



TEST REPORT

Report No.: SRTC2024-9004(F)-24081205(T)
Product Name: Smart Phone
Applicant: SHARP CORPORATION
Manufacturer: SHARP CORPORATION
Specification: FCC Part 15B (Certification)
(2023 edition)
ANSI C63.4-2014
FCC ID: APYHRO00333

The State Radio_monitoring_center Testing Center (SRTC)
15th Building, No.30 Shixing Street, Shijingshan District,
Beijing, China

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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
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

1.4 Manufacturer's details

Company: SHARP CORPORATION
Address: 1 Takumi-cho, Sakai-ku, Sakai City, Osaka 590-8522, Japan

1.5 Application details

Date of reception of test sample: 12st August 2024

Date of test: 13th August 2024 to 13th September 2024

1.6 Reference specification

FCC Part 15B, 2023 (Certification)
 ANSI C63.4-2014

1.7 Information of EUT

1.7.1 General information

| | |
|--------------------------|---|
| Name of EUT | Smart Phone |
| Model Name | APYHRO00333 |
| Frequency Range | GSM: GSM850 / PCS1900 WCDMA: FDD II /FDD V LTE: FDD 2/ FDD 4/ FDD 5/ FDD 7/ FDD 12/ FDD13/FDD 17/TDD 38/ TDD 41/ TDD66 NR:N5/N41 Bluetooth: 2.4~2.48GHz WiFi: 2.412GHz~2.472 GHz 5.15-5.35GHz/5.47-5.725GHz 5.725GHz-5.85GHz NFC: 13.56MHz |
| carrier aggregation | DL: CA_7A-7A, CA_38C, CA_41C, CA_66B, CA_66C, CA_66A-66A |
| NSA LTE band(EN-DC band) | DC_B13_N66A, DC_B66_N41A, DC_B66A-n5A |
| Equipment Class | Class B |
| Power Supply | Battery or Charger |
| HW Version | DVT |
| SW Version | A8070 |

1.7.2EUT details

| Product Name | IMEI |
|--------------|--|
| Smart Phone | EUT1:004401231775228/004401231800224 EUT2:004401231778750/004401231803756 |

1.7.3 Auxiliary equipment details

AE (Auxiliary Equipment) 1#: Laptop

| | |
|--------------|----------|
| Manufacturer | Lenovo |
| Model Number | E470c |
| S/N | PF10VBX6 |

AE (Auxiliary Equipment) 2#: battery

| | |
|--------------|---------------|
| Manufacturer | ATL |
| Model Number | UBATIA321AFN2 |
| type | Li-Lon |

AE (Auxiliary Equipment) 3#: Charger

| | |
|--------------|-------------------|
| Manufacturer | DVE |
| Model Number | DSA-10PF06-05 FUS |

AE (Auxiliary Equipment) 4#: cable

| | |
|--------------|---------------|
| Manufacturer | Kingpower |
| Model Number | K201-05130-00 |

AE (Auxiliary Equipment) 5#: Earphone

| | |
|--------------|-------|
| Manufacturer | Apple |
| Model Number | CFG5 |

AE(Auxiliary Equipment) 6# USB type C - 3.5mm Minijack

| | |
|--------------|-----------------|
| Manufacturer | Owltech |
| Model Number | OWL-CBCF3502-WH |

P9 multi-Vendor List

| | UFS memory | | DDR | |
|------------|------------|-----------------|-----|---------------------------|
| 1st Source | 1st | KIOXIA | 1st | MICRON |
| | | THGJFLT2E46BATP | | MT62F1536M64D8CL-023 WT:B |
| 2nd Source | 2nd | SAMSUNG | 2nd | SAMSUNG |
| | | KLUGF8RHHD-B0G1 | | K3KL4L40EM-BGCU |

NOTE:Sharp Corporation declares that this equipment is different on the supplier of the part above in the table.

1.7.4 Test mode

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

Note1: As the information described, the relevant tests have been performed in order to verify in which mode would have the worst features. When the EUT1 exercised with 4# Cable, 2# Battery, 3# Charger is the worst feature, so all the tests shown in this test report are performed at this feature when the EUT working on Mode 1 and Mode 3.

Note2: AE1# Laptop and AE6 was selected by testing laboratory and was only cooperated with this test, not for sale.

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.LiuWei Director of the test department 刘巍 | Checked By: Mr.Guoyu Vice director of the test department 郭雨 |
| Tested By: Mr.Wu Chengwang 吴成旺 | Issued date: 2024.09.13 |

2.2 Test result

2.2.1 Conducted Emissions-FCC Part15.107

Ambient condition:

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 22.1°C | 38.7% | 100.8kPa |

Test Setup with laptop:

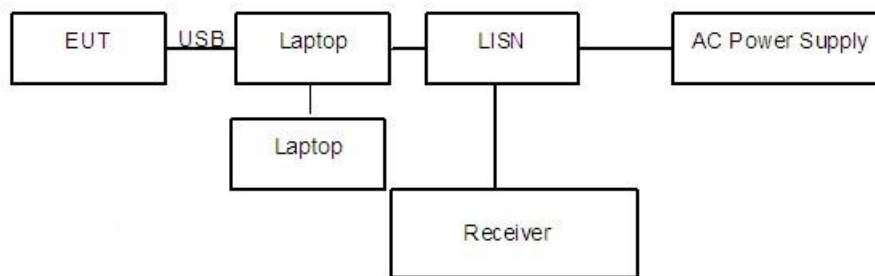


Figure 1

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 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 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:

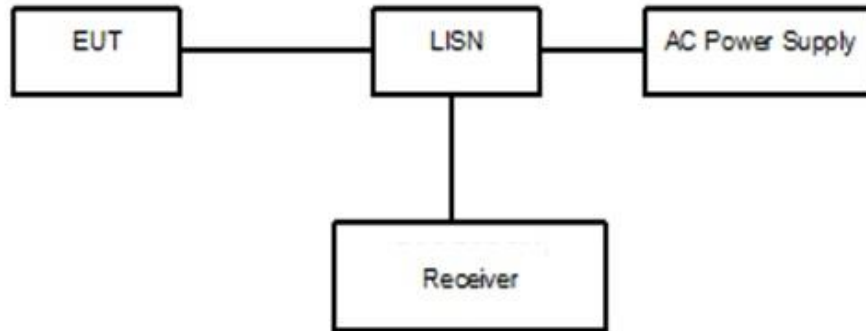


Figure 2

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. Open the following functions of EUT: 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.

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: $(21.43 \text{ dB}\mu\text{V}) = (-8.17\text{dB}\mu\text{V}) + (29.6\text{dB})$, the corresponding frequency is 0.23955MHz.

Limit:

| Frequency of Emission(MHz) | Limits(dBμV) |
|----------------------------|--------------|
|----------------------------|--------------|

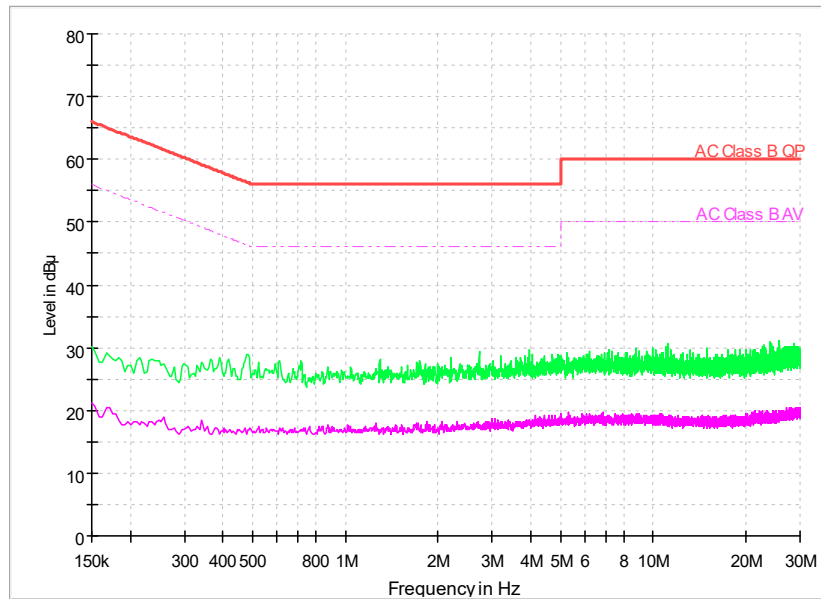
| | Quasi-peak | Average |
|----------|------------|-----------|
| 0.15~0.5 | 66 to 56* | 56 to 46* |
| 0.5~5 | 56 | 46 |
| 5~30 | 60 | 50 |

Note: * Decreases with the logarithm of the frequency

Test result:

Noise Level of the Measuring Instrument

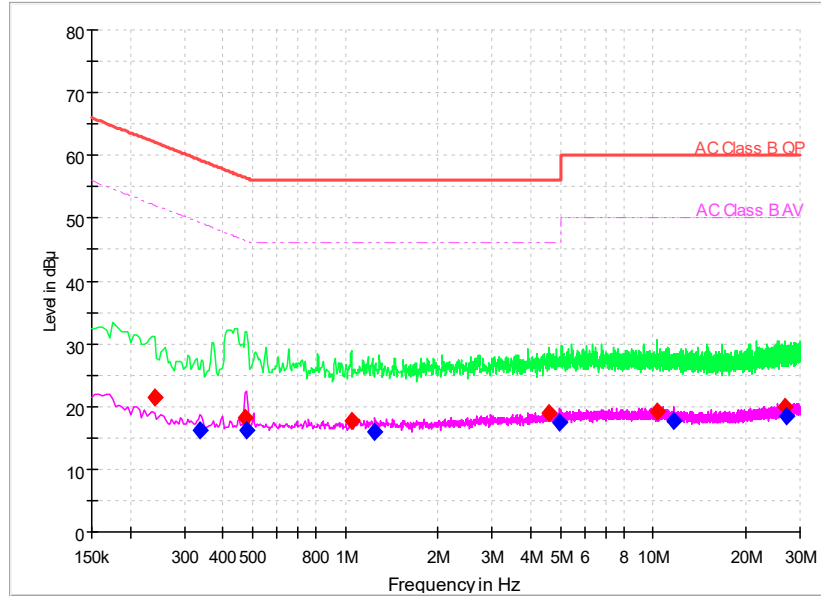
Full Spectrum



Pic1. Conducted emission L and N Line

120V AC:
EUT1 +2# Battery+4# Cable+3# Charger

Full Spectrum

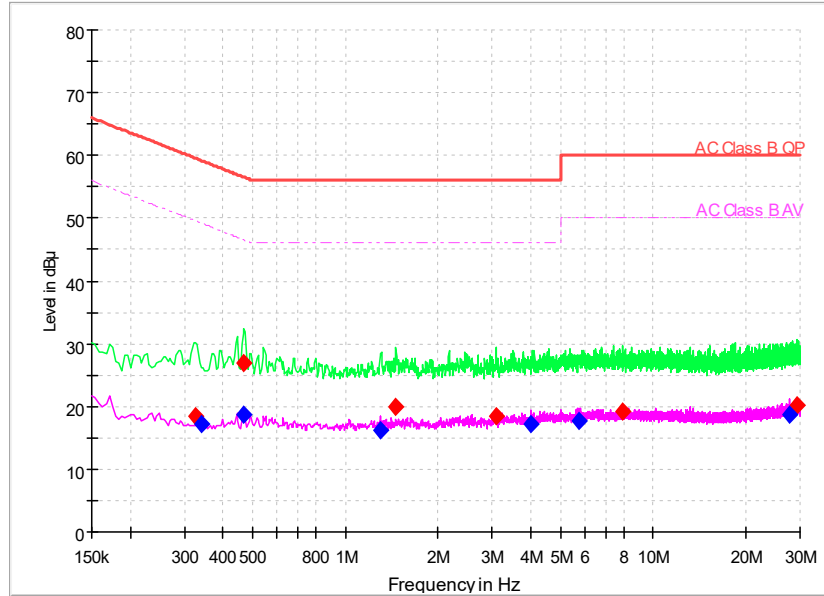


Pic2. Conducted emission L&N Line

| Frequency (MHz) | QuasiPeak (dBμV) | Average (dBμV) | Limit (dBμV) | Margin (dB) | Line | Corr. (dB) | Pmea QuasiPeak (dBμV) | Pmea Average (dBμV) |
|-----------------|------------------|----------------|--------------|-------------|------|------------|-----------------------|---------------------|
| 0.23955 | 21.43 | --- | 62.11 | 40.68 | L1 | 29.60 | -8.17 | --- |
| 0.33763 | --- | 16.28 | 49.26 | 32.98 | L1 | 29.60 | --- | -13.32 |
| 0.47409 | 18.29 | --- | 56.44 | 38.15 | L1 | 29.60 | -11.31 | --- |
| 0.47835 | --- | 16.22 | 46.37 | 30.15 | L1 | 29.60 | --- | -13.38 |
| 1.04550 | 17.65 | --- | 56.00 | 38.35 | L1 | 29.60 | -11.95 | --- |
| 1.25019 | --- | 15.99 | 46.00 | 30.01 | L1 | 29.60 | --- | -13.61 |
| 4.60618 | 19.01 | --- | 56.00 | 36.99 | L1 | 29.70 | -10.69 | --- |
| 4.95585 | --- | 17.53 | 46.00 | 28.47 | L1 | 29.70 | --- | -12.17 |
| 10.28621 | 19.30 | --- | 60.00 | 40.70 | L1 | 29.80 | -10.50 | --- |
| 11.66784 | --- | 17.65 | 50.00 | 32.35 | L1 | 29.90 | --- | -12.25 |
| 26.91692 | 19.98 | --- | 60.00 | 40.02 | N | 30.60 | -10.62 | --- |
| 27.06617 | --- | 18.50 | 50.00 | 31.50 | N | 30.60 | --- | -12.10 |

240V AC:
EUT1 +2# Battery+4# Cable+3# Charger:

Full Spectrum

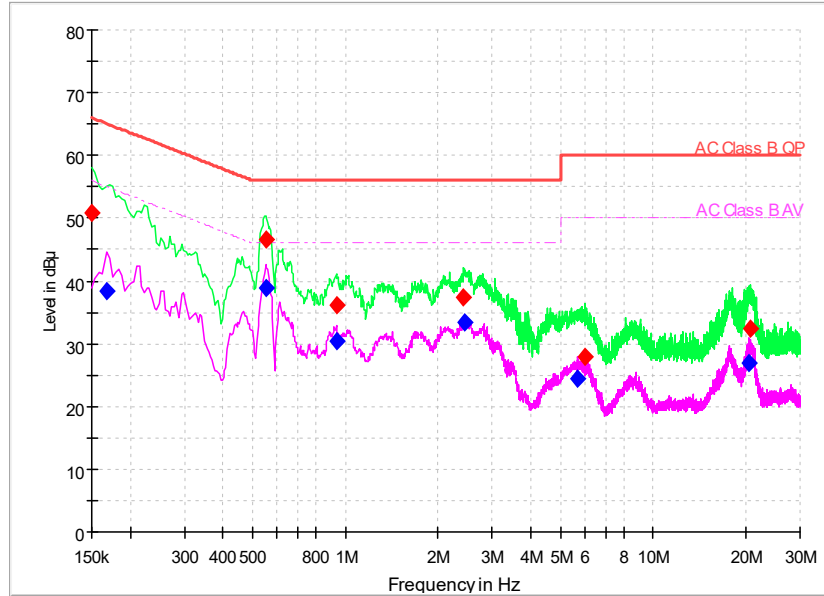


Pic3. Conducted emission L&N Line

| Frequency (MHz) | QuasiPeak (dBμV) | Average (dBμV) | Limit (dBμV) | Margin (dB) | Line | Corr. (dB) | Pmea QuasiPeak (dBμV) | Pmea Average (dBμV) |
|-----------------|------------------|----------------|--------------|-------------|------|------------|-----------------------|---------------------|
| 0.32484 | 18.37 | --- | 59.58 | 41.21 | L1 | 29.60 | -11.23 | --- |
| 0.34189 | --- | 17.19 | 49.16 | 31.97 | N | 29.60 | --- | -12.41 |
| 0.46982 | --- | 18.68 | 46.52 | 27.84 | L1 | 29.60 | --- | -10.92 |
| 0.46982 | 26.85 | --- | 56.52 | 29.67 | N | 29.60 | -2.75 | --- |
| 1.30136 | --- | 16.12 | 46.00 | 29.88 | L1 | 29.60 | --- | -13.48 |
| 1.46340 | 20.02 | --- | 56.00 | 35.98 | L1 | 29.60 | -9.58 | --- |
| 3.09236 | 18.38 | --- | 56.00 | 37.62 | L1 | 29.60 | -11.22 | --- |
| 4.02624 | --- | 17.13 | 46.00 | 28.87 | L1 | 29.60 | --- | -12.47 |
| 5.71489 | --- | 17.68 | 50.00 | 32.32 | N | 29.70 | --- | -12.02 |
| 7.98349 | 19.25 | --- | 60.00 | 40.75 | L1 | 29.80 | -10.55 | --- |
| 27.72714 | --- | 18.60 | 50.00 | 31.40 | L1 | 30.60 | --- | -12.00 |
| 29.42006 | 20.20 | --- | 60.00 | 39.80 | L1 | 30.70 | -10.50 | --- |

EUT1 +1#laptop +2# Battery+4# Cable:

Full Spectrum



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) |
|--------------------|---------------------|-------------------|-----------------|----------------|------|---------------|-----------------------------|---------------------------|
| 0.15000 | 50.77 | --- | 66.00 | 15.23 | N | 29.60 | 21.17 | --- |
| 0.16706 | --- | 38.31 | 55.11 | 16.80 | L1 | 29.60 | --- | 8.71 |
| 0.55084 | --- | 38.87 | 46.00 | 7.13 | L1 | 29.60 | --- | 9.27 |
| 0.55084 | 46.48 | --- | 56.00 | 9.52 | L1 | 29.60 | 16.88 | --- |
| 0.93463 | --- | 30.52 | 46.00 | 15.48 | N | 29.60 | --- | 0.92 |
| 0.93463 | 36.09 | --- | 56.00 | 19.91 | N | 29.60 | 6.49 | --- |
| 2.42713 | 37.35 | --- | 56.00 | 18.65 | L1 | 29.60 | 7.75 | --- |
| 2.44845 | --- | 33.30 | 46.00 | 12.70 | N | 29.60 | --- | 3.70 |
| 5.70636 | --- | 24.49 | 50.00 | 25.51 | N | 29.70 | --- | -5.21 |
| 6.01339 | 27.98 | --- | 60.00 | 32.02 | N | 29.70 | -1.72 | --- |
| 20.50770 | --- | 27.02 | 50.00 | 22.98 | N | 30.30 | --- | -3.28 |
| 20.66548 | 32.50 | --- | 60.00 | 27.50 | N | 30.30 | 2.20 | --- |

2.2.2 Radiated Emissions-FCC Part15.109

Ambient condition:

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 21.6°C | 39.9% | 100.8kPa |

Test Setup:

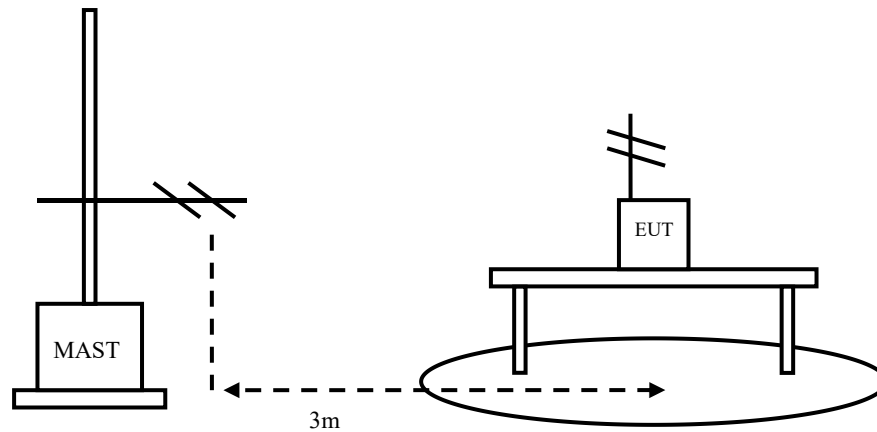


Figure 3

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 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.

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. Open the following functions of EUT: 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: 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:

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

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 Peak | 54 74 |
|---|--------------|----------|

Test result:

Sample calculation: $(13.93\text{dB } \mu\text{V/m}) = (35.93\text{dB } \mu\text{V/m}) + (-22.0\text{dB})$, the corresponding frequency is 46.684MHz.

EUT1 +2# Battery+4# Cable+3# Charger:

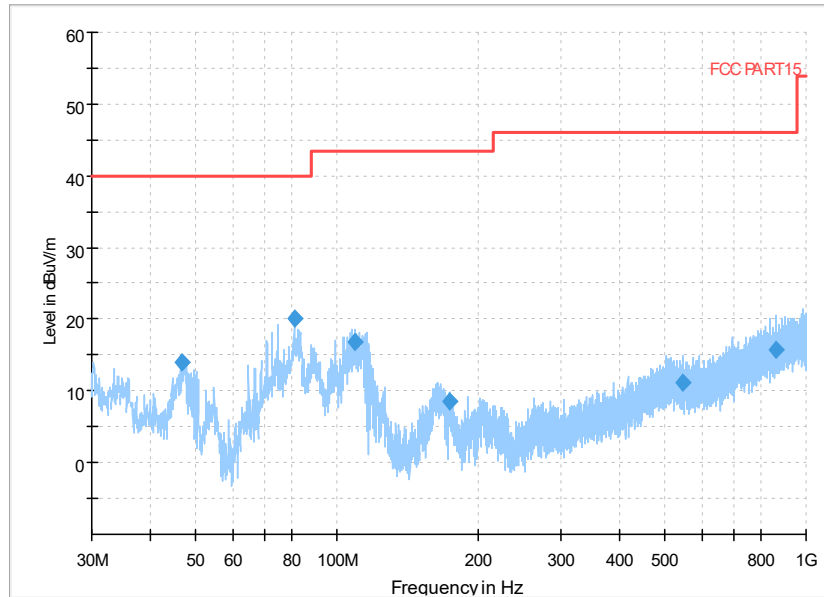
| Frequency(MHz) | Result(dB μ V/m) | Limit (dB μ V/m) | ARpl (dB) | Pmea (dB μ V/m) | Polarity |
|----------------|------------------------|----------------------|-----------|-----------------------|----------|
| 46.684 | 13.93 | 40.0 | -22.0 | 35.93 | V |
| 81.022 | 20.15 | 40.0 | -23.7 | 43.85 | V |
| 109.395 | 16.84 | 43.5 | -21.7 | 38.54 | V |
| 173.221 | 8.54 | 43.5 | -22.9 | 31.44 | V |
| 545.167 | 11.08 | 46.0 | -11.3 | 22.38 | V |
| 864.2 | 15.63 | 46.0 | -5.3 | 20.93 | V |

EUT1 +2# Battery+4# Cable +1#Laptop:

| Frequency(MHz) | Result(dB μ V/m) | Limit (dB μ V/m) | ARpl (dB) | Pmea (dB μ V/m) | Polarity |
|----------------|------------------------|----------------------|-----------|-----------------------|----------|
| 30.4365 | 11.23 | 40.0 | -12.8 | 24.03 | V |
| 83.7865 | 1.12 | 40.0 | -23.4 | 24.52 | V |
| 114.972 | 3.25 | 43.5 | -21.5 | 24.75 | V |
| 307.42 | 5.23 | 46.0 | -18.2 | 23.43 | V |
| 518.638 | 10.79 | 46.0 | -11.8 | 22.59 | V |
| 917.744 | 16.58 | 46.0 | -4.5 | 21.08 | V |

EUT1 +2# Battery+4# Cable+3# Charger:refer to Pic5, Pic6, Pic7, Pic8

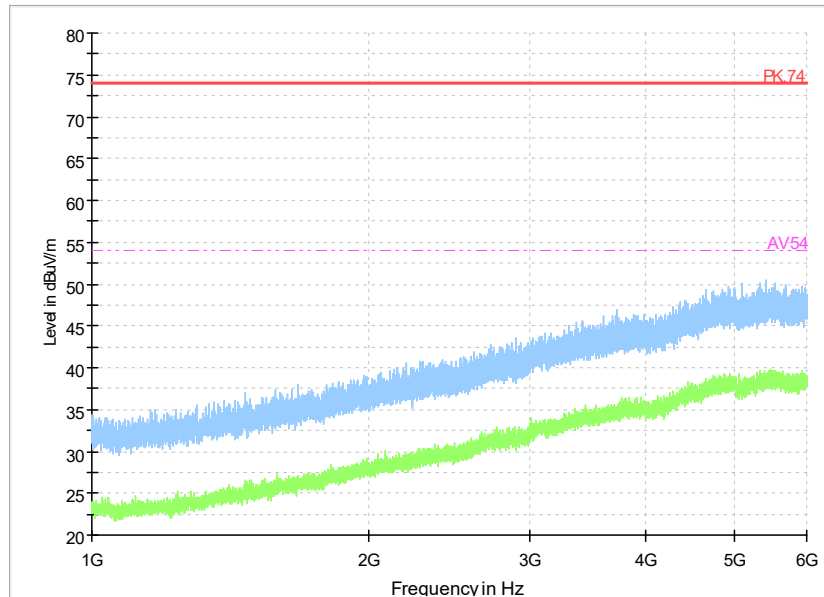
Full Spectrum



Pic5. Radiated emission(30MHz – 1GHz)

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

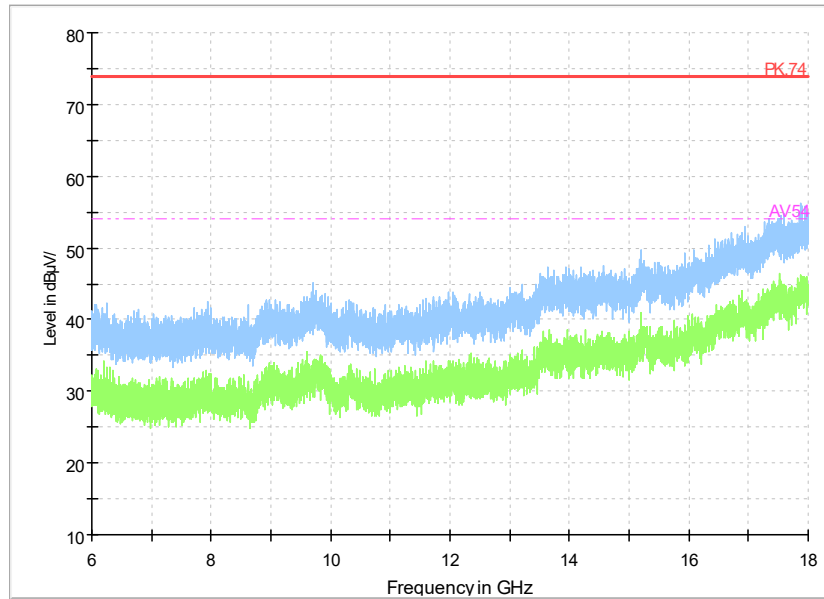
Full Spectrum



Pic6. Radiated emission (1GHz –6GHz)

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

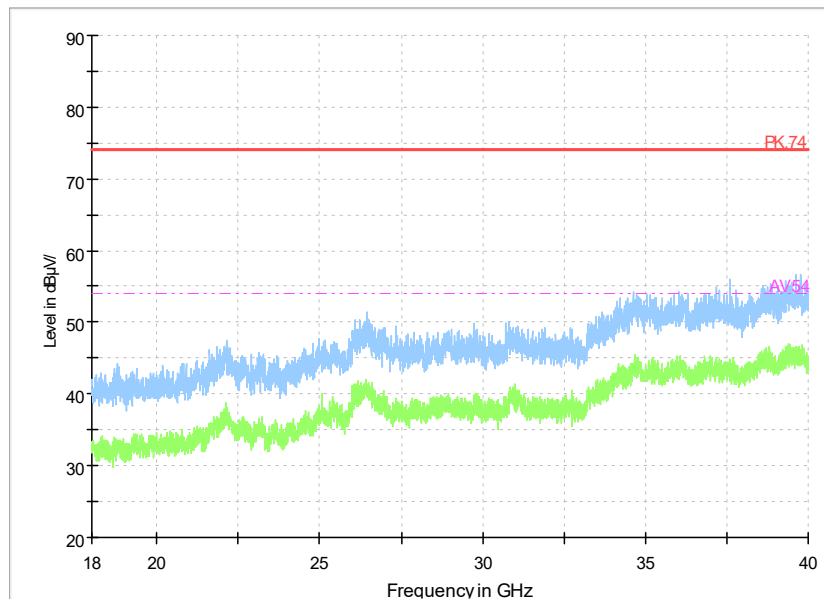
Full Spectrum



Pic7. Radiated emission (6GHz –18GHz)

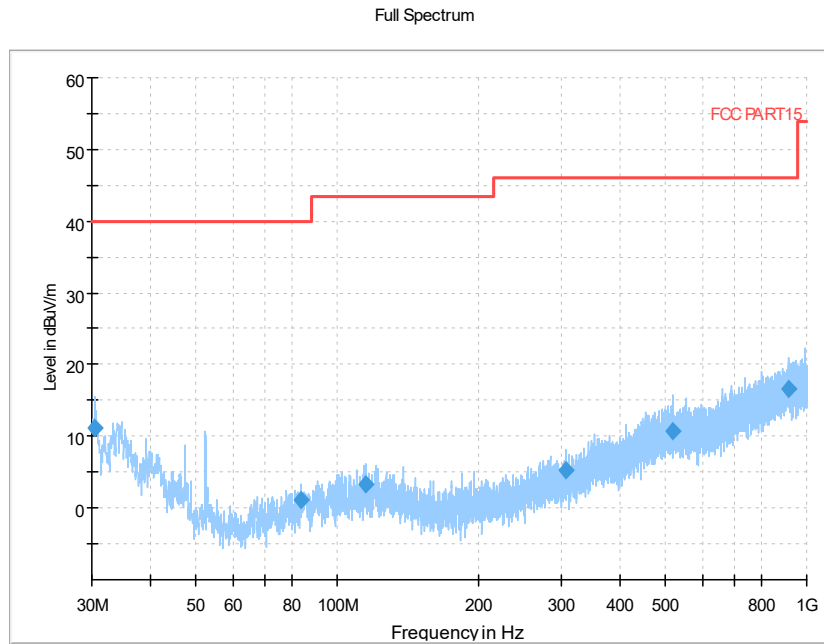
Note: The test data in the graph includes two polarizations: horizontal and vertical.

Full Spectrum



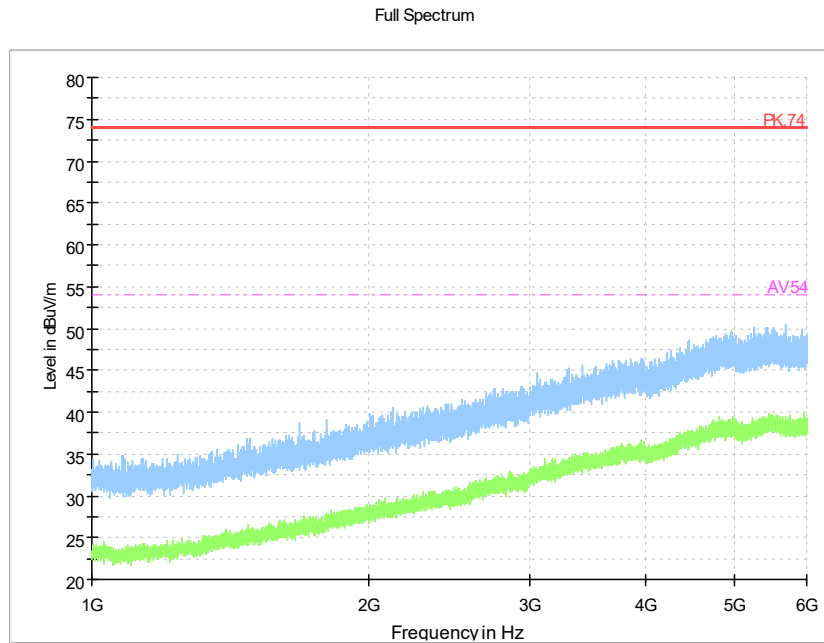
Pic8. Radiated emission (18GHz –40GHz)

Note: The test data in the graph includes two polarizations: horizontal and vertical.
 EUT1 +2# Battery+4# Cable+1#Laptop: refer to Pic9, Pic10, Pic11, Pic12



Pic9. Radiated emission (30MHz – 1GHz)

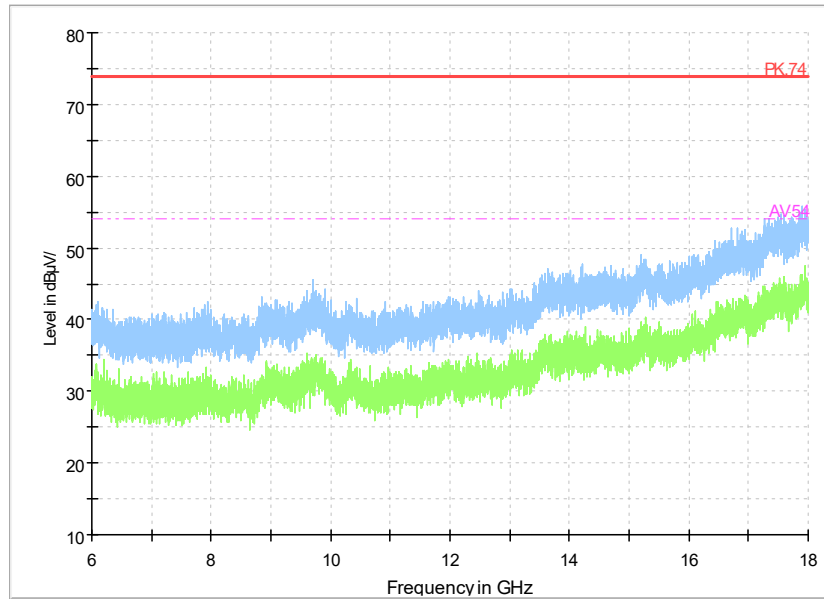
Note: The test data in the graph includes two polarizations: horizontal and vertical



Pic10. Radiated emission (1GHz –6GHz)

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

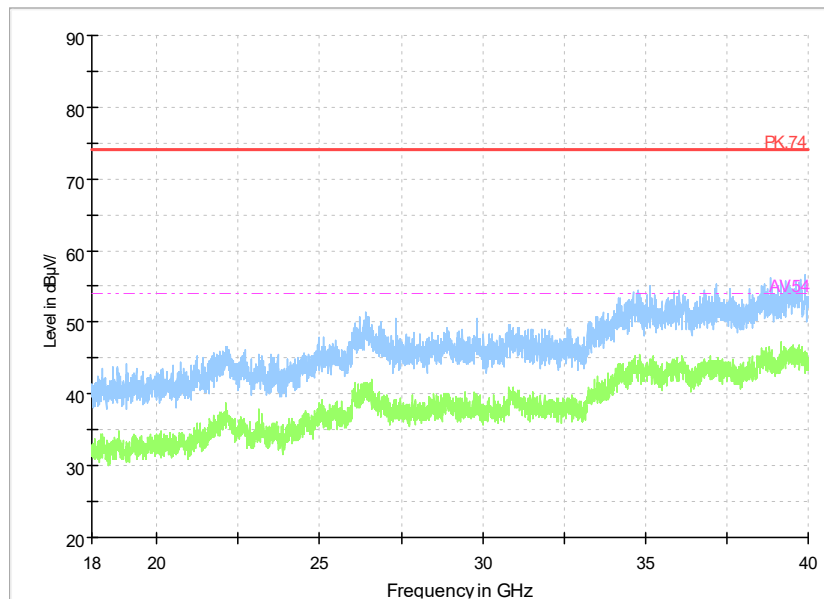
Full Spectrum



Pic11. Radiated emission (6GHz –18GHz)

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

Full Spectrum



Pic12. 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 | ----- | 2028.09.05 | 2023.09.05 |
| 2 | ESW EMI test receiver | R&S | 101574 | 2025.03.06 | 2024.03.06 |
| 3 | ESR3 EMI test receiver | R&S | 102361 | 2025.03.06 | 2024.03.06 |
| 4 | 9.080m×5.255m×3.525m Shielding room | FRANKONIA | ----- | 2027.03.25 | 2022.03.25 |
| 5 | VULB 9163 Ultra log test antenna | schwarzbeck | 727 | 2025.05.28 | 2023.05.28 |
| 6 | HF 907 Double-Ridged Waveguide Horn Antenna | R&S | 100512 | 2025.07.20 | 2023.07.20 |
| 7 | SAS-574 Horn Antenna | schwarzbeck | 535 | 2025.05.12 | 2023.05.12 |
| 8 | ENV216 AMN | R&S | 101881 | 2025.06.21 | 2024.06.21 |
| 9 | EMC32EMI test software | R&S | V10 | ----- | ----- |

-----The End-----