

TEST REPORT

Report No.: SRTC2023-9003(F)-0034
Product Name: Smart Phone
Applicant: Sharp Corporation
Manufacturer: Sharp Corporation
Specification: FCC Part15B (Certification)
(2022 edition)
ANSI C63.4-2014
FCC ID: APYHRO00328

The State Radio_monitoring_center Testing Center (SRTC)
15th Building, No.30 Shixing Street, Shijingshan District,
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1. General information

1.1 Notes of the test report

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The test results relate only to individual items of the samples which have been tested.

1.2 Information about the testing laboratory

Company: The State Radio_monitoring_center Testing Center (SRTC)
Test Site 1: 15th Building, No.30 Shixing Street, Shijingshan District
Test Site 2: No.80, Zhaojiachang, Beizang, Daxing District
City: Beijing
Country or Region: P.R.China
Contacted person: Liu Jia
Tel: +86 10 57996183
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Email: liujiaf@srtc.org.cn
Designation Number: CN1267
Registration number: 239125

1.3 Applicant's details

Company: Sharp Corporation
Address: 1 Takumi-cho, Sakai-ku, Sakai City, Osaka 590-8522, Japan
City: Osaka
Country or Region: Japan
Contacted person: Mr. Taihei Ohtsuka
Tel: +81-50-5433-4157
Email: ---

1.4 Manufacturer's details

Company: Sharp Corporation
Address: 1 Takumi-cho, Sakai-ku, Sakai City, Osaka 590-8522, Japan
City: Osaka
Country or Region: Japan
Contacted person: Mr. Taihei Ohtsuka
Tel: +81-50-5433-4157
Email: ---

1.5 Application details

Date of reception of test sample: 1st Aug2023

Date of test: 1st Aug to 22th Aug 2023

1.6 Reference specification

FCC Part 15B, 2022 (Certification)

1.7 Information of EUT

1.7.1 General information

FCC ID	APYHRO00328
Frequency Range	GSM: GSM850 / PCS 1900 WCDMA: FDD II/ FDD V LTE: FDD 2/ FDD 5/FDD 12/ FDD 17/TDD 38/ TDD 41 5GNR: N41 NFC:13.56MHz Bluetooth: 2.4~2.4835GHz WiFi: 2.4~2.4835GHz 5.15-5.25GHz 5.25-5.35GHz 5.47-5.725GHz 5.725-5.85GHz
Nominal Voltage	4V
Power Supply	Charger/Battery
Extreme Voltage	Minimum: 3.7V Maximum: 4.3V
HW Version	PVT(Remodeled to the equivalent of MP products)
SW Version	A7110

1.7.2 EUT details

No.	IMEI	HW Version	SW Version
EUT1	004401231527926	PVT(Remodeled to the equivalent of MP products)	A7110
EUT2	004401231529229	PVT(Remodeled to the equivalent of MP products)	A7110
EUT3	004401231526878	PVT(Remodeled to the equivalent of MP products)	A7110

For EUT1 and EUT2 and EUT3 difference description :

/	/	UFS/DDR Memory	Main PCB	Ant PCB	Fingerprint FPC	Prox sensor FPC
Function	Explanation	128GB UFS+6GB LPDDR4X	PCB	PCB	FPC	FPC
	Pin assign	Pin-compatible	-	-	-	-
	Outline	Same	Same	Same	Same	Same
	Performance					
	Ref No.	IC1500	-	-	-	-
	Other	-	-	-	-	-
1st source	/	1st:Samsung	1st:Tripod	1st:Kinwong	1st:AKM	1st:AKM
2nd source	/	2nd:SK Hynix	2nd:CMK	2nd:Multek	2nd:NOK	2nd:NOK
3rd source	/	3rd:Micron	(1st:Tripod)	(1st:Kinwong)	(1st: AKM)	(1st: AKM)

/	/	Speaker FPC	OLED(OLED IC)	Main camera	Battery	CAB
Function	Explanation	FPC	Only driver IC for display is different	Only FPC is different	Only FET is different	AL+PBT
	Pin assign	-	-	-	-	-
	Outline	Same	Same	Same	Same	Same
	Performance					-
	Ref No.	-	-	-	-	-
	Other	-	-	-	-	-
1st source	/	1st:AKM	1st:Raydium	1st:AKM	1st:UPI	1st:HUAMAO
2nd source	/	2nd:NOK	2nd:Novatek	2nd:SCC	2nd:JSCJ	2nd:LINK
3rd source	/	(1st: AKM)	(1st: Raydium)	(1st: AKM)	(1st:UPI)	

Note1: As the information described, there are differences between OLED(OLED IC), Main camera,

Battery and supplier. So we need to test EUT1, EUT2, and EUT3 separately.

1.7.3 Auxiliary equipment details

AE (Auxiliary Equipment) 1#:Charger1

Manufacturer	DVE
Model Number	DSA-10PF06-05 FUS

AE (Auxiliary Equipment) 2#: Battery1

Battery Type	Li-ion
Manufacturer	ATL
Model Number	UBATIA316AFN2
Capacity	(typ.) 5000 mAh / (min.) 4860 mAh
Nominal Voltage	3.89V

AE (Auxiliary Equipment) 3#: USB cable1

Manufacturer	Kingpower
Model Number	K201-05130-00

AE (Auxiliary Equipment) 4-1#: Headset1

Manufacturer	Ambibio
Model Number	AB-HI02JS (RPHOEA007AFZZ)

AE (Auxiliary Equipment) 4-2#: Headset1

Manufacturer	Panasonic
Model Number	RP-HJS150

AE (Auxiliary Equipment) 5#: Laptop 1

Manufacturer	LENOVO
Model Number	E480

AE (Auxiliary Equipment) 6#: Laptop 2

Manufacturer	LENOVO
Model Number	E14

Note1: As the information described, the relevant tests have been performed in order to verify in which mode would have the worst features, so all the tests shown in this test report are performed when the EUT exercised by the charger AE1, the Battery AE2, the USB cable AE3 and AE4-1.

1.7.4 Test mode

Mode No.	Description of test mode
Mode 1	Rear camera on + GNSS RX + GSM/WCDMA/LTE/5GNR/BT/WLAN receiver
Mode 2	Front camera on + GNSS RX + GSM/WCDMA/LTE/5GNR/BT/WLAN receiver
Mode 3	USB copy(EUT with PC)
Mode 4	Mp4 + GNSS RX + GSM/WCDMA/LTE/5GNR/BT/WLAN receiver
Mode 5	Mp3 + GNSS RX + GSM/WCDMA/LTE/5GNR/BT/WLAN receiver

Note: As the information described, the relevant tests have been performed in order to verify in which mode would have the worst features ,so all the tests shown in this test report are performed when the EUT working on Mode 1 and Mode 3.

2. Test information

2.1 Summary of the test results

No.	Test case	FCC reference	Verdict
1	Conducted emissions	15.107	Pass
2	Radiated emissions	15.109	Pass

Approved By: Mr. Liu Wei Director of the test department 	Checked By Mr. Guo Yu Vice director of the test department 
Tested by: Mr. Wen Jianlong Test engineer 	Issued date: 2023.8.23

2.2 Test result

2.2.1 Conducted Emissions-FCC Part15.107

Ambient condition:

Temperature	Relative humidity	Pressure
23.1℃	36.8%	100.9kPa

Test Setup with charger:

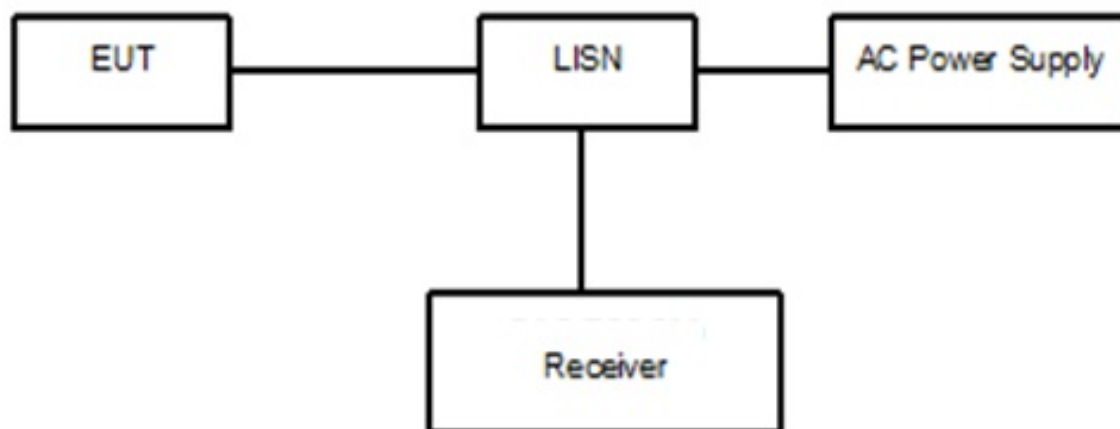


Figure 1

Test Procedure:

The EUT is placed on a non-metallic table 0.8m above the horizontal metal reference ground plane. The EUT is connected with LISN via the charger. The LISN is connected to the reference ground. The accessories of the EUT are connected with the EUT such as headset etc. Open the following functions of EUT: FM, GPS, Camera and video.

The test set-up and the test methods are performed according to ANSI C63.4:2014.

Then start the test software EMC32. Sweep the whole frequency band through the range from 150 KHz to 30 MHz with RBW 9kHz, VBW 30kHz. The measurement should be done for both L line and N line. During pre-test, the receiver uses both peak detector and average detector. And the final test, the receiver uses both average detector and Quasi-peak detector.

The data of cable loss has been calibrated in full testing frequency range before the testing.

Test Setup with laptop:

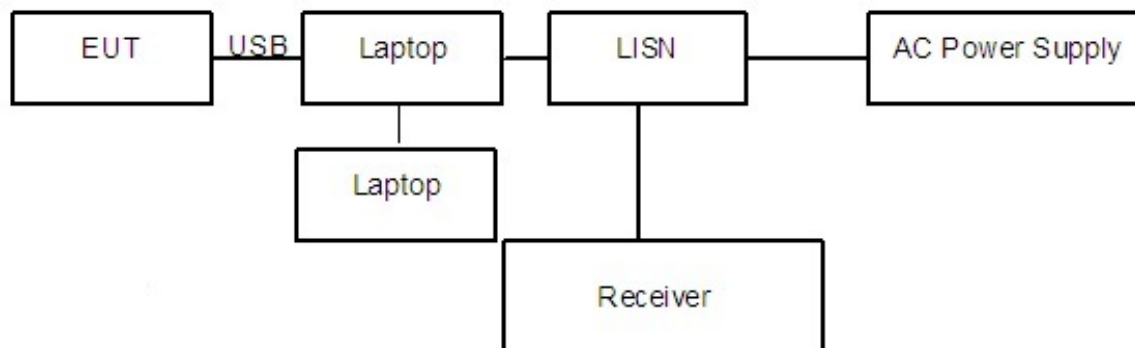


Figure 2

Test Procedure:

The EUT is placed on a non-metallic table 0.8m above the horizontal metal reference ground plane. The accessories of the EUT are connected with the EUT such as headset etc. The EUT was connected with a laptop via the USB cable and transferred the data by copying large files from laptop to the EUT. The laptop's LAN port is connected with another laptop via cable. And the data transferring between two laptops is maintained.

The AC main power supply of the laptop is connected to LISN and LISN is connected to the reference ground. The test set-up and the test methods are performed according to ANSI C63.4:2014.

Then start the test software EMC32. Sweep the whole frequency band through the range from 150 KHz to 30 MHz. The measurement should be done for both L line and N line. During pre-test, the receiver uses both peak detector and average detector. And the final test, the receiver uses both average detector and Quasi-peak detector.

The data of cable loss has been calibrated in full testing frequency range before the testing.

A “reference path loss” Corr.(dB) is established and the $L_{\text{cable}} + \text{ATT} + \text{VDF}$ is the attenuation of “reference path loss”, and including the cable loss, the attenuation of the attenuator, the voltage division factor of AMN.

