



Registration
No.788871

TEST REPORT

Report No.: SRTC2019-9003(F)-0005
Product Name: Mobile Phone
Model Name: HLTE215E
Applicant: Hisense International Co., Ltd.
Manufacturer: Hisense Communications Co., Ltd.
Specification: FCC Part15B (Certification)
(2019 edition)
ANSI C63.4-2014
FCC ID: 2ADOBHLTE215E

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)
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
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1.3 Applicant's details

Company: Hisense International Co., Ltd.
Address: Floor 22, Hisense Tower, 17 Donghai Xi Road, Qingdao, 266071, China
City: Qingdao
Country or Region: China
Contacted person: Geng Ruifeng
Tel: +86-532-80877742
Fax: ---
Email: gengruifeng@hisense.com

1.4 Manufacturer's details

Company: Hisense Communications Co., Ltd.
Address: 218 Qianwangang Road, Qingdao Economic & Technological Development Zone, Qingdao, China
City: Qingdao
Country or Region: China
Contacted person: Zhangchuanzhu
Tel: +86-532-55756010
Email: zhangchuanzhu@hisense.com

1.5 Application details

Date of reception of test sample: 14th Feb 2019

Date of test: 14th Feb. 2019 to 26th Feb 2019

1.6 Reference specification

FCC Part 15B, 2019 (Certification)

1.7 Information of EUT

1.7.1 General information

Name of EUT	Hisense V8
FCC ID	2ADOBHLTE215E
Frequency Range	GSM850/WCDMA Band V/ LTE band V: Tx:824~849MHz Rx:869~894MHz PCS1900/WCDMA Band II/LTE band II: Tx:1850~1910MHz Rx:1930~1990MHz WCDMA BAND IV/LTE band IV: Tx: 1710 MHz – 1755 MHz Rx: 2110 MHz – 2155 MHz LTE band VII:Tx: 2500 MHz – 2570 MHz Rx: 2620 MHz – 2690 MHz LTE band XII:Tx: 699 MHz – 716 MHz Rx: 729 MHz – 746 MHz LTE band LXVI:Tx:1710 MHz – 1780 MHz Rx:2110 MHz – 2200 MHz Bluetooth /WiFi: 2.4~2.4835GHz (Support b/g/n) Bluetooth Version: 4.0+EDR+LE
Modulation Type	GSM/GPRS: GMSK EDGE:8PSK WCDMA:QPSK LTE:QPSK; 16QAM
Emission Designator	GSM/GPRS;EDGE;WCDMA;LTE
Duplex Mode	FDD
Equipment Class	Class B
Antenna Type	PIFA Antenna
Power Supply	Battery or Charger
Rated Power Supply Voltage	3.85V
Extreme Temperature	Lowest: 0°C Highest: +35°C

Extreme Voltage	Minimum: 3.5V Maximum: 4.4V
HW Version	V1.00
SW Version	L1592.6.01.00.00MX

1.7.2 EUT details

Product Name	Model Name	IMEI
Hisense V8	HLTE215E	8633750400075

1.7.3 Auxiliary equipment details

AE (Auxiliary Equipment) 1#: USB Cable

Manufacturer	SHENZHEN FKY-QY HARDWARE ELECTRONIC CO.,LTD
Model Number	FKYM1-2428L10WHR-C1

AE (Auxiliary Equipment) 2#: Battery

Type	Li-Ion
Manufacturer	Huizhou Highpower Technology Co., Ltd.
Model Number	LPN385300A
Capacity	3000mAh
Nominal Voltage	3.85V

AE (Auxiliary Equipment) 3#: Charger

Manufacturer	JIANGSU CHENYANG ELECTRON CO.,LTD
Model Number	CC10-050200U
S/N	811207494
Input Voltage	100V-240V AC
Frequency	50/60Hz

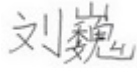

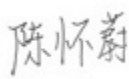
AE (Auxiliary Equipment) 4#: Headset

Manufacturer	NEW LEADER INDUSTRY CO.,LTD
Model Number	NLD-EM116T-046S

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 Chen Huaiwei 	Issued date: 2019.03.13

2.2 Test result

2.2.1 Conducted Emissions-FCC Part15.107

Ambient condition:

Temperature	Relative humidity	Pressure
24.3°C	33.5%	101.2kPa

Test Setup with laptop:

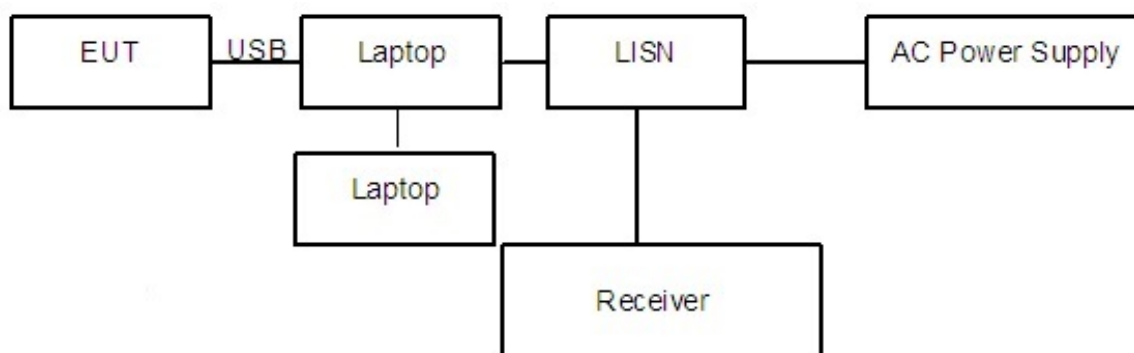


Figure 1

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 was charged. The laptop's LAN port is connected with another laptop via cable. And the data transferring between two laptops is maintained. The EUT copies large data (such as multiple movies) from the computer.

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 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 charger:

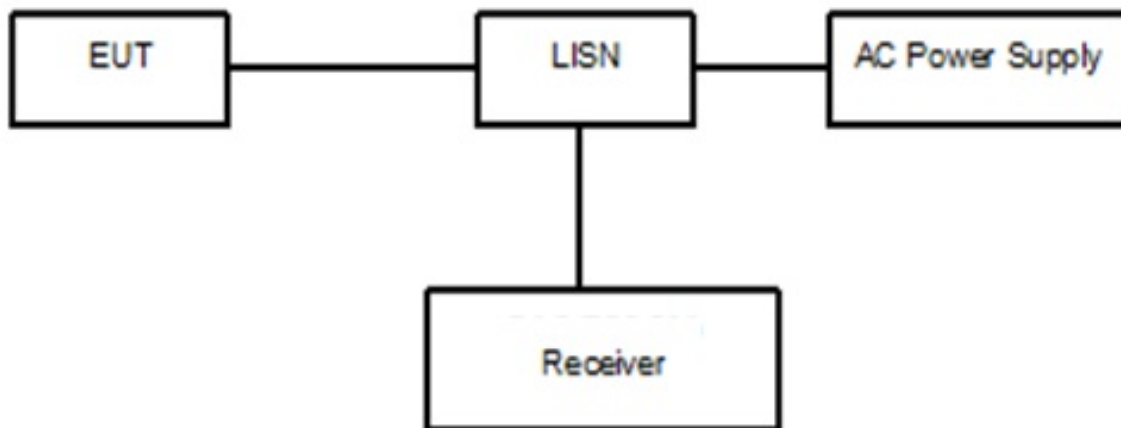


Figure 2

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. When performing the test, open the function of EUT: FM Receiver, FM, Camera and GPS.

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.

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: $(52.82 \text{ dB}\mu\text{V}) = (22.92 \text{ dB}\mu\text{V}) + (29.9 \text{ dB})$, the corresponding frequency is 0.190705MHz.

