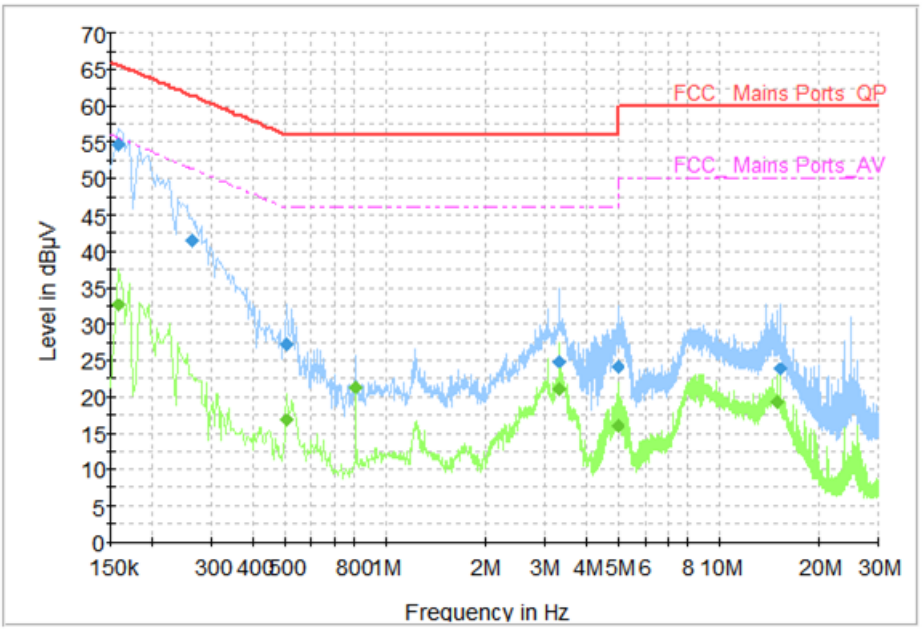


Figure B.12 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.158	54.66	65.57	10.91	L1	9.70	44.96
0.262	41.36	61.37	20.01	L1	9.70	31.66
0.506	27.08	56.00	28.92	L1	9.70	17.38
3.298	24.87	56.00	31.13	N	9.70	15.17
4.978	24.12	56.00	31.88	L1	9.80	14.32
15.310	23.89	60.00	36.11	N	10.00	13.89

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P_{Mea} (dBµV)
0.158	32.67	55.57	22.89	L1	9.70	22.97
0.506	16.67	46.00	29.33	L1	9.70	6.97
0.814	21.31	46.00	24.69	N	9.70	11.61
3.302	21.03	46.00	24.97	N	9.70	11.33
4.978	16.00	46.00	30.00	L1	9.80	6.20
14.906	19.18	50.00	30.82	N	10.00	9.18

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