The measurement results are obtained as described below:

$$P_{\text{result}} = P_{\text{mea}} + \text{Corr. (dB)}$$

Sample calculation: $(41.31\text{dB}\mu\text{V}) = (11.61\text{dB}\mu\text{V}) + (29.7\text{ dB})$, the corresponding frequency is 0.175586MHz.

Limit:

Frequency of Emission(MHz)	Limits(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

Note: * Decreases with the logarithm of the frequency

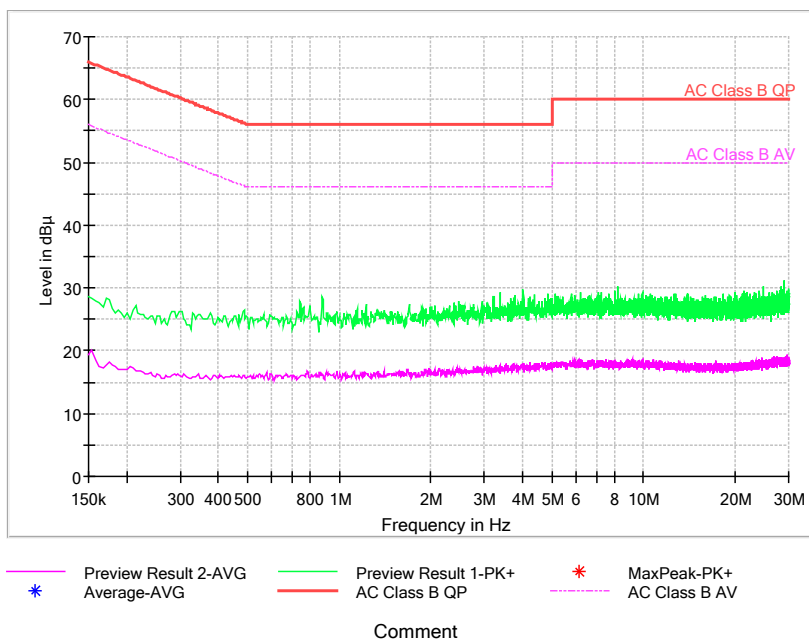
Uncertainty

Quasi-peak: 3.92dB

Average: 3.92dB

Test result:

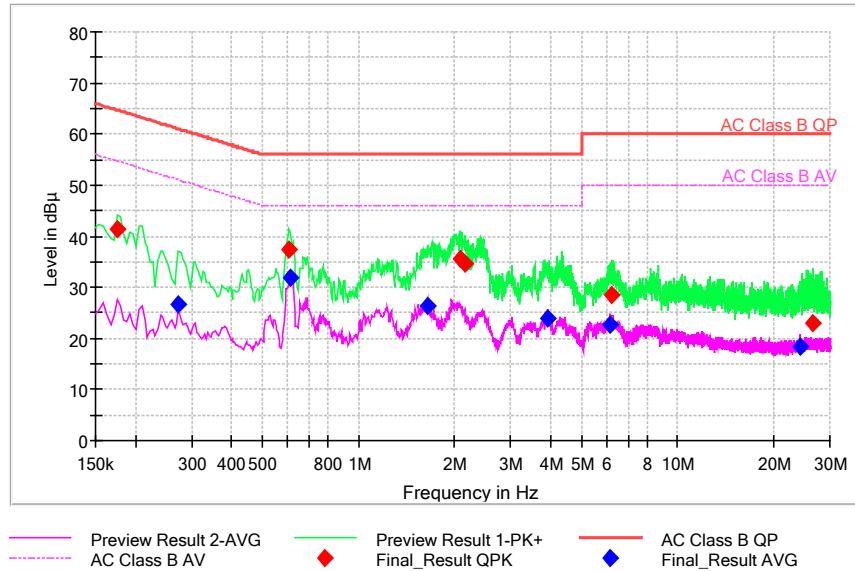
Noise Level of the Measuring Instrument



Pic1. Conducted emission L and N Line

EUT1+3#USB Cable1+2#Battery1+1#Charger1:

Full Spectrum

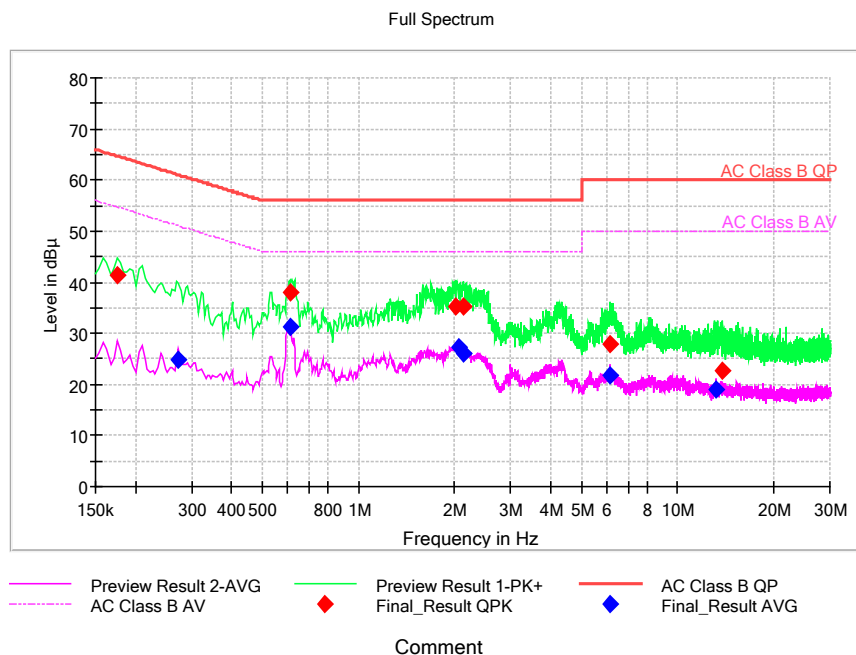


Comment

Pic2. Conducted emission L&N Line Voltage: 120VAC

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)	P _{mea} QuasiPeak (dBμV)	P _{mea} Average (dBμV)
0.175586	41.31	---	64.69	23.39	N	29.7	11.61	---
0.273664	---	26.56	51.01	24.45	L1	29.8	---	-3.24
0.606279	37.24	---	56	18.76	L1	29.8	7.44	---
0.610543	---	31.93	46	14.07	L1	29.8	---	2.13
1.638236	---	26.47	46	19.53	L1	29.8	---	-3.33
2.085986	35.64	---	56	20.36	N	29.8	5.84	---
2.14995	34.67	---	56	21.33	N	29.8	4.87	---
3.9111	---	23.81	46	22.19	L1	29.8	---	-5.99
6.137057	---	22.57	50	27.43	L1	29.9	---	-7.33
6.196757	28.37	---	60	31.63	N	29.9	-1.53	---
24.200571	---	18.37	50	31.63	L1	30	---	-11.63
26.580043	23.03	---	60	36.97	N	30.1	-7.07	---

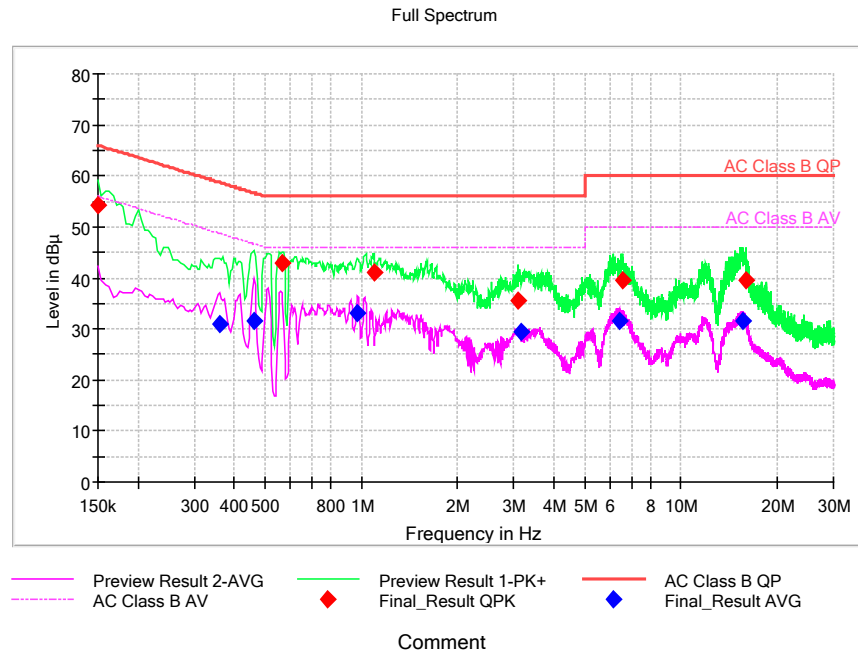
EUT1+3#USB Cable1+2#Battery1+1#Charger1:



Pic3. Conducted emission L&N Line Voltage: 240VAC

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)	P _{mea} QuasiPeak (dBμV)	P _{mea} Average (dBμV)
0.17559	41.44	---	64.69	23.25	L1	29.8	11.64	---
0.27366	---	24.97	51.01	26.03	L1	29.8	---	-4.83
0.61054	37.88	---	56	18.12	L1	29.8	8.08	---
0.61481	---	31.32	46	14.68	L1	29.8	---	1.52
2.01349	35.18	---	56	20.82	N	29.8	5.38	---
2.07319	---	27.29	46	18.71	L1	29.8	---	-2.51
2.12436	35.12	---	56	20.88	N	29.8	5.32	---
2.14142	---	26.08	46	19.92	L1	29.8	---	-3.72
6.12853	27.94	---	60	32.06	N	29.9	-1.96	---
6.13279	---	21.81	50	28.19	N	29.9	---	-8.09
13.203	---	19.06	50	30.94	N	30	---	-10.94
13.7403	22.78	---	60	37.22	N	30	-7.22	---

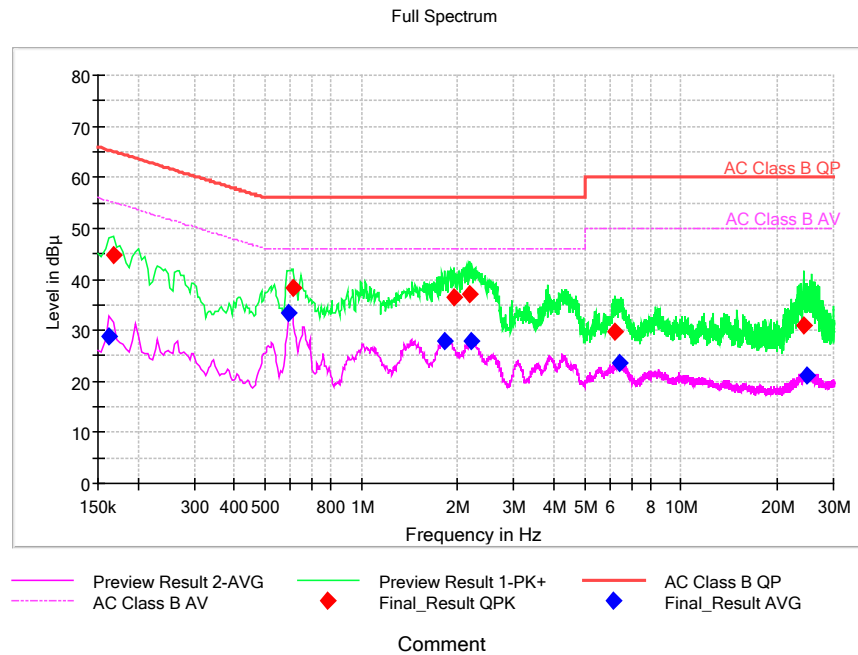
EUT1 + 3#USB Cable1+2#Battery1+5# Laptop 1+6# Laptop 2:



Pic4. Conducted emission L&N Line

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)	Pmea QuasiPeak (dBμV)	Pmea Average (dBμV)
0.15	54.17	---	66	11.83	L1	29.8	24.37	---
0.35895	---	31.09	48.75	17.66	L1	29.8	---	1.29
0.46129	---	31.57	46.67	15.1	N	29.8	---	1.77
0.5679	43.01	---	56	12.99	N	29.8	13.21	---
0.97301	---	33.19	46	12.81	N	29.8	---	3.39
1.09241	41.04	---	56	14.96	N	29.8	11.24	---
3.09236	35.48	---	56	20.52	N	29.9	5.58	---
3.15206	---	29.44	46	16.56	N	29.9	---	-0.46
6.43982	---	31.72	50	18.28	N	29.9	---	1.82
6.5379	39.43	---	60	20.57	N	29.9	9.53	---
15.5654	---	31.7	50	18.3	L1	30	---	1.7
15.9193	39.45	---	60	20.55	L1	30	9.45	---

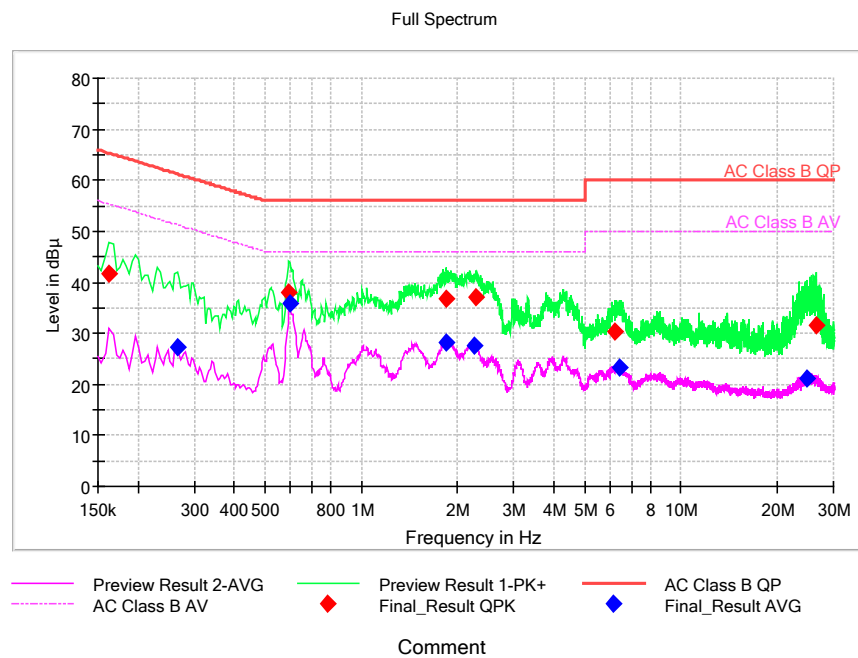
EUT2+3#USB Cable1+2#Battery1+1#Charger1:



Pic5. Conducted emission L&N Line Voltage: 120VAC

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)	P _{mea} QuasiPeak (dBμV)	P _{mea} Average (dBμV)
0.16279	---	28.75	55.32	26.57	N	29.8	---	-1.05
0.16706	44.6	---	65.11	20.51	N	29.8	14.8	---
0.59349	---	33.3	46	12.7	N	29.8	---	3.5
0.61054	38.29	---	56	17.71	N	29.8	8.49	---
1.81734	---	28	46	18	N	29.8	---	-1.8
1.94953	36.46	---	56	19.54	L1	29.8	6.66	---
2.17554	37.23	---	56	18.77	L1	29.9	7.33	---
2.20539	---	27.91	46	18.09	N	29.8	---	-1.89
6.23514	29.73	---	60	30.27	L1	29.9	-0.17	---
6.39291	---	23.72	50	26.28	N	29.9	---	-6.18
24.1835	30.83	---	60	29.17	L1	30	0.83	---
24.8018	---	21.02	50	28.98	L1	30	---	-8.98

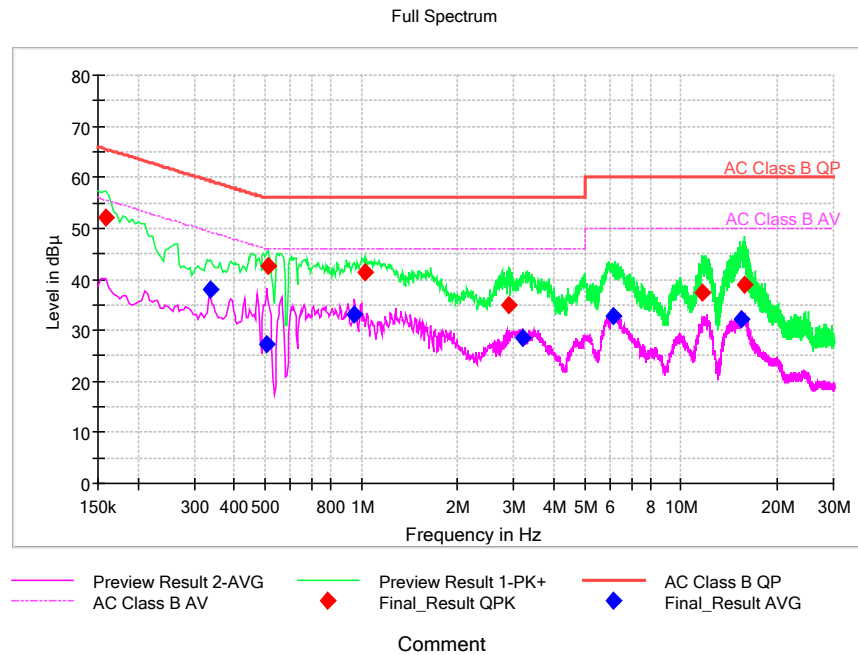
EUT2+3#USB Cable1+2#Battery1+1#Charger1:



Pic6. Conducted emission L&N Line Voltage: 240VAC

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)	P _{mea} QuasiPeak (dBμV)	P _{mea} Average (dBμV)
0.16279	41.76	---	65.32	23.56	N	29.8	11.96	---
0.26514	---	27.13	51.27	24.14	N	29.8	---	-2.67
0.59349	37.99	---	56	18.01	L1	29.8	8.19	---
0.59775	---	35.82	46	10.18	N	29.8	---	6.02
1.83866	36.8	---	56	19.2	L1	29.8	7	---
1.84719	---	28.19	46	17.81	N	29.8	---	-1.61
2.25229	---	27.63	46	18.37	N	29.8	---	-2.17
2.28641	37.08	---	56	18.92	L1	29.9	7.18	---
6.23514	30.23	---	60	29.77	L1	29.9	0.33	---
6.42703	---	23.28	50	26.72	N	29.9	---	-6.62
24.772	---	21.21	50	28.79	L1	30	---	-8.79
26.6184	31.64	---	60	28.36	L1	30.1	1.54	---

EUT2 + 3#USB Cable1+2#Battery1+5# Laptop 1+6# Laptop 2:

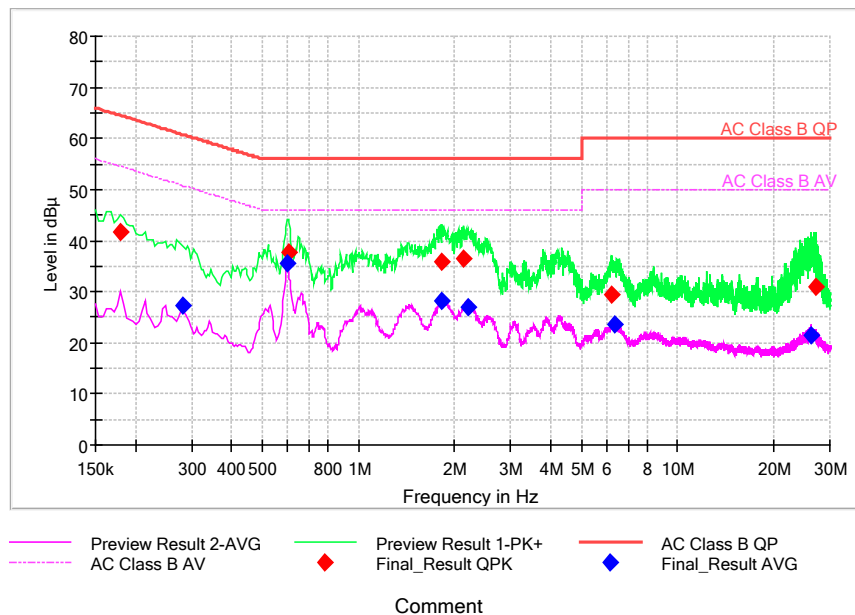


Pic7. Conducted emission L&N Line

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)	Pmea QuasiPeak (dBμV)	Pmea Average (dBμV)
0.15853	52.26	---	65.54	13.28	L1	29.8	22.46	---
0.33763	---	38.15	49.26	11.11	L1	29.8	---	8.35
0.5082	---	27.27	46	18.73	L1	29.8	---	-2.53
0.51246	42.62	---	56	13.38	L1	29.8	12.82	---
0.95169	---	33.19	46	12.81	N	29.8	---	3.39
1.02418	41.23	---	56	14.77	N	29.8	11.43	---
2.90473	34.92	---	56	21.08	N	29.9	5.02	---
3.1947	---	28.37	46	17.63	N	29.9	---	-1.53
6.15838	---	32.65	50	17.35	N	29.9	---	2.75
11.6892	37.31	---	60	22.69	L1	30	7.31	---
15.4673	---	32.11	50	17.89	L1	30	---	2.11
15.8127	38.85	---	60	21.15	L1	30	8.85	---

EUT3+3#USB Cable1+2#Battery1+1#Charger1:

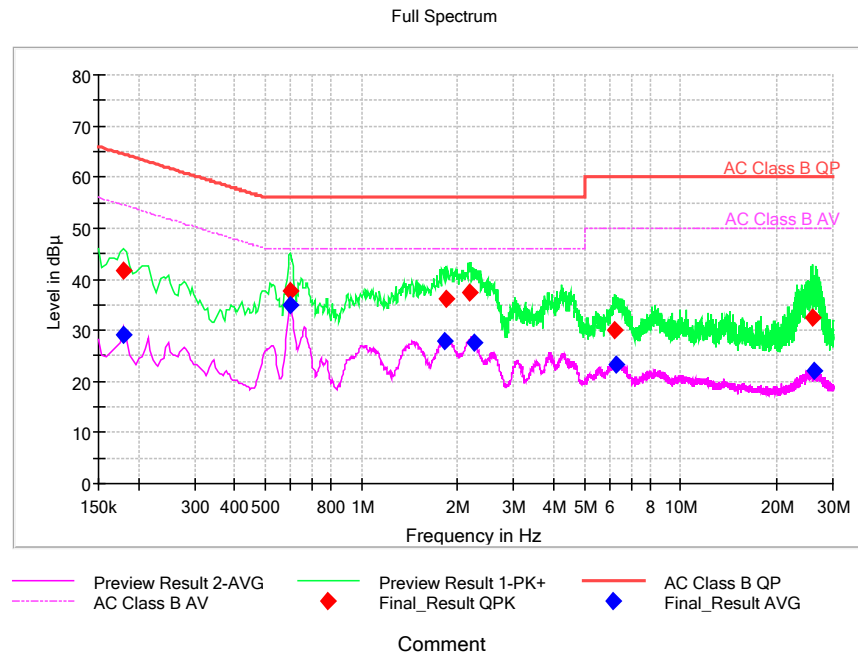
Full Spectrum



Pic8. Conducted emission L&N Line Voltage: 120VAC

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)	P _{mea} QuasiPeak (dBμV)	P _{mea} Average (dBμV)
0.17985	41.81	---	64.49	22.68	N	29.8	12.01	---
0.28219	---	27.3	50.75	23.45	N	29.8	---	-2.5
0.59775	---	35.49	46	10.51	N	29.8	---	5.69
0.60201	37.75	---	56	18.25	L1	29.8	7.95	---
1.82586	---	28.21	46	17.79	N	29.8	---	-1.59
1.83013	35.92	---	56	20.08	L1	29.8	6.12	---
2.14142	36.48	---	56	19.52	L1	29.9	6.58	---
2.20539	---	26.84	46	19.16	L1	29.9	---	-3.06
6.20955	29.44	---	60	30.56	L1	29.9	-0.46	---
6.35454	---	23.5	50	26.5	N	29.9	---	-6.4
26.2304	---	21.5	50	28.5	L1	30.1	---	-8.6
27.1643	31.08	---	60	28.92	L1	30.1	0.98	---

