

FCC Radio Test Report

FCC ID : TKZAW7915-NPD
Equipment : Wi-Fi 6 11ax M.2 AE Key Module
Brand Name : AsiaRF Co., Ltd.
Model Name : AW7915-AED
Applicant : AsiaRF Co., Ltd.
1F, 7, Houde Street, Yonghe Dist. New Taipei City
Taiwan 23455
Manufacturer : AsiaRF Co., Ltd.
1F, 7, Houde Street, Yonghe Dist. New Taipei City
Taiwan 23455
Standard : 47 CFR FCC Part 15.407

The product was received on Nov. 26, 2024, and testing was started from Dec. 13, 2024 and completed on Dec. 14, 2024. We, SPORTON INTERNATIONAL INC. Hsinhua Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Hsinhua Laboratory, the test report shall not be reproduced except in full.



Approved by: Jackson Tsai

SPORTON INTERNATIONAL INC. Hsinhua Laboratory

No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)



Table of Contents

| | |
|--|-----------|
| HISTORY OF THIS TEST REPORT | 3 |
| SUMMARY OF TEST RESULT | 4 |
| 1 GENERAL DESCRIPTION | 5 |
| 1.1 Information..... | 5 |
| 1.2 Testing Applied Standards | 9 |
| 1.3 Testing Location Information | 9 |
| 1.4 Measurement Uncertainty | 9 |
| 2 TEST CