Certificate Number: 5055.02

TEST REPORT

Report No.:	SRTC2022-9003(F)-0063
Model Name:	RKY-LX3
Applicant:	Honor Device Co., Ltd.
Manufacturer:	Honor Device Co., Ltd.
Specification:	FCC Part15B (Certification) (2022 edition)
	ANSI C63.4-2014
FCC ID:	2AYGCRKY-LX3

The State Radio_monitoring_center Testing Center (SRTC)

15th Building, No.30 Shixing Street, Shijingshan District,

Beijing, China

Tel: 86-10-57996183 Fax: 86-10-57996388

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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)
Address:	15th Building, No.30 Shixing Street, Shijingshan District
Testing location：	No.80, Zhaojiachang, BeizangCun, Daxing District, Beijing, China.
City:	Beijing
Country or Region:	China
Contacted person:	Liu Jia
Tel:	+86 10 57996183
Fax:	+86 10 57996388
Email:	liujiaf@srtc.org.cn

1.3 Applicant’s details

Company:	Honor Device Co., Ltd.
Address:	Shum Yip Sky Park, No. 8089, Hongli West Road, Shenzhen, China
Contacted person:	---
Tel:	---
Email:	---

1.4 Manufacturer’s details

Company:	Honor Device Co., Ltd.
Address:	Shum Yip Sky Park, No. 8089, Hongli West Road, Shenzhen, China
Contacted person:	---
Tel:	---
Email:	---

1.5 Application details

Date of reception of test sample: 17th October 2022
Date of test: 17th November 2022 to 28th October 2022

1.6 Reference specification

FCC Part 15B, 2020 (Certification)

1.7 Information of EUT

1.7.1 General information

Model Name of EUT	RKY-LX3
FCC ID	2AYGCRKY-LX3
Frequency Range	GSM: GSM850 / DCS1900 WCDMA: FDD II/ FDD IV / FDD V LTE: FDD 2/ FDD 4/ FDD 5/FDD 7/ FDD 13/ FDD 26/ FDD 66/TDD 38 Bluetooth: 2.4~2.4835GHz WiFi: 2.4~2.4835GHz 5.15-5.25GHz 5.25-5.35GHz 5.475-5.725GHz 5.725GHz-5.85GHz FM：87MHz-108MHz
Nominal Voltage	3.8V
Power Supply	Charger/Battery
Extreme Temperature	Lowest: 0°C Highest: +35°C
Extreme Voltage	Minimum: 3.6V Maximum: 4.36V
HW Version	HL1RKYM
SW Version	2.1.0.34(SP10C900E34R1P1)

1.7.2 EUT details

No.	Model Name	IMEI
EUT1	RKY-LX3	860349060025327

1.7.3 Auxiliary equipment details

AE (Auxiliary Equipment) 1#:Charger1

Manufacturer	Huntkey
Model Number	HW-100225E00
Input Voltage	100V-240V AC
Output Voltage	5Vdc2A OR 9Vdc2A OR 10Vdc2.25A

AE (Auxiliary Equipment) 2#:Charger2

Manufacturer	Huntkey
Model Number	HW-100225B00
Input Voltage	100V-240V AC
Output Voltage	5Vdc2A OR 9Vdc2A OR 10Vdc2.25A

AE (Auxiliary Equipment) 3#:Charger3

Manufacturer	Huntkey
Model Number	HW-100225U00
Input Voltage	100V-240V AC
Output Voltage	5Vdc2A OR 9Vdc2A OR 10Vdc2.25A

AE (Auxiliary Equipment) 4#:Charger4

Manufacturer	Huntkey
Model Number	HN-100225E00
Input Voltage	100V-240V AC
Output Voltage	5Vdc2A OR 9Vdc2A OR 10Vdc2.25A

AE (Auxiliary Equipment) 5#:Charger5

Manufacturer	Huntkey
Model Number	HN-100225B00
Input Voltage	100V-240V AC
Output Voltage	5Vdc2A OR 9Vdc2A OR 10Vdc2.25A

AE (Auxiliary Equipment) 6#:Charger6

Manufacturer	Huntkey
Model Number	HN-100225U00
Input Voltage	100V-240V AC
Output Voltage	5Vdc2A OR 9Vdc2A OR 10Vdc2.25A

AE (Auxiliary Equipment) 7#:Charger7

Manufacturer	Salcomp
Model Number	HN-100225E00
Input Voltage	100V-240V AC
Output Voltage	5Vdc2A OR 9Vdc2A OR 10Vdc2.25A

AE (Auxiliary Equipment) 8#:Charger8

Manufacturer	Salcomp
Model Number	HN-100225B00
Input Voltage	100V-240V AC
Output Voltage	5Vdc2A OR 9Vdc2A OR 10Vdc2.25A

AE (Auxiliary Equipment) 9#:Charger9

Manufacturer	Salcomp
Model Number	HN-100225U00
Input Voltage	100V-240V AC
Output Voltage	5Vdc2A OR 9Vdc2A OR 10Vdc2.25A

AE (Auxiliary Equipment) 10#: Battery1

Manufacturer	Sunwoda
Model Number	HB5066A1EGW-A

AE (Auxiliary Equipment) 11#: Battery2

Manufacturer	NVT
Model Number	HB5066A1EGW-A

AE (Auxiliary Equipment) 12#: Headset1

Manufacturer	Lianchuang
Model Number	MEND1532B528A11

AE (Auxiliary Equipment) 13#: Headset2

Manufacturer	Quancheng
Model Number	1293-3283-3.5mm-339

AE (Auxiliary Equipment) 14#: USB cable1

Manufacturer	FREEPORT JI AN ELECTRONICS CO., Ltd.
Model Number	04072295

AE (Auxiliary Equipment) 15#: USB cable2

Manufacturer	GUANGXI BROAD TELECOMMUNICATION CO., Ltd.
Model Number	04072295

AE (Auxiliary Equipment) 16#: USB cable3

Manufacturer	LUXSHARE PRECISION INDUSTRY CO., Ltd.
Model Number	04072295

AE (Auxiliary Equipment) 17#: USB cable4

Manufacturer	GUANGDONG MINGJI HI-TECH ELECTRONICS CO., Ltd.
Model Number	04072295

AE (Auxiliary Equipment) 18#: USB cable5

Manufacturer	FUYU ELECTRONICAL TECHNOLOGY(HUAIAN)CO., Ltd.
Model Number	04072295

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 exercised by the charger AE3, the Battery AE10, the Headset AE12 and the USB cable AE14.

1.7.4 Test mode

Mode No.	Description of test mode
Mode 1	Rear camera on + GNSS RX + GSM/WCDMA/LTE/BT/WLAN receiver + FM receiver
Mode 2	Front camera on + GNSS RX + GSM/WCDMA/LTE/BT/WLAN receiver + FM receiver
Mode 3	USB copy(EUT with PC)
Mode 4	Mp4 + GNSS RX + GSM/WCDMA/LTE/BT/WLAN receiver
Mode 5	Mp3 + GNSS RX + GSM/WCDMA/LTE/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. Guo Yu Vice director of the test department	Checked By: Mr. Liu Jian
Tested By: Mr. Lv Youyou	Issued date: 2022.10.28

2.2 Test result

2.2.1 Conducted Emissions-FCC Part15.107

Ambient condition:

Temperature	Relative humidity	Pressure
24.5°C	37.4%	100.8kPa

Test Setup with charger:

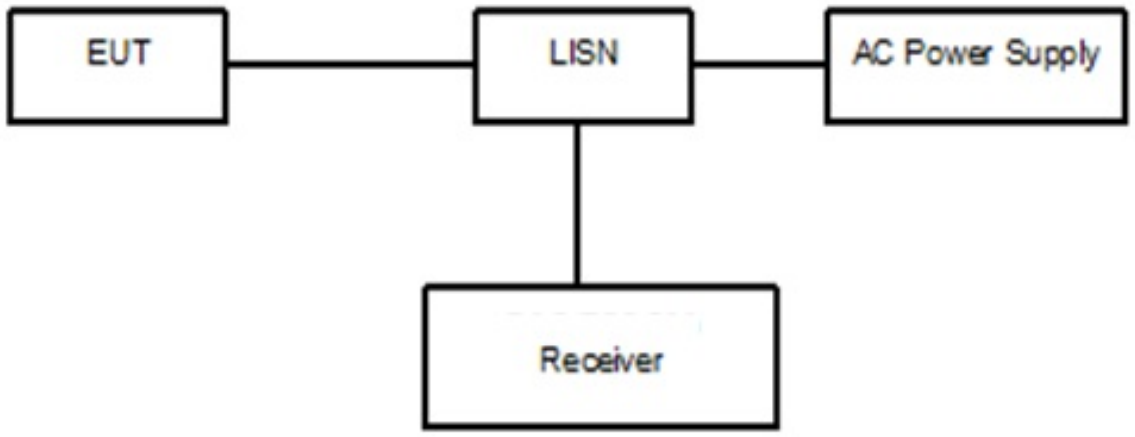


Figure 1

Test Procedure:

The EUT is placed on a non-matellic 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:

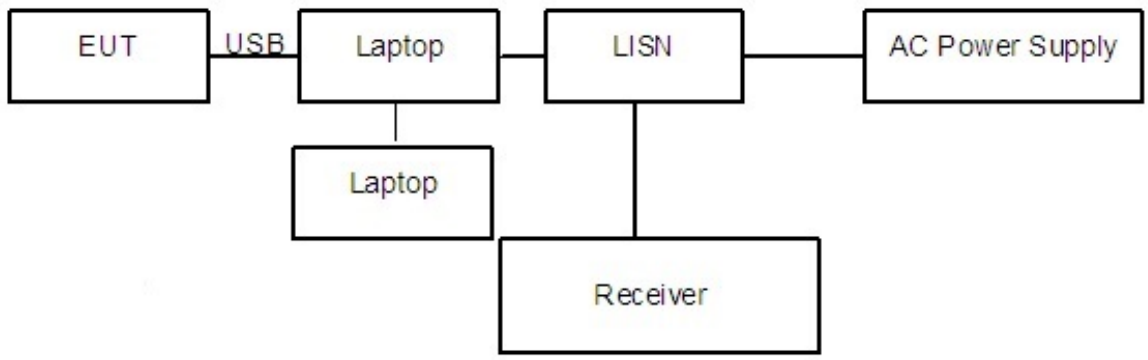


Figure 2

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_{cable}+ATT+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:
$P_{result}=P_{mea}$+Corr.(dB)
Sample calculation: (45.93dBμV) = (16.23 dBμV) + (29.7 dB), the corresponding frequency is 0.162793MHz.

Limit:

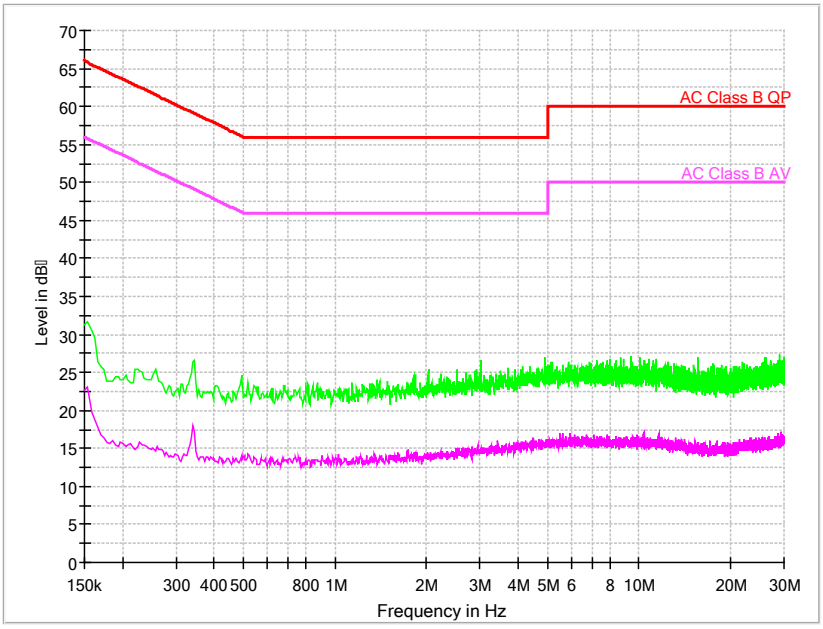
Frequency of Emission(MHz)	Limits(dBμV)	
	Quasi-peak	Average
0.15～0.5	66 to 56*	56 to 46*
0.5～5	56	46
5～30	60	50

Note: * Decreases with the logarithm of the frequency

Uncertainty
Quasi-peak: 3.92dB
Average: 3.92dB

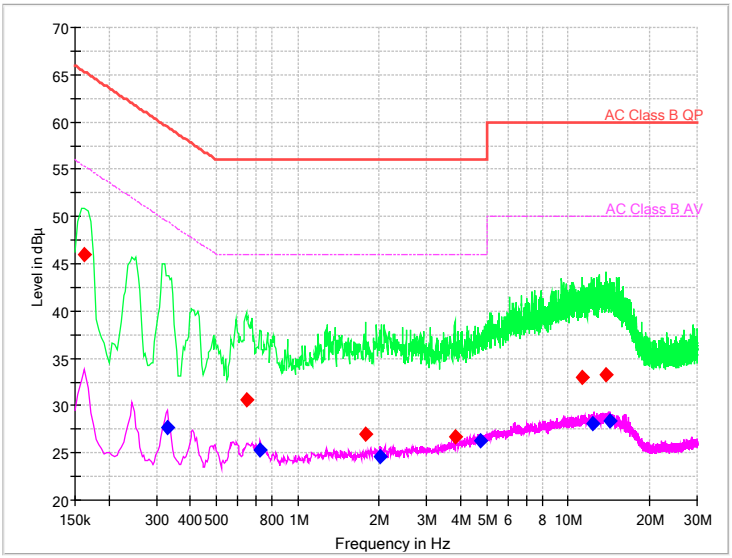
Test result:

Noise Level of the Measuring Instrument



Pic1.Conducted emission L and N Line

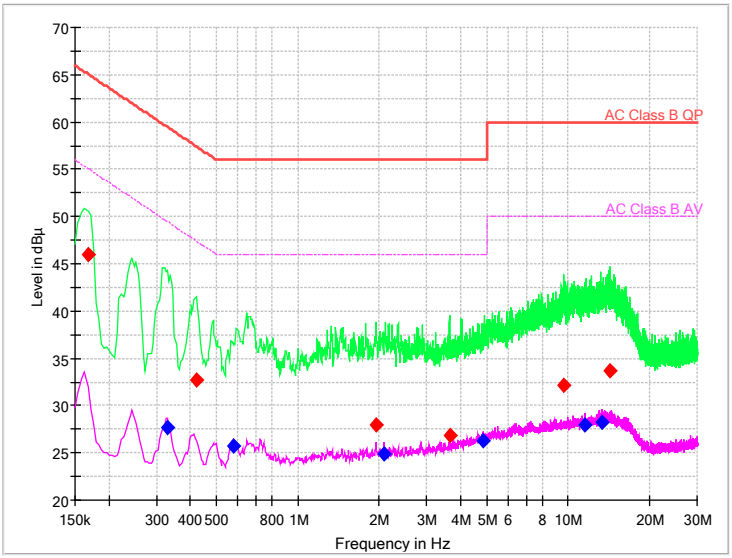
EUT1+charger3:



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)
0.162793	45.93	---	65.32	19.39	L1	29.7	16.23	---
0.644657	30.56	---	56.00	25.44	N	29.7	0.86	---
1.783221	26.97	---	56.00	29.03	L1	29.8	-2.83	---
3.808757	26.69	---	56.00	29.31	N	29.8	-3.11	---
11.313900	32.98	---	60.00	27.02	L1	29.9	3.08	---
13.846886	33.32	---	60.00	26.68	L1	29.9	3.42	---
0.329100	---	27.74	49.47	21.73	L1	29.7	---	-1.96
0.725679	---	25.30	46.00	20.70	N	29.7	---	-4.4
2.022021	---	24.64	46.00	21.36	L1	29.8	---	-5.16
4.738371	---	26.24	46.00	19.76	N	29.8	---	-3.56
12.277629	---	28.04	50.00	21.96	L1	29.9	---	-1.86
14.320221	---	28.43	50.00	21.57	L1	29.9	---	-1.47

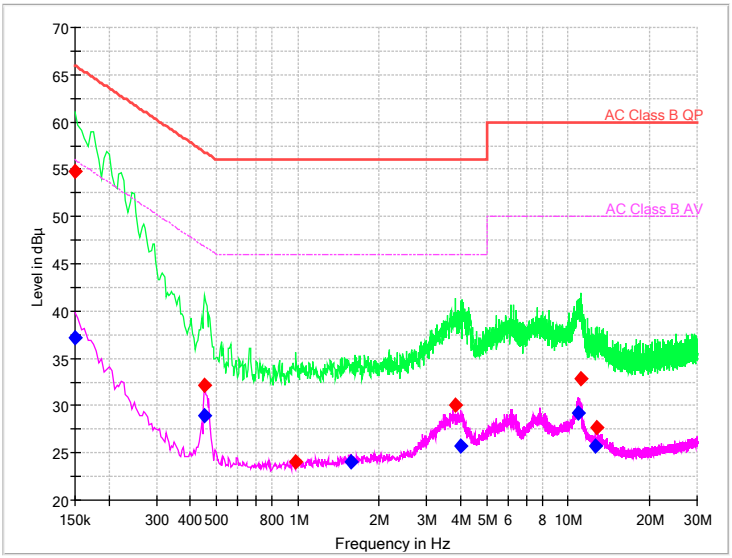
EUT1+charger3:



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)
0.167057	45.91	---	65.11	19.20	L1	29.7	16.21	---
0.422914	32.73	---	57.39	24.66	L1	29.7	3.03	---
1.945264	28.03	---	56.00	27.97	L1	29.8	-1.77	---
3.642450	26.86	---	56.00	29.14	N	29.8	-2.94	---
9.620979	32.19	---	60.00	27.81	L1	29.9	2.29	---
14.243464	33.74	---	60.00	26.26	N	29.9	3.84	---
0.329100	---	27.71	49.47	21.76	N	29.7	---	-1.99
0.580693	---	25.73	46.00	20.27	L1	29.7	---	-3.97
2.090250	---	24.94	46.00	21.06	L1	29.8	---	-4.86
4.849243	---	26.25	46.00	19.75	N	29.8	---	-3.55
11.488736	---	27.95	50.00	22.05	N	29.9	---	-1.95
13.343700	---	28.28	50.00	21.72	N	29.9	---	-1.62

EUT1+Laptop:



Pic4. Conducted emission L&N Line

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	Pmea Quasi	Pmea Aver
0.150000	54.73	---	66.00	11.27	N	29.7	25.0	---
0.452764	32.18	---	56.82	24.64	N	29.7	2.48	---
0.981536	24.04	---	56.00	31.96	L1	29.8	-5.76	---
3.838607	30.05	---	56.00	25.95	N	29.8	0.25	---
11.087893	32.85	---	60.00	27.15	N	29.9	2.95	---
12.793607	27.68	---	60.00	32.32	N	29.9	-2.22	---
0.150000	---	37.24	56.00	18.76	N	29.7	---	7.54
0.452764	---	28.99	46.82	17.83	N	29.7	---	-0.71
1.574271	---	24.03	46.00	21.97	N	29.8	---	-5.77
4.009179	---	25.76	46.00	20.24	L1	29.8	---	-4.04
10.917321	---	29.16	50.00	20.84	L1	29.9	---	-0.74
12.678471	---	25.75	50.00	24.25	L1	29.9	---	-4.15

2.2.2 Radiated Emissions-FCC Part15.109

Ambient condition:

Temperature	Relative humidity	Pressure
24.8°C	39.5%	100.7kPa

Test Setup:

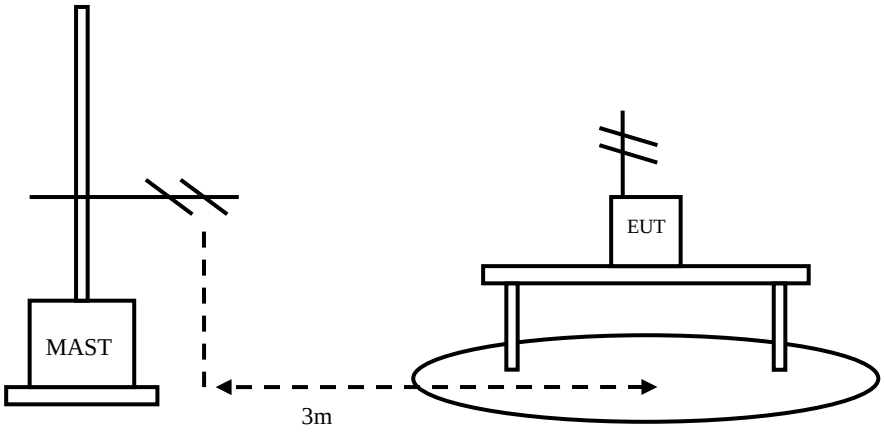


Figure 3

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 to4 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: 30MHz<f<1GHz

RBW=1MHz, VBW=3MHz, when the test frequency: f>1GHz

EUT+Laptop:
The EUT should be placed on a non-metallic table80cm 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 to4 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:
Result= $P_{mea} + A_{Rpl}$
Sample calculation: (14.51 dBμV/m) = (32.31 dBμV) + (-17.8dB/m), the corresponding frequency is 46.781000MHz.

Limit:

Frequency of Emission(MHz)	Limits	
	Detector	Unit (dBμV/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 Peak	54 74

Uncertainty
30MHz～1000MHz 4.73dB
1000MHz～26000MHz 4.58dB

Test result:

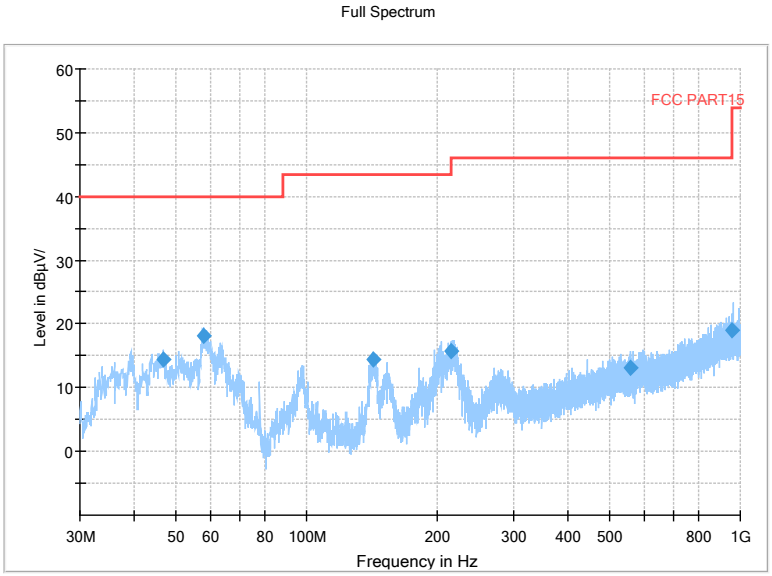
EUT1+charger3:

Frequency (MHz)	Result (dBuV/m)	Limit (dBµV/m)	Margin (dB)	ARpl (dB/m)	Pmea (dBuV)	Polarity
46.781000	14.51	40.00	25.49	-17.8	32.31	V
57.984500	18.11	40.00	21.89	-18.6	36.71	V
142.714000	14.48	43.50	29.02	-22.7	37.18	V
215.997500	15.77	43.50	27.73	-18.5	34.27	V
556.273500	13.04	46.00	32.96	-9.5	22.54	V
954.652500	18.94	46.00	27.06	-2.7	21.64	V

EUT1+Laptop:

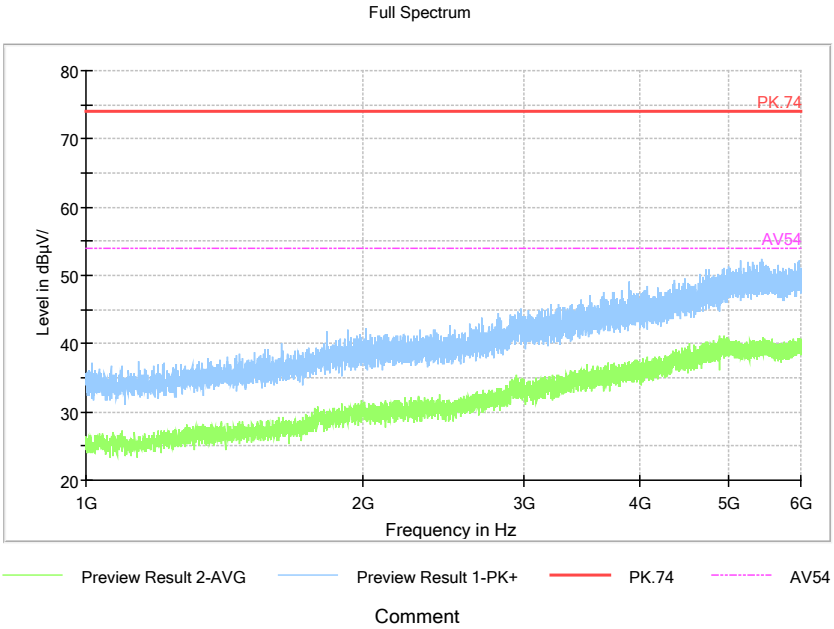
Frequency (MHz)	Result (dBuV/m)	Limit (dBµV/m)	Margin (dB)	ARpl (dB/m)	Pmea (dBuV)	Polarity
50.564000	9.70	40.00	30.30	-17.6	27.30	V
56.675000	5.73	40.00	34.27	-18.4	24.13	V
167.982500	17.88	43.50	25.62	-21.8	39.68	V
215.949000	17.81	43.50	25.69	-18.5	36.31	V
359.994000	29.21	46.00	16.79	-14.1	43.31	V
600.020500	22.53	46.00	23.47	-8.1	30.63	V

EUT1+charger3: refer to Pic5 to Pic8



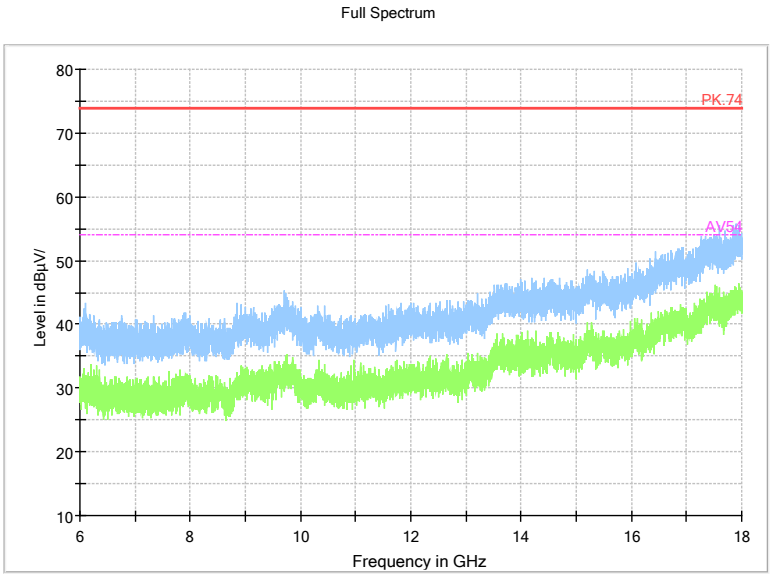
Pic5. Radiated emission (30MHz – 1GHz)

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



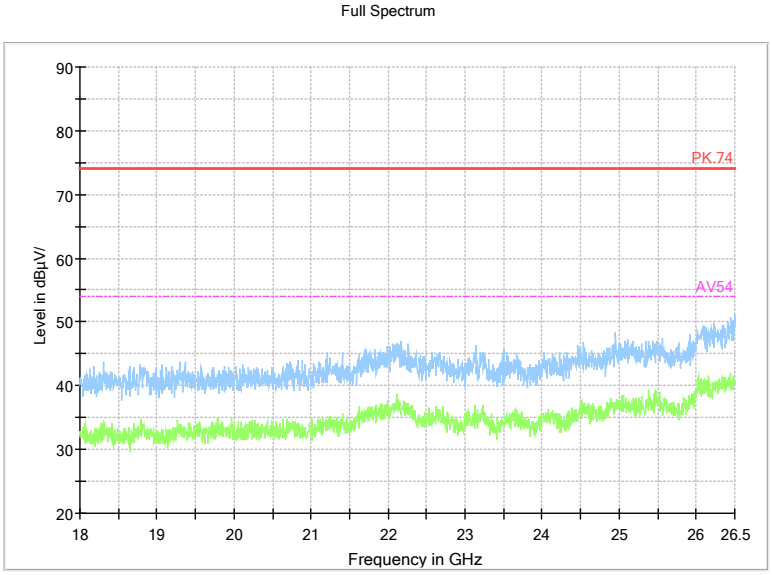
Pic6. Radiated emission (1GHz –6GHz)

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



Pic7. Radiated emission (6GHz –18GHz)

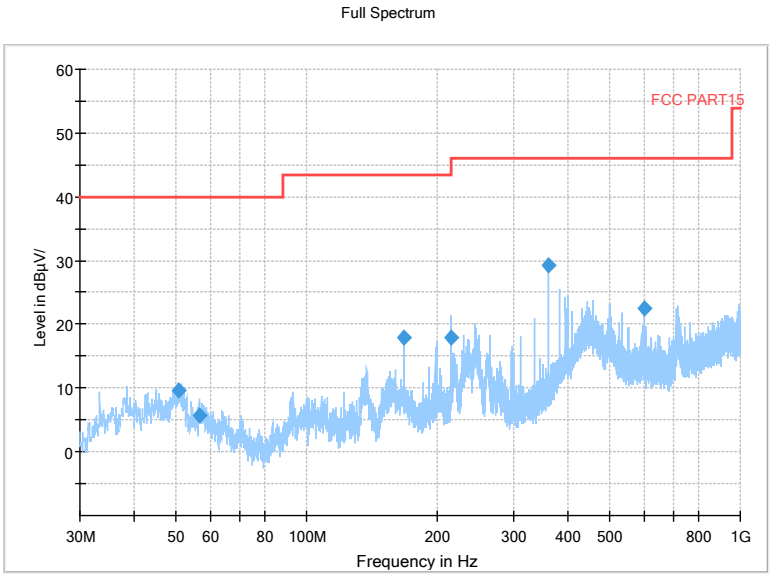
Note：The test data in the graph includes two polarizations: horizontal and vertical



Pic8. Radiated emission (18GHz –26GHz)

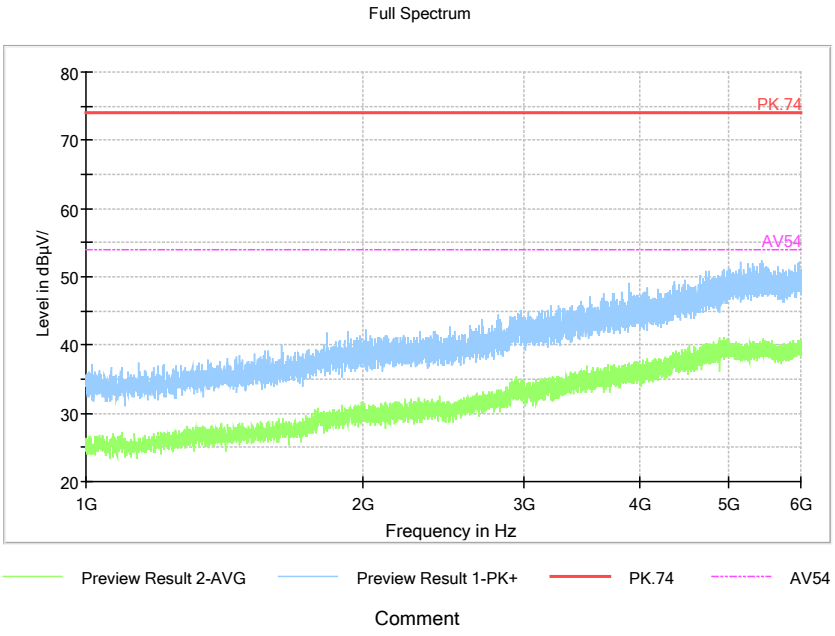
Note：The test data in the graph includes two polarizations: horizontal and vertical

EUT1+ Laptop: refer to Pic9 to Pic12



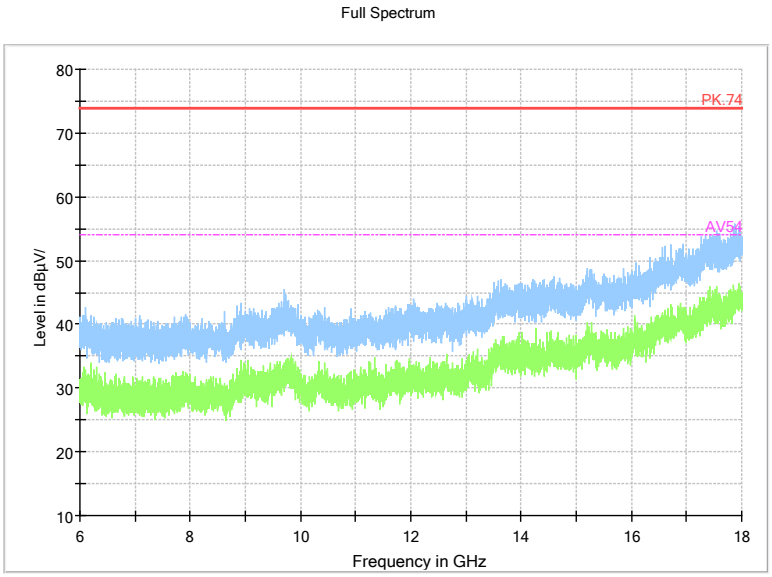
Pic9. Radiated emission (30MHz – 1GHz)

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



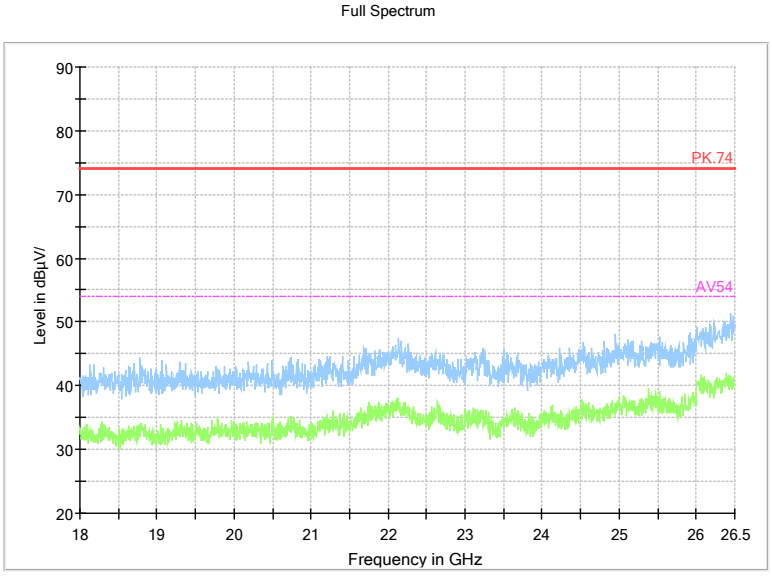
Pic10. Radiated emission (1GHz –6GHz)

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



Pic11. Radiated emission (6GHz –18GHz)

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



Pic12. Radiated emission (18GHz –26GHz)

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×9.60mSemi-AnechoicChamber	FRANKONIA	-----	2023.11.15	2018.11.16
2	ESW EMI test receiver	R&S	101574	2023.06.19	2022.06.20
3	ESR3 EMI test receiver	R&S	102361	2023.04.11	2022.04.12
4	9.080m×5.255m×3.525m Shielding room	FRANKONIA	-----	2023.09.05	2018.09.06
5	VULB 9163 Ultra log test antenna	schwarzbeck	867	2023.05.28	2021.05.29
6	HF 907 Double-Ridged Waveguide Horn Antenna	R&S	100512	2023.05.12	2021.05.13
7	SAS-574 Horn Antenna	schwarzbeck	535	2023.06.19	2021.06.20
8	ENV216 AMN	R&S	3560.6550.12	2023.06.19	2022.06.20
9	EMC32EMI test software	R&S	-----	-----	-----

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