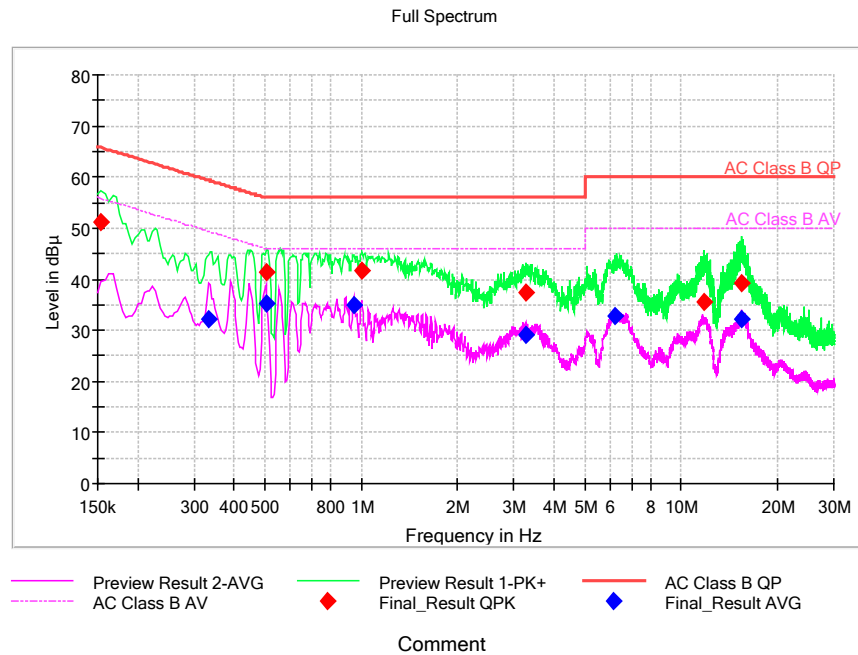
EUT3+3#USB Cable1+2#Battery1+1#Charger1:



Pic9. Conducted emission L&N Line Voltage: 240VAC

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)	P _{mea} QuasiPeak (dBμV)	P _{mea} Average (dBμV)
0.17985	41.72	---	64.49	22.77	N	29.8	11.92	---
0.17985	---	29.14	54.49	25.35	N	29.8	---	-0.66
0.59775	37.7	---	56	18.3	L1	29.8	7.9	---
0.59775	---	35.06	46	10.94	N	29.8	---	5.26
1.82586	---	27.91	46	18.09	N	29.8	---	-1.89
1.83866	36.12	---	56	19.88	L1	29.8	6.32	---
2.19259	37.51	---	56	18.49	L1	29.9	7.61	---
2.26509	---	27.46	46	18.54	N	29.8	---	-2.34
6.21808	30.09	---	60	29.91	L1	29.9	0.19	---
6.30763	---	23.23	50	26.77	N	29.9	---	-6.67
25.8167	32.52	---	60	27.48	L1	30.1	2.42	---
26.2517	---	21.95	50	28.05	L1	30.1	---	-8.15

EUT3 + 3#USB Cable1+2#Battery1+5# Laptop 1+6# Laptop 2:



Pic10. Conducted emission L&N Line

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)	Pmea QuasiPeak (dBμV)	Pmea Average (dBμV)
0.15426	51.25	---	65.77	14.52	L1	29.8	21.45	---
0.33336	---	32.33	49.37	17.04	L1	29.8	---	2.53
0.50394	---	35.18	46	10.82	L1	29.8	---	5.38
0.5082	41.41	---	56	14.59	L1	29.8	11.61	---
0.94742	---	34.79	46	11.21	N	29.8	---	4.99
1.00712	41.8	---	56	14.2	N	29.8	12	---
3.2544	---	29.2	46	16.8	N	29.9	---	-0.7
3.26293	37.45	---	56	18.55	N	29.9	7.55	---
6.22234	---	32.7	50	17.3	N	29.9	---	2.8
11.7574	35.68	---	60	24.32	L1	30	5.68	---
15.4972	39.34	---	60	20.66	L1	30	9.34	---
15.51	---	32.06	50	17.94	L1	30	---	2.06

2.2.2 Radiated Emissions-FCC Part15.109

Ambient condition:

Temperature	Relative humidity	Pressure
23.1°C	36.8%	100.9kPa

Test Setup:

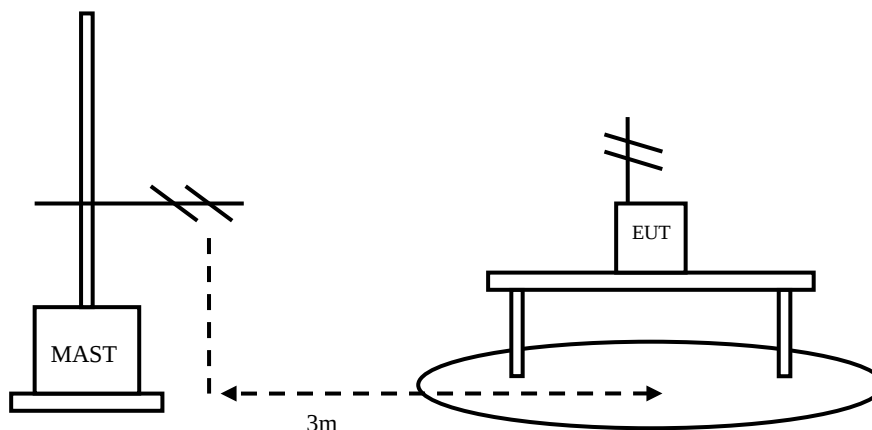


Figure 3

Test Procedure:

EUT+Charger:

The EUT should be placed on a non-metallic table 80cm above the ground plane. The receive antennas shall be moved from 1 to 4 meters. The distance between EUT and receive antenna should be 3 meters.

The accessories of the EUT are connected with the EUT such as headset etc. The EUT should work in idle mode. Open the following functions of EUT: FM, GPS, Camera and video. The test set-up and the test methods are performed according to ANSI C63.4:2014.

Then start the test software EMC32. Sweep the whole frequency band through the range from 30MHz to 1GHz, using receive log period antenna VULB 9163.

During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The EUT is laid in two modes as follow: 1. put the EUT in horizontal direction; 2. put the EUT in vertical direction.

The data of cable loss and antenna factor have been calibrated in full testing frequency range before the testing. All test results are performed with max hold at the horizontal and vertical polarity.

RBW=120kHz, VBW=300kHz, when the test frequency: $30\text{MHz} < f < 1\text{GHz}$

RBW=1MHz, VBW=3MHz, when the test frequency: $f > 1\text{GHz}$

EUT+Laptop:

The EUT should be placed on a non-metallic table 80cm above the ground plane. The receive antennas shall be moved from 1 to 4 meters. The distance between EUT and receive antenna should be 3 meters.

The accessories of the EUT are connected with the EUT such as headset etc. The EUT was connected with a laptop via the USB cable and transferred the data by copying large files from laptop to the EUT. The test set-up and the test methods are performed according to ANSI C63.4:2014

Then start the test software EMC32. Sweep the whole frequency band through the range from 30MHz to 1GHz, using receive log period antenna VULB 9163.

During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The EUT is laid in two modes as follow: 1. put the EUT in horizontal direction; 2. put the EUT in vertical direction.

The data of cable loss and antenna factor have been calibrated in full testing frequency range before the testing.

A “reference path loss” is established and the A_{Rpl} is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

The measurement results are obtained as described below:

$$\text{Result} = P_{\text{mea}} + A_{Rpl}$$

Sample calculation: $(28.06 \text{ dB}\mu\text{V/m}) = (48.36 \text{ dB}\mu\text{V}) + (-20.3 \text{ dB/m})$, the corresponding frequency is 30.3395MHz.

Limit:

Frequency of Emission(MHz)	Limits	
	Detector	Unit (dB μ V/m)
30~88	Quasi-peak	40
88~216	Quasi-peak	43.5
216~960	Quasi-peak	46
960~1000	Quasi-peak	54
1000~5th harmonic of the highest frequency or 40GHz, whichever is lower	Average	54
	Peak	74

Uncertainty

30MHz~1000MHz 4.73dB

1000MHz~26000MHz 4.58dB

Test result:
EUT1+charger1:

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
38.8755	27.68	-18.8	46.48	Vertical	40	12.32
84.223	31.3	-20.5	51.8	Vertical	40	8.7
173.075	22.47	-20.6	43.07	Vertical	43.5	21.03
202.854	26.43	-18.8	45.23	Vertical	43.5	17.07
318.963	15.72	-15.3	31.02	Vertical	46	30.28
956.059	21.06	-2.8	23.86	Vertical	46	24.94

EUT1+Laptop:

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
39.2635	26.97	-18.7	45.67	Vertical	40	13.03
68.2665	28.78	-21.2	49.98	Vertical	40	11.22
171.426	26.8	-20.7	47.5	Vertical	43.5	16.7
176.373	30.16	-20.5	50.66	Vertical	43.5	13.34
319.0115	22.13	-15.3	37.43	Vertical	46	23.87
831.1715	23.82	-4.5	28.32	Vertical	46	22.18

EUT2+charger1:

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
34.462	29.97	-19.6	49.57	Vertical	40	10.03
83.9805	31	-20.6	51.6	Vertical	40	9
171.135	22.08	-20.7	42.78	Vertical	43.5	21.42
201.0595	26.18	-18.8	44.98	Vertical	43.5	17.32
316.1985	16.11	-15.3	31.41	Vertical	46	29.89
885.637	20.18	-3.6	23.78	Vertical	46	25.82

EUT2+Laptop:

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
39.8455	27.59	-18.6	46.19	Vertical	40	12.41
68.2665	30.03	-21.2	51.23	Vertical	40	9.97
173.075	28.75	-20.6	49.35	Vertical	43.5	14.75
177.3915	30	-20.5	50.5	Vertical	43.5	13.5
324.783	23.56	-15.1	38.66	Vertical	46	22.44
831.5595	23.27	-4.5	27.77	Vertical	46	22.73

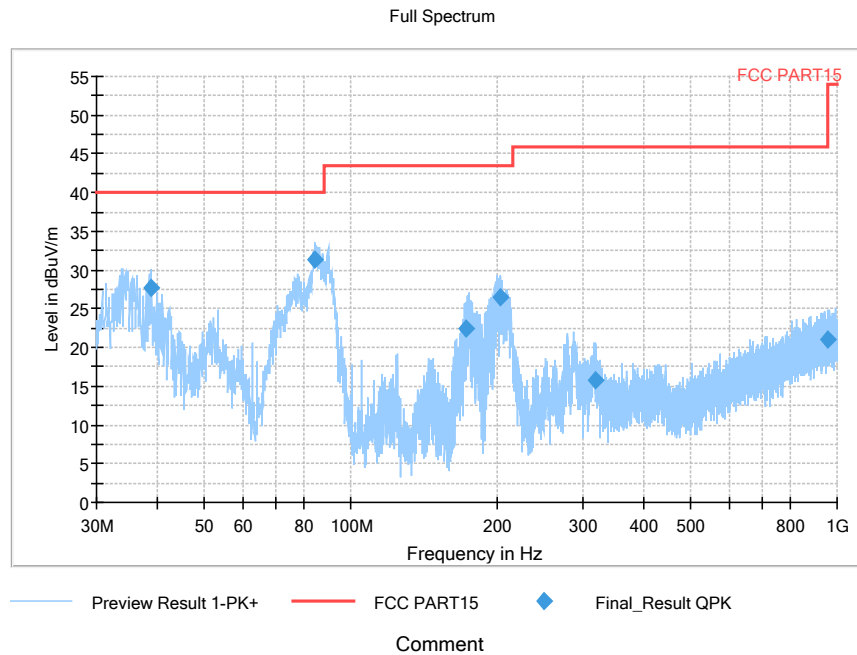
EUT3+charger1:

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
34.6075	29.87	-19.6	49.47	Vertical	40	10.13
84.1745	31.21	-20.5	51.71	Vertical	40	8.79
172.202	22.28	-20.7	42.98	Vertical	43.5	21.22
200.3805	26.57	-18.8	45.37	Vertical	43.5	16.93
314.9375	16.1	-15.4	31.5	Vertical	46	29.9
950.433	21.02	-2.8	23.82	Vertical	46	24.98

EUT3+Laptop:

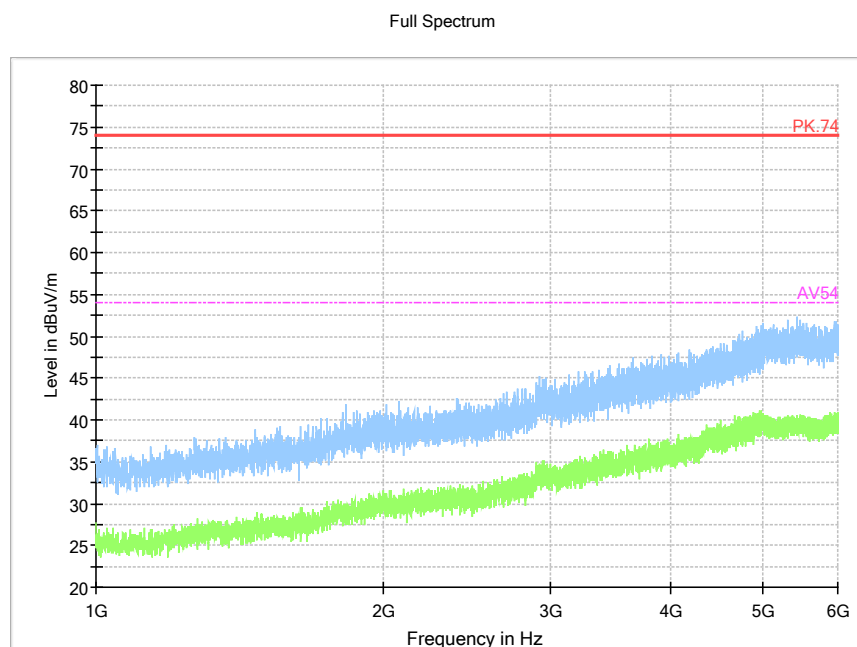
Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
50.661	29.88	-18.4	48.28	Vertical	40	10.12
68.8485	29.47	-21.3	50.77	Vertical	40	10.53
172.4445	28	-20.7	48.7	Vertical	43.5	15.5
176.4215	30.23	-20.5	50.73	Vertical	43.5	13.27
323.2795	23.77	-15.1	38.87	Vertical	46	22.23
996.605	31.61	-2.4	34.01	Vertical	54	22.39

EUT1 + 3#USB Cable1+2#Battery1+1#Charger1: refer to Pic11 to Pic14



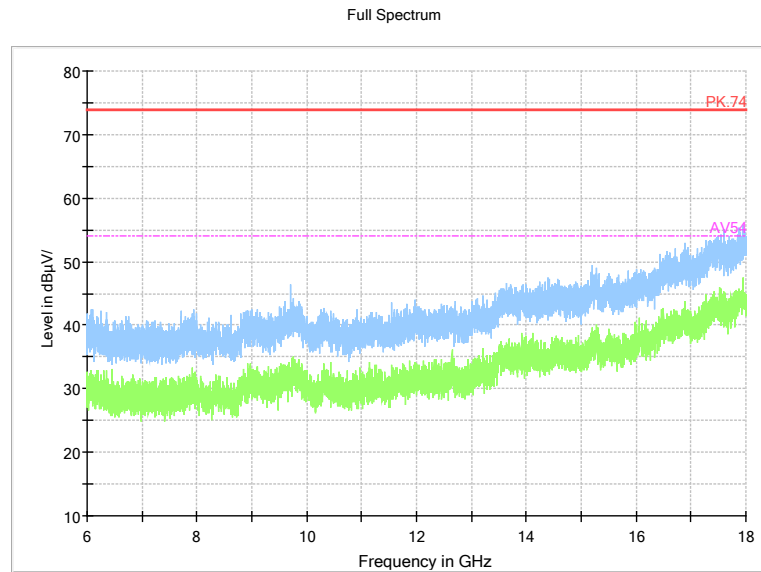
Pic11. Radiated emission (30MHz – 1GHz)

Note: The test data in the graph includes two polarizations: horizontal and vertical



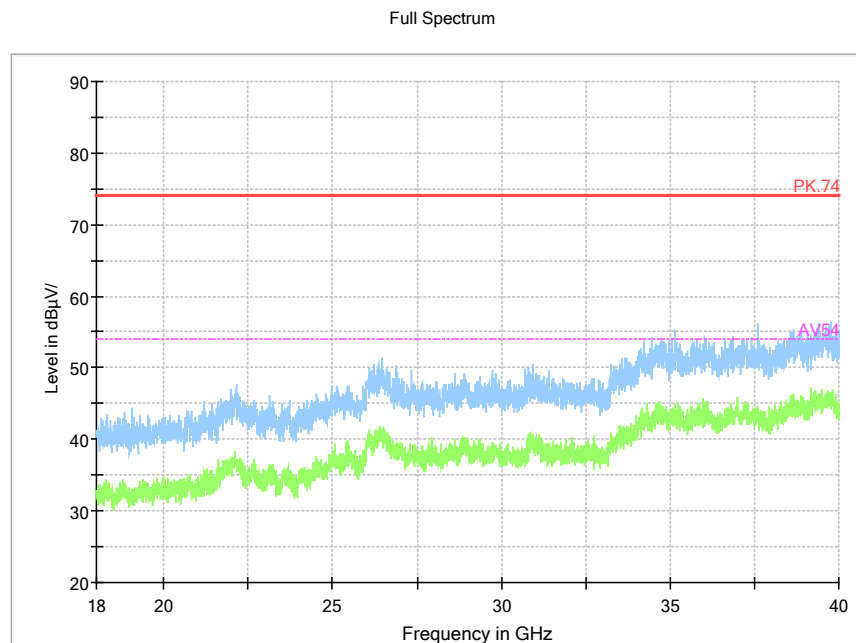
Pic12. Radiated emission (1GHz –6GHz)

Note: The test data in the graph includes two polarizations: horizontal and vertical



Pic13. Radiated emission (6GHz –18GHz)

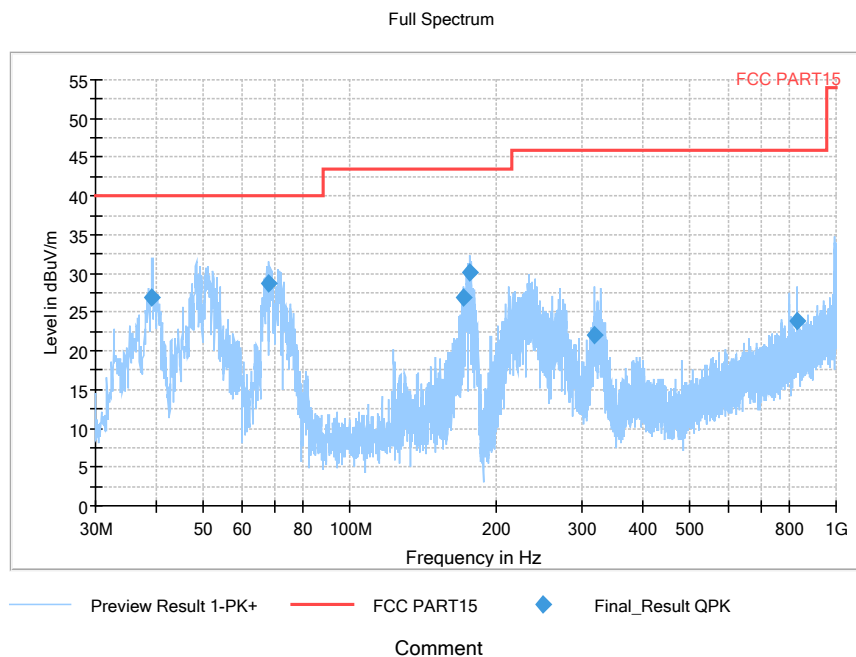
Note: The test data in the graph includes two polarizations: horizontal and vertical



Pic14. Radiated emission (18GHz –40GHz)

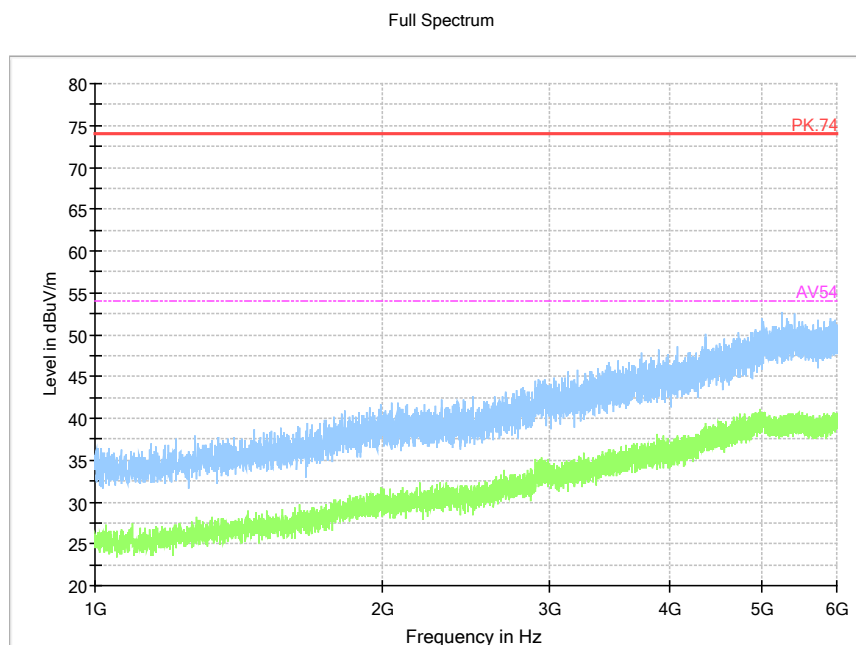
Note: The test data in the graph includes two polarizations: horizontal and vertical

EUT1 + 8#USB Cable1+6#Battery1+11# Laptop 1: refer to Pic15 to Pic18



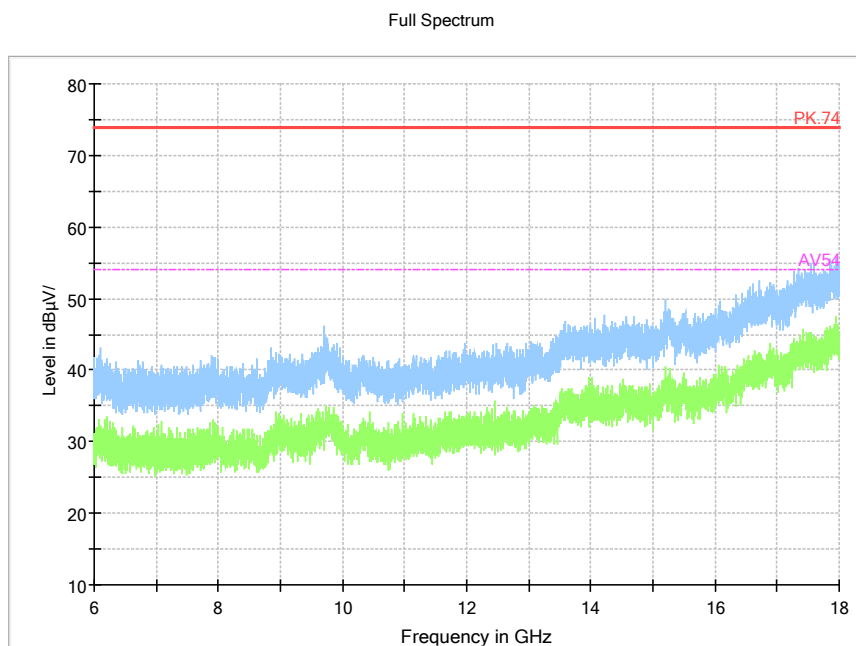
Pic15. Radiated emission (30MHz – 1GHz)