Frequency (MHz)	MaxPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr (dB)	Pmea MaxPeak (dBμV)	Pmea Average (dBμV)
0.190705	52.82	---	64.01	11.18	L1	29.9	22.92	---

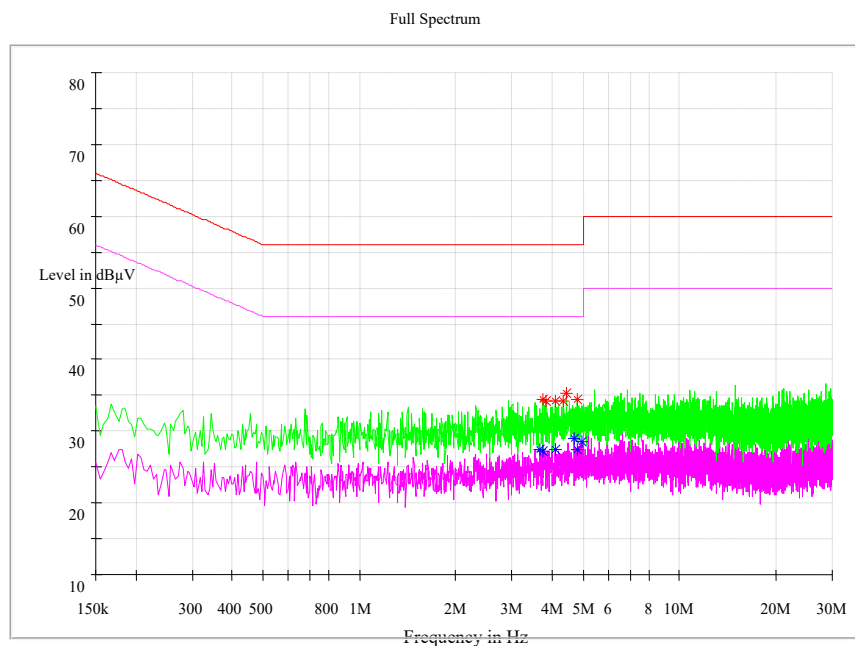
Limit:

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

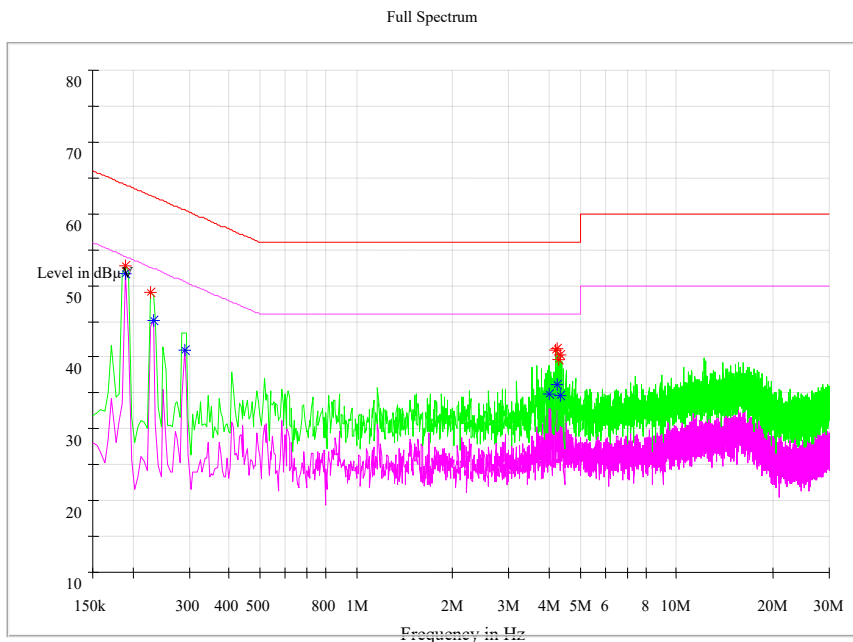
Test result:

Noise Level of the Measuring Instrument



Pic1. Conducted emission L and N Line

EUT+Laptop:

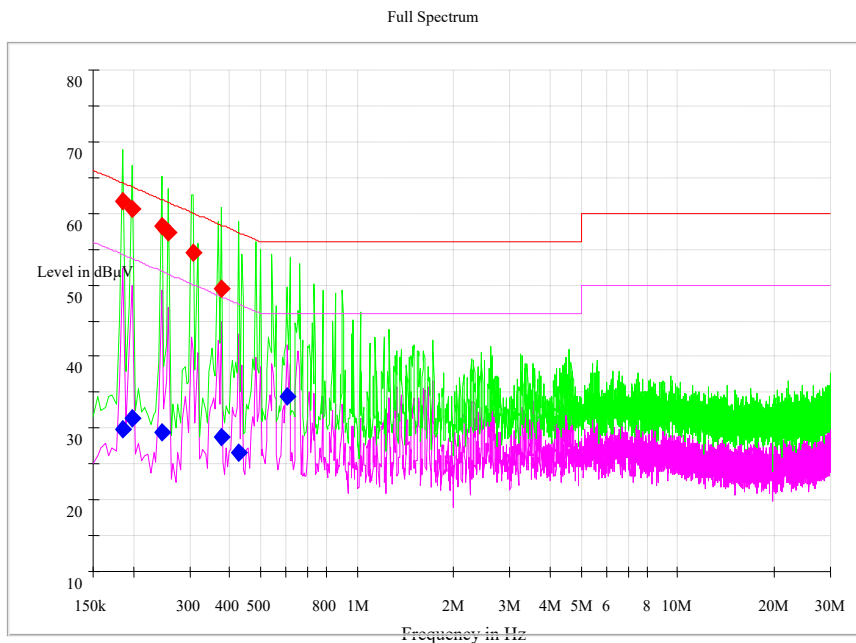


Pic2. Conducted emission L+N Line

MEASUREMENT RESULT:

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	Pmea MaxPeak (dBµ)	Pmea Average (dBµ)
0.190705	52.82	---	64.01	11.18	L1	29.9	22.92	---
0.190705	---	51.69	54.01	2.32	L1	29.9	---	21.79
4.021455	---	34.80	46.00	11.20	L1	29.9	---	4.9
4.234023	---	36.15	46.00	9.85	L1	29.9	---	6.25
4.238545	41.28	---	56.00	14.72	L1	29.9	11.38	---
0.226886	49.04	---	62.56	13.52	N	29.9	19.14	---
0.231409	---	45.14	52.40	7.26	N	29.9	---	15.24
0.290205	---	40.88	50.52	9.64	N	30.0	---	10.88
4.184273	40.87	---	56.00	15.13	N	29.9	10.97	---
4.279250	39.57	---	56.00	16.43	N	29.9	9.67	---
4.310909	40.40	---	56.00	15.60	N	29.9	10.5	---
4.310909	---	34.62	46.00	11.38	N	29.9	---	4.72

EUT+ charger



Pic3. Conducted emission L+N Line

MEASUREMENT RESULT:

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	Pmea Quasi Peak (dBµV)	Pmea Average (dBµV)
0.186182	---	29.94	54.21	24.26	L1	29.9	---	0.04
0.186182	61.63	---	64.21	2.58	L1	29.9	31.73	---
0.199750	---	31.31	53.62	22.31	L1	29.9	---	1.41
0.199750	60.64	---	63.62	2.98	L1	29.9	30.74	---
0.244977	---	29.38	51.93	22.55	L1	29.9	---	-0.52
0.244977	58.28	---	61.93	3.65	L1	29.9	28.38	---
0.258545	57.35	---	61.48	4.13	L1	29.9	27.45	---
0.308295	54.49	---	60.02	5.53	L1	30.0	24.49	---
0.376136	---	28.68	48.36	19.69	L1	30.0	---	-1.32
0.376136	49.39	---	58.36	8.97	L1	30.0	19.39	---
0.425886	---	26.68	47.33	20.65	N	30.0	---	-3.32
0.606795	---	34.45	46.00	11.55	N	30.0	---	4.45

2.2.2 Radiated Emissions-FCC Part15.109

Ambient condition:

Temperature	Relative humidity	Pressure
24.3°C	33.5%	101.2kPa

Test Setup:

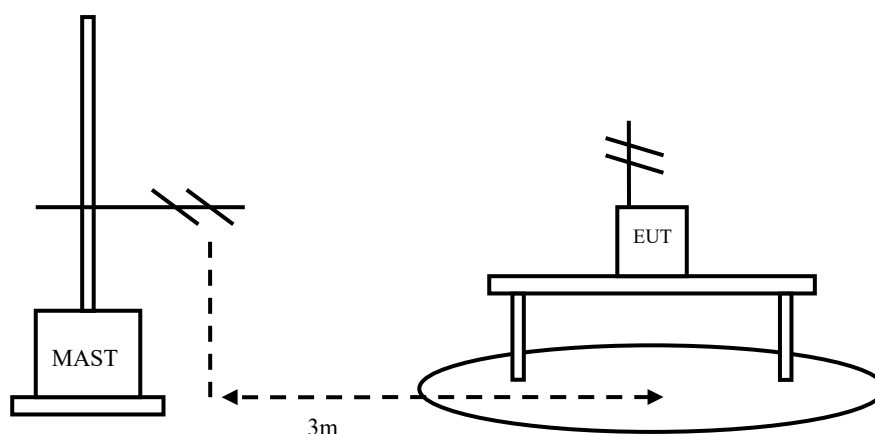


Figure 3

Test Procedure:

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 was charged. The laptop's LAN port is connected with another laptop via cable. And the data transferring between two laptops is maintained. The test set-up and the test methods are performed according to ANSI C63.4:2014. The EUT copies large data (such as multiple movies) from the computer.

Then start the test software EMC32. Sweep the whole frequency band through the range from 30MHz to 1GHz, using receive log period antenna HL562.

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.

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

Then start the test software EMC32. Sweep the whole frequency band through the range from 30MHz to 1GHz, using receive log period antenna HL562.

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: 30MHz<f<1GHz

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

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: (15.40 dB μ V/m) = (29.9 dBuV) + (-14.5 dB/m), the corresponding frequency is 55.785833MHz.

Frequency (MHz)	Result (dB μ V/m)	A_{Rpl} (dB/m)	P_{mea} (dBuV)	Polarity
55.785833	15.40	-14.5	29.9	V

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

Test result:

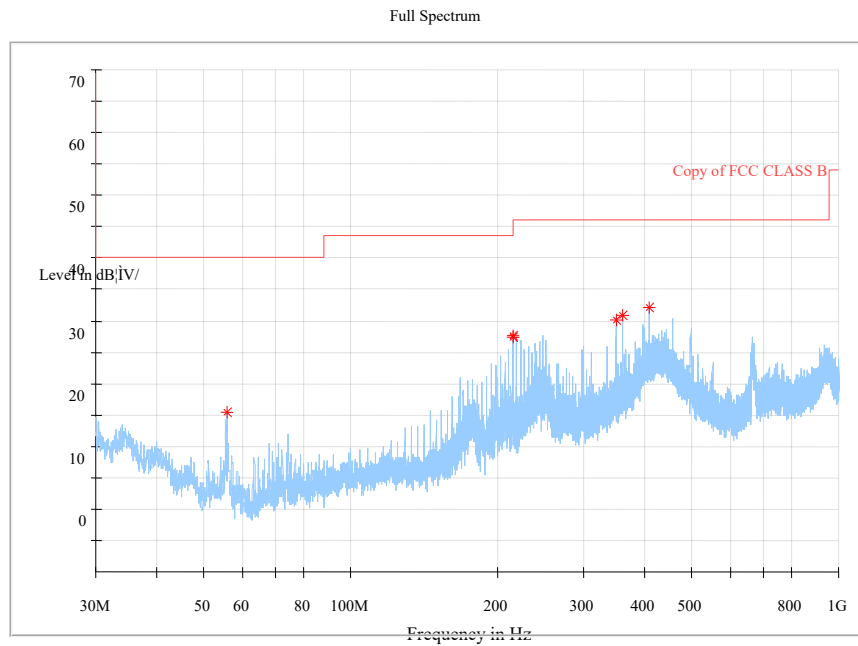
EUT+Laptop

Frequency (MHz)	Result (dBuV/m)	ARpl (dB/m)	Pmea (dBuV)	Polarity
55.785833	15.40	-14.5	29.9	V
215.027500	27.30	-15.7	43	V
215.997500	27.56	-16.2	43.76	H
351.433750	30.15	-12.4	42.55	V
360.002083	30.90	-14.2	45.1	V
407.976667	32.10	-17.9	50	V

EUT+ charger

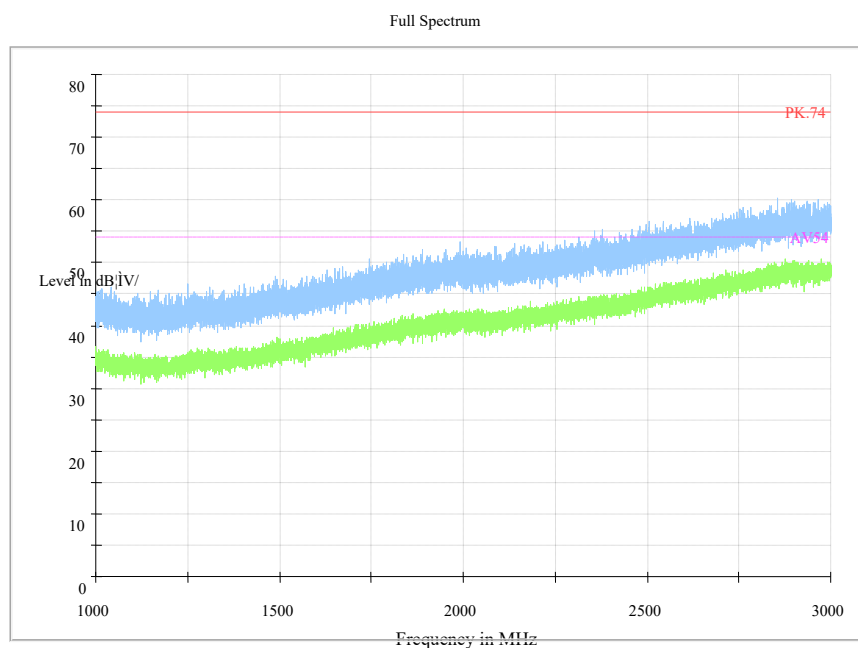
Frequency (MHz)	Result (dBuV/m)	ARpl (dB/m)	Pmea (dBuV)	Polarity
31.252917	30.45	-16.4	46.85	V
34.082083	29.41	-10.6	40.01	V
40.952917	20.91	-10.6	31.51	H
45.398750	20.59	-14.1	34.69	V
90.948333	24.13	-16.3	40.43	V
94.747500	23.96	-16.7	40.66	V

EUT+Laptop:



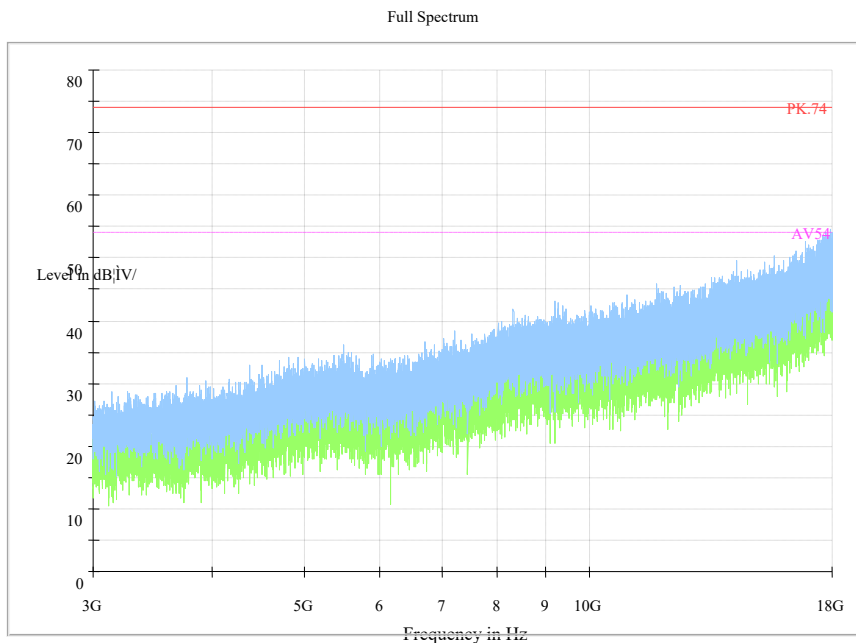
Pic4. Radiated emission(30 MHz – 1 GHz)

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



Pic5. Radiated emission (1 GHz – 3 GHz)

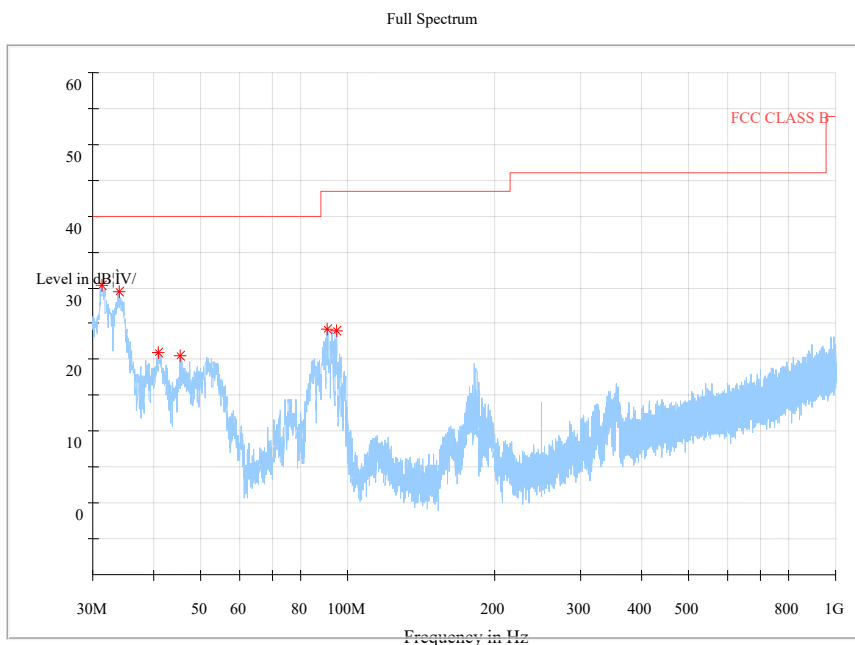
Note: The test data in the graph includes two polarizations: horizontal and vertical



Pic6. Radiated emission (3 GHz – 18 GHz)

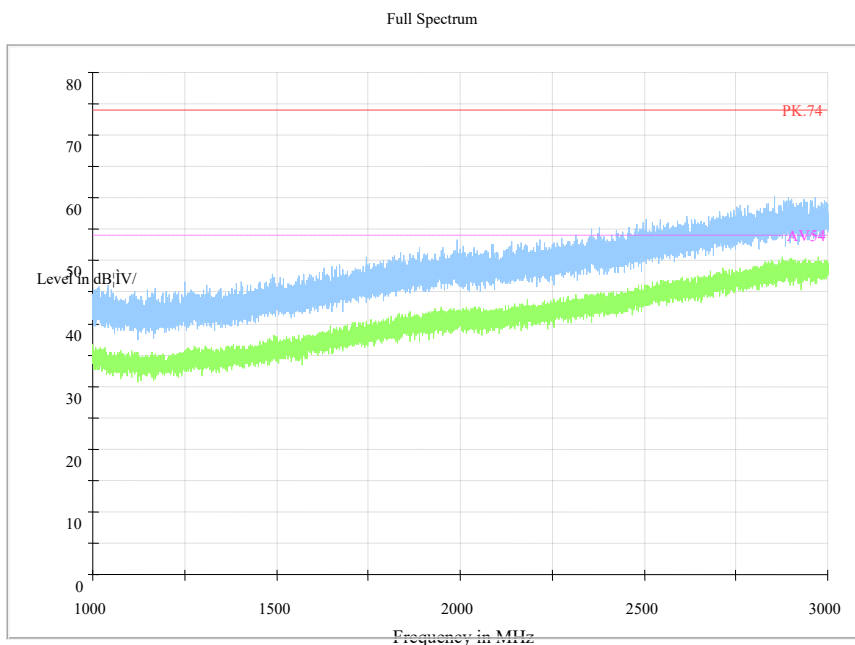
Note: The test data in the graph includes two polarizations: horizontal and vertical

EUT+ charger:



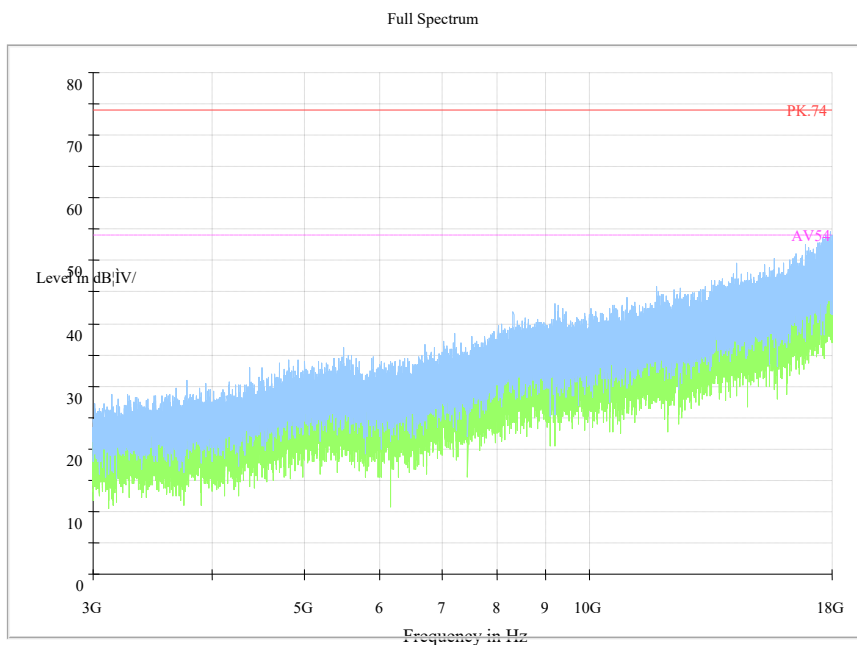
Pic7. Radiated emission(30MHz – 1GHz)

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



Pic8. Radiated emission (1 GHz – 3 GHz)

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



Pic9. Radiated emission (3 GHz – 18 GHz)

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	-----	5th Sep. 2021	6th Sep. 2016
2	ESW EMI test receiver	R&S	101574	20th Aug. 2019	20th Aug. 2018
3	CMW500 Mobile Station Tester	R&S	160132	20th Aug. 2019	20th Aug. 2018
4	9.080m×5.255m×3.525m Shielding room	FRANKONIA	-----	5th Sep. 2021	6th Sep. 2016
5	ESIB7 EMI test receiver	R&S	100280	20th Aug. 2019	20th Aug. 2018
6	HL562Ultra log test antenna	R&S	100167	20th Aug. 2019	20th Aug. 2018
7	ENV216 AMN	R&S	3560.6550. 12	20th Aug. 2019	20th Aug. 2018
8	HF 907 Double-Ridged Waveguide Horn Antenna	R&S	100512	20th Aug. 2019	20th Aug. 2018
9	PS2000 Turn Table	FRANKONIA	-----	-----	-----
10	MA260 Antenna Master	FRANKONIA	-----	-----	-----
11	EMC32EMI test software	R&S	-----	-----	-----