Note: The test data in the graph includes two polarizations: horizontal and vertical



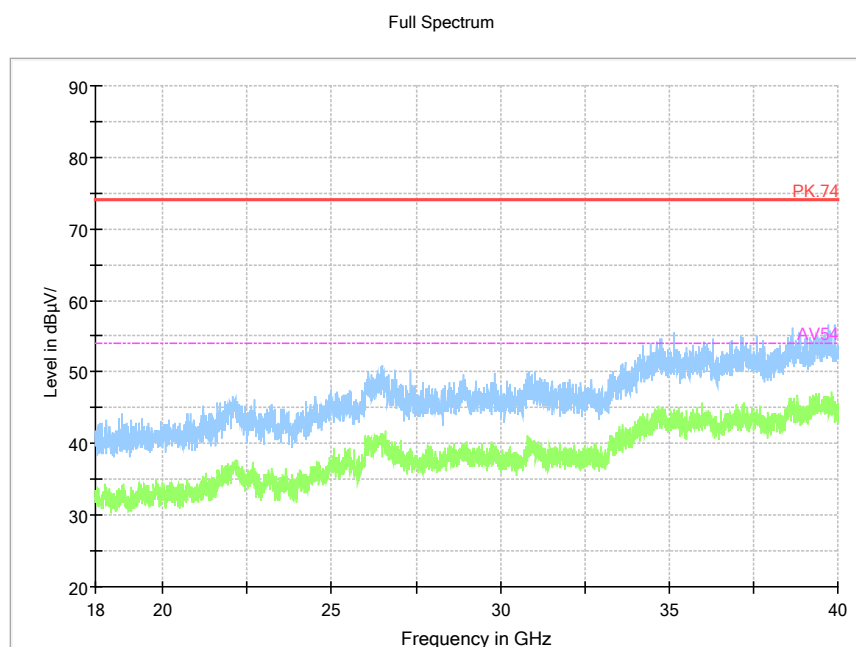
Pic5. Radiated emission (1GHz –6GHz)

Note: The test data in the graph includes two polarizations: horizontal and vertical



Pic6. Radiated emission (6GHz –18GHz)

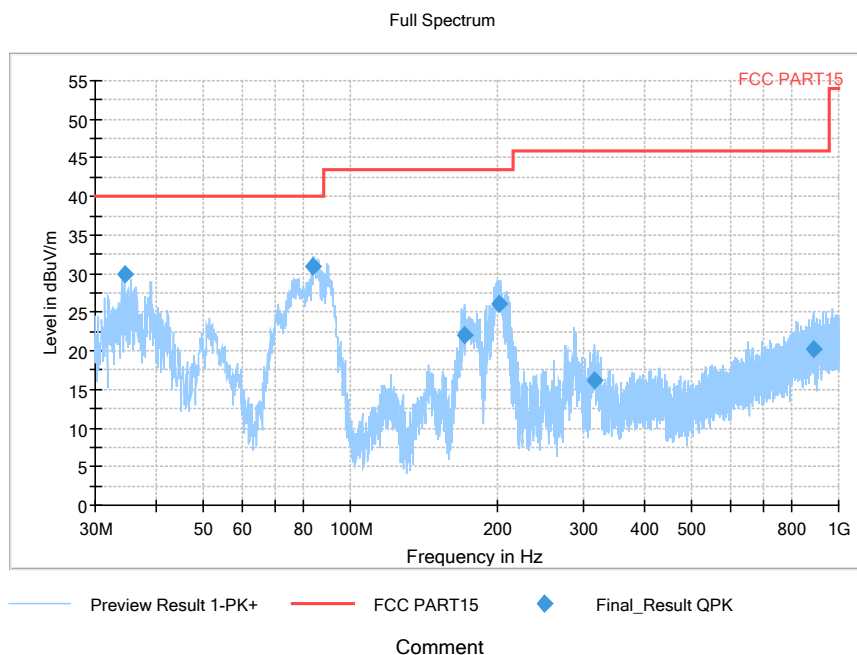
Note: The test data in the graph includes two polarizations: horizontal and vertical



Pic18. Radiated emission (18GHz –40GHz)

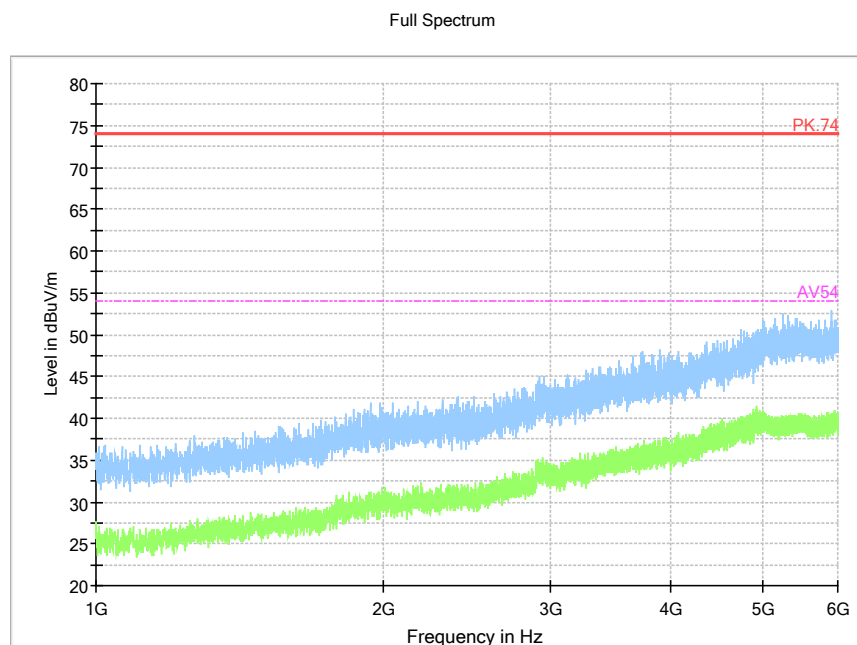
Note: The test data in the graph includes two polarizations: horizontal and vertical

EUT2 + 3#USB Cable1+2#Battery1+1#Charger1: refer to Pic5 to Pic8



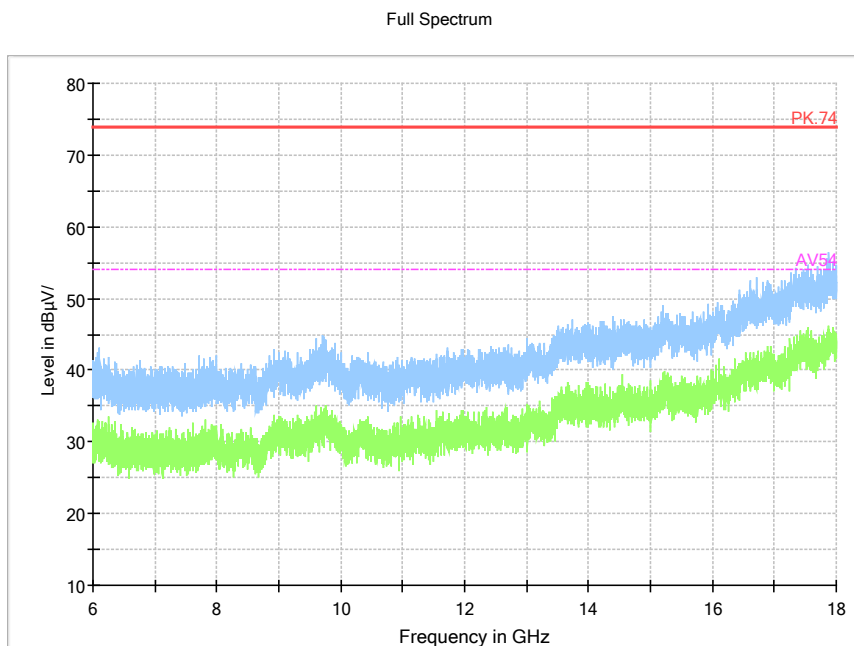
Pic19. Radiated emission (30MHz – 1GHz)

Note: The test data in the graph includes two polarizations: horizontal and vertical



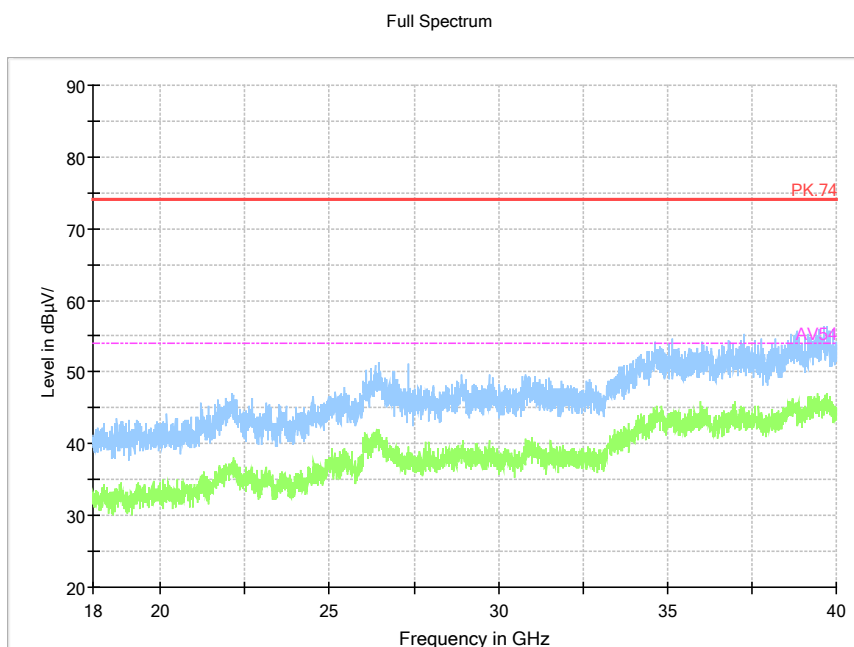
Pic20. Radiated emission (1GHz –6GHz)

Note: The test data in the graph includes two polarizations: horizontal and vertical



Pic21. Radiated emission (6GHz –18GHz)

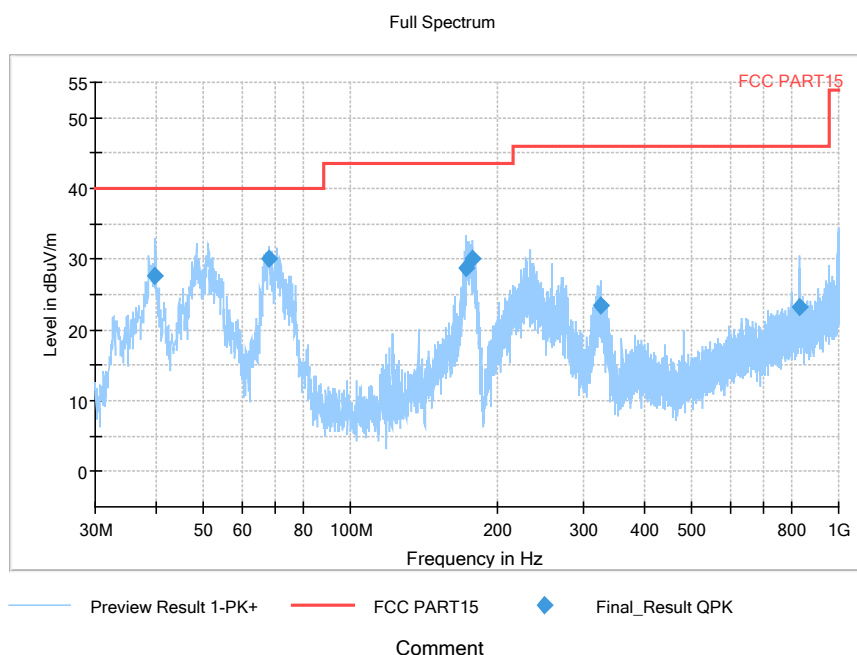
Note: The test data in the graph includes two polarizations: horizontal and vertical



Pic22. Radiated emission (18GHz –40GHz)

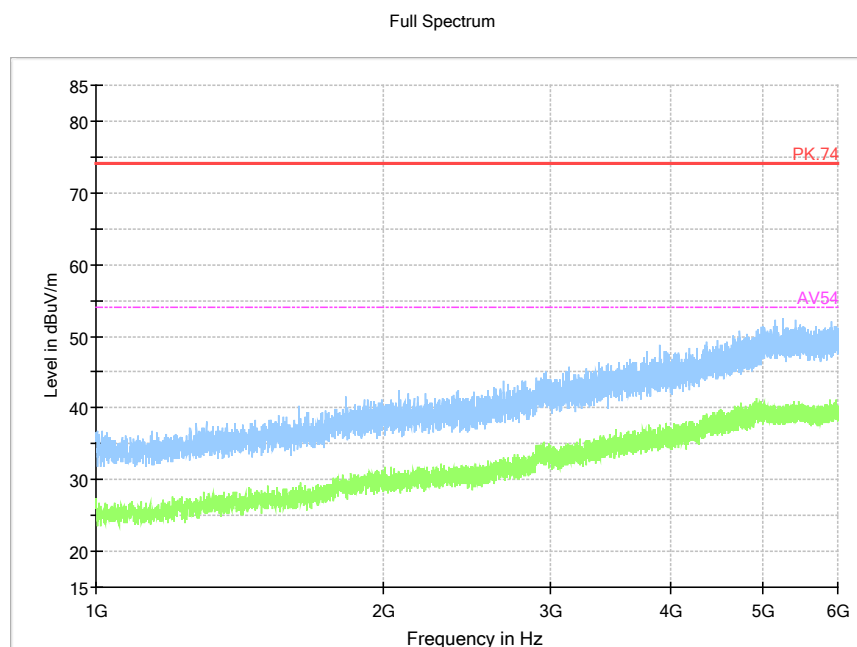
Note: The test data in the graph includes two polarizations: horizontal and vertical

EUT2 + 8#USB Cable1+6#Battery1+11# Laptop 1: refer to Pic23 to Pic26



Pic23. Radiated emission (30MHz – 1GHz)

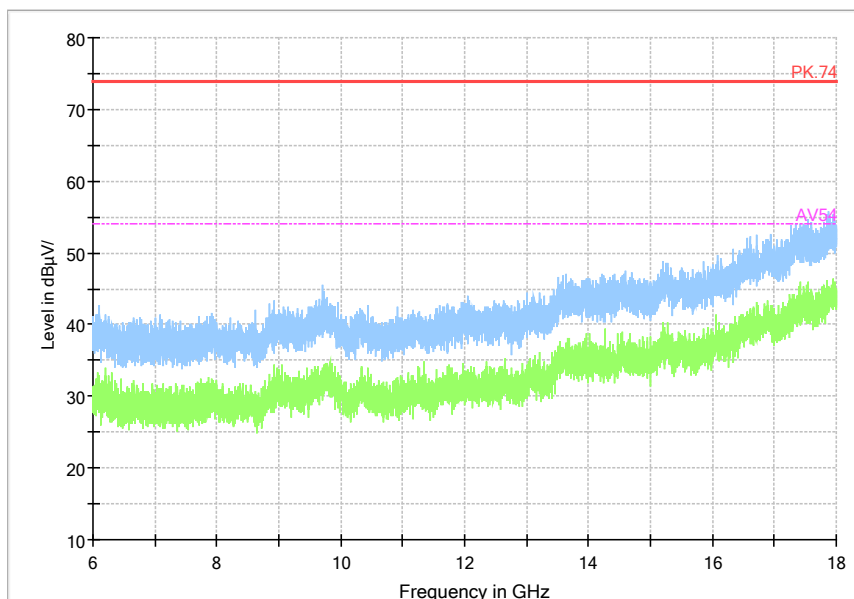
Note: The test data in the graph includes two polarizations: horizontal and vertical



Pic24. Radiated emission (1GHz – 6GHz)

Note: The test data in the graph includes two polarizations: horizontal and vertical

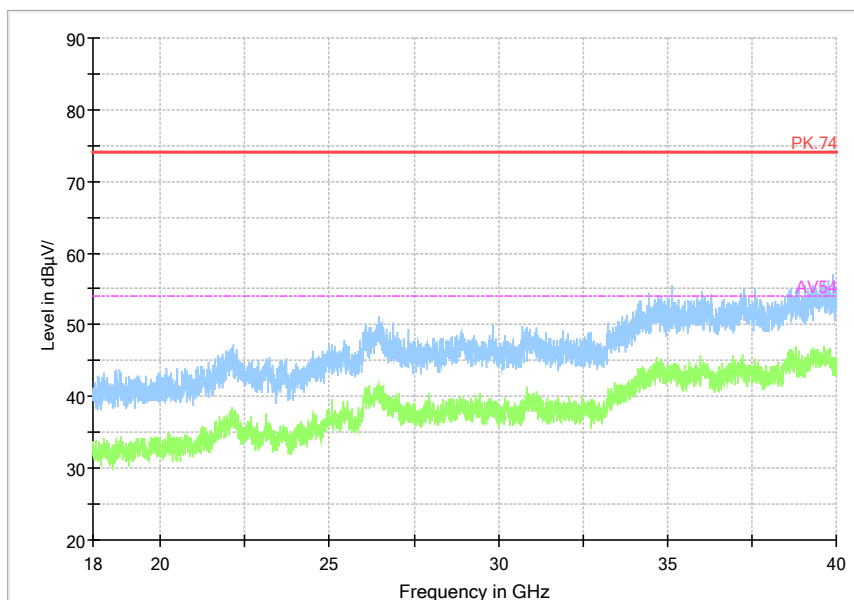
Full Spectrum



Pic25. Radiated emission (6GHz –18GHz)

Note: The test data in the graph includes two polarizations: horizontal and vertical

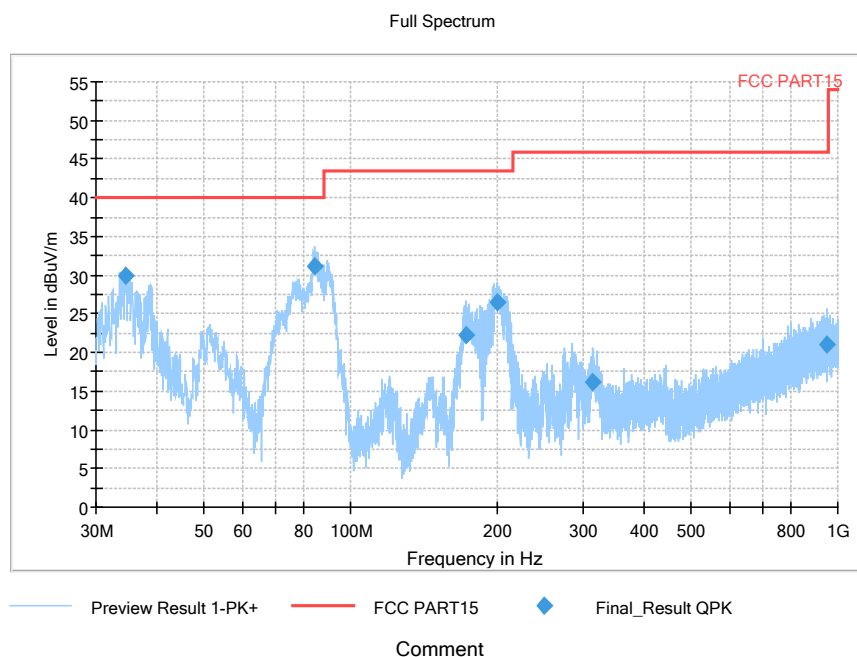
Full Spectrum



Pic26. Radiated emission (18GHz –40GHz)

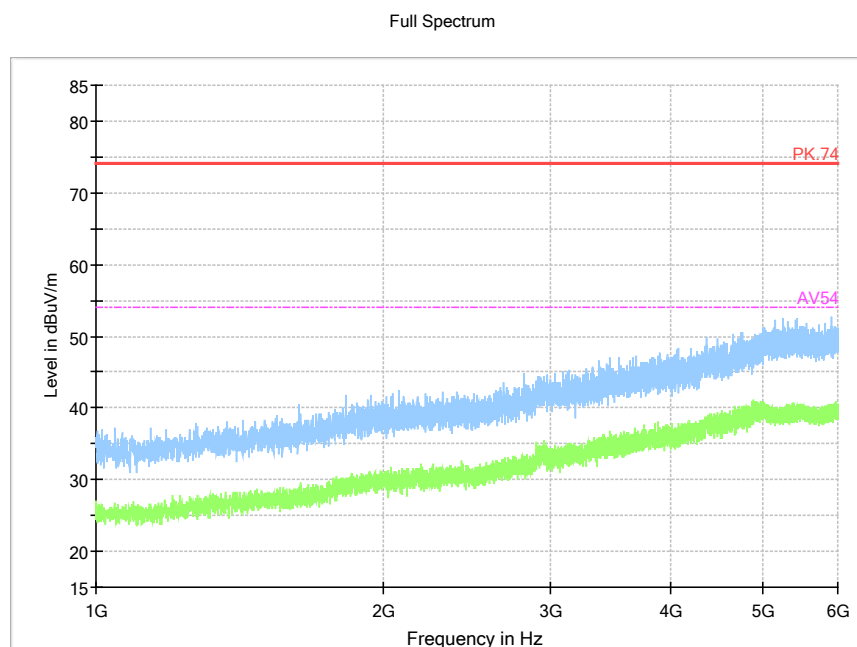
Note: The test data in the graph includes two polarizations: horizontal and vertical

EUT3 + 3#USB Cable1+2#Battery1+1#Charger1: refer to Pic27 to Pic830



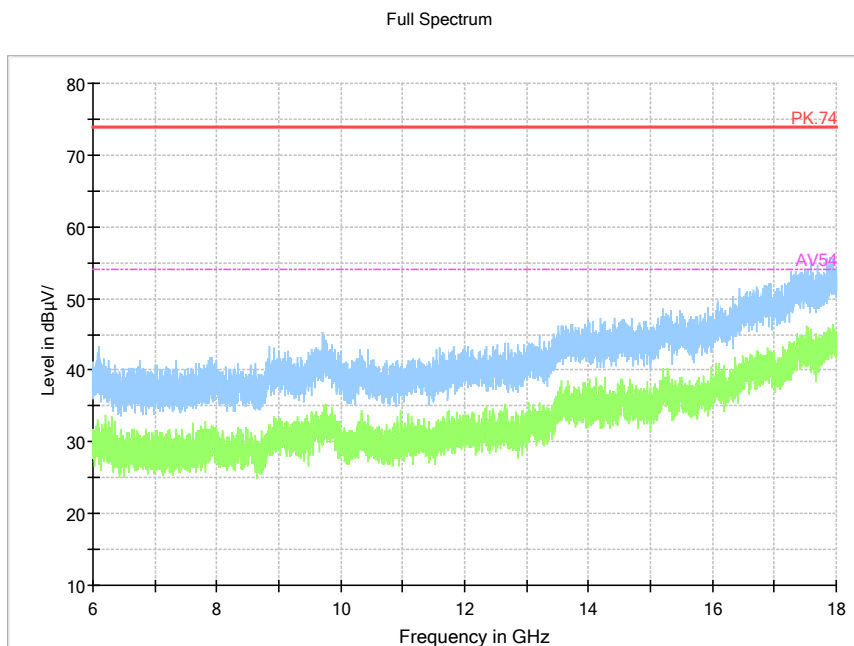
Pic27. Radiated emission (30MHz – 1GHz)

Note: The test data in the graph includes two polarizations: horizontal and vertical



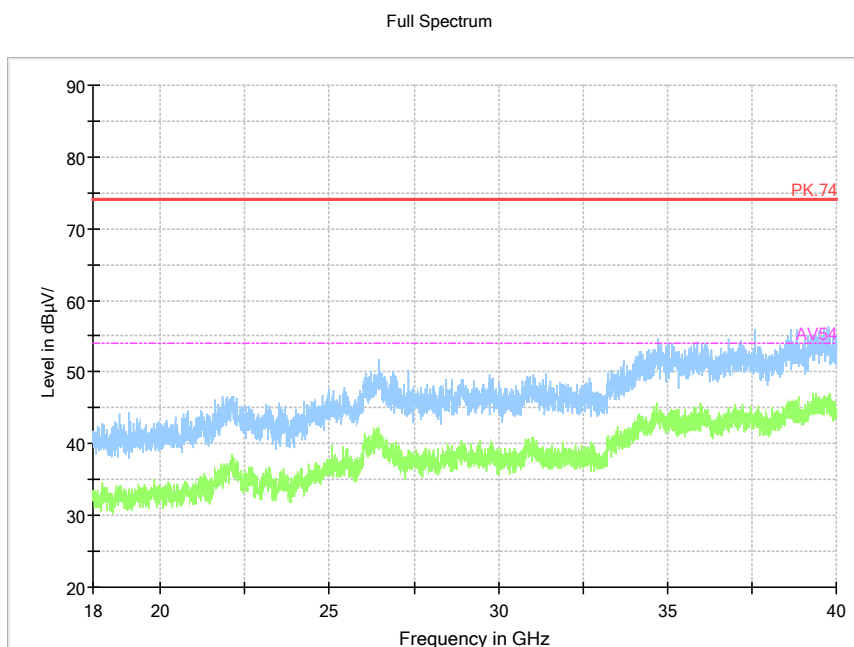
Pic28. Radiated emission (1GHz – 6GHz)

Note: The test data in the graph includes two polarizations: horizontal and vertical



Pic29. Radiated emission (6GHz –18GHz)

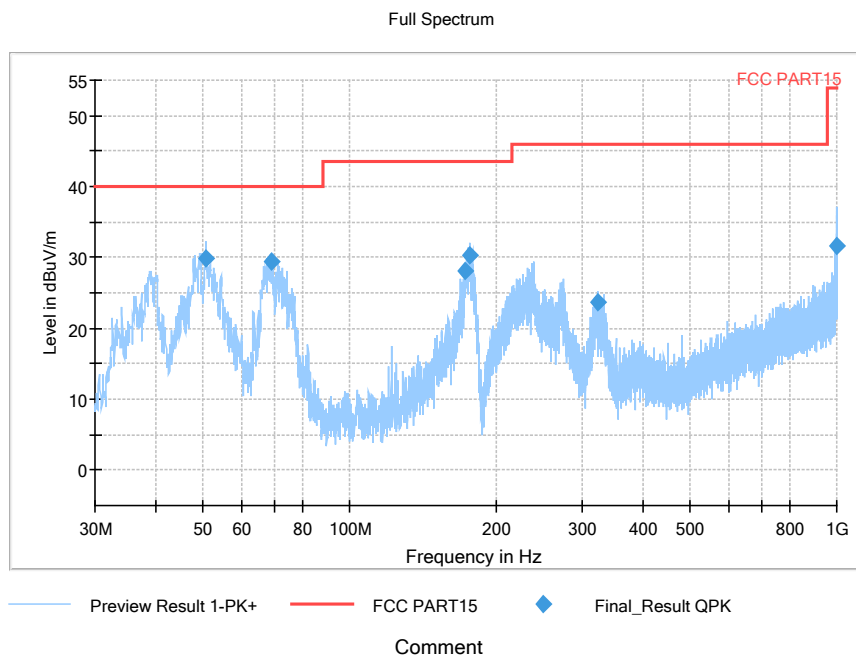
Note: The test data in the graph includes two polarizations: horizontal and vertical



Pic30. Radiated emission (18GHz –40GHz)

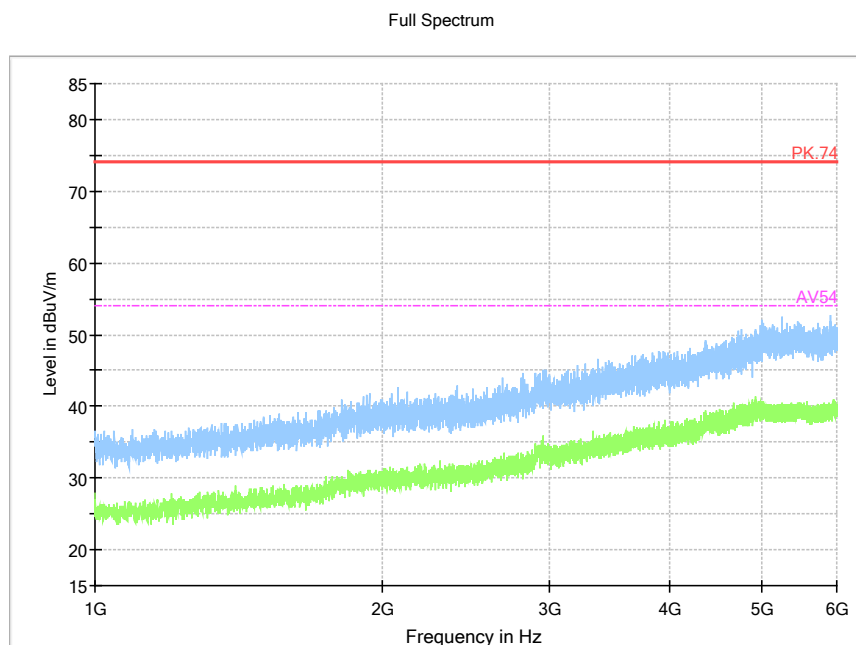
Note: The test data in the graph includes two polarizations: horizontal and vertical

EUT3 + 8#USB Cable1+6#Battery1+11# Laptop 1: refer to Pic31 to Pic34



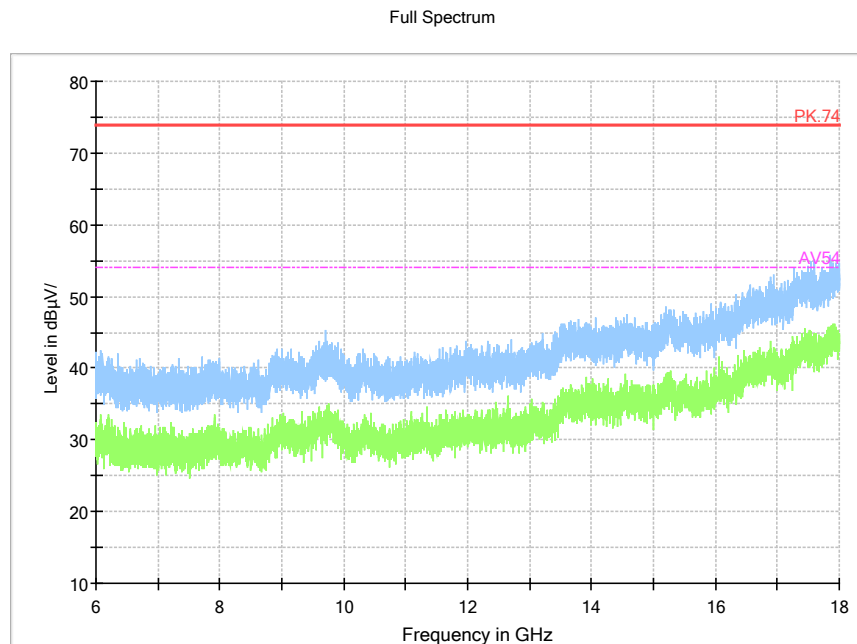
Pic31. Radiated emission (30MHz – 1GHz)

Note: The test data in the graph includes two polarizations: horizontal and vertical



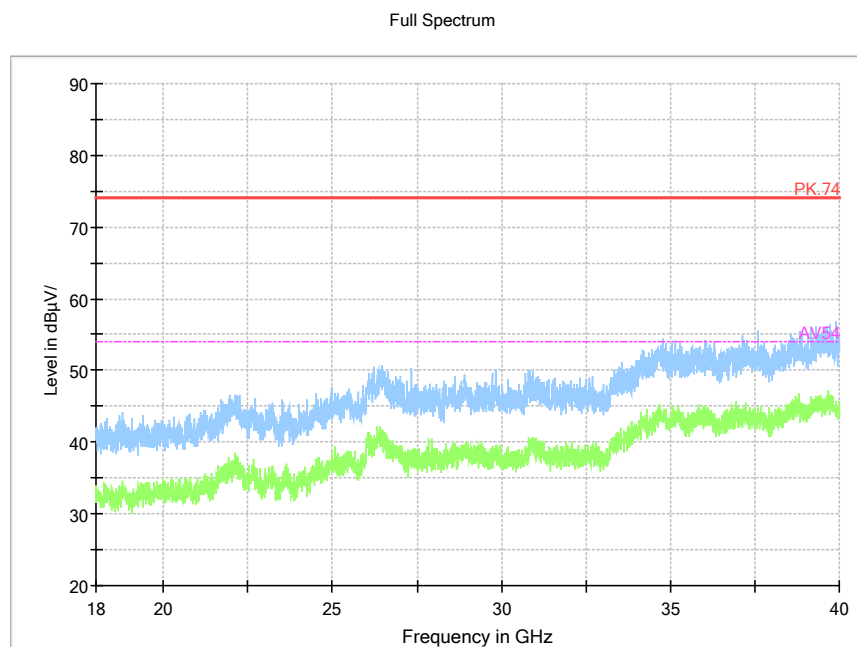
Pic32. Radiated emission (1GHz –6GHz)

Note: The test data in the graph includes two polarizations: horizontal and vertical



Pic33. Radiated emission (6GHz –18GHz)

Note: The test data in the graph includes two polarizations: horizontal and vertical



Pic34. Radiated emission (18GHz –40GHz)

Note: The test data in the graph includes two polarizations: horizontal and vertical

2.3. List of test equipments

No.	Name/Model	Manufacturer	S/N	Calibration Due Date	Calibration Date
1	23.18m×16.88m×9.60mS emi-AnechoicChamber	FRANKONIA	-----	2023.11.15	2018.11.16
2	ESW EMI test receiver	R&S	101574	2024.3.5	2023.3.6
3	ESR3 EMI test receiver	R&S	102361	2024.3.5	2023.3.6
4	9.080m×5.255m×3.525m Shielding room	FRANKONIA	-----	2023.09.05	2018.09.06
5	VULB 9163 Ultra log test antenna	schwarzbeck	727	2024.05.27	2023.05.28
6	HF 907 Double-Ridged Waveguide Horn Antenna	R&S	100512	2024.04.11	2023.04.12
7	SAS-574 Horn Antenna	schwarzbeck	535	2024.04.11	2023.04.12
8	ENV216 AMN	R&S	3560.6550. 12	2024.06.19	2023.06.20
9	EMC32EMI test software	R&S	-----	-----	-----

-----The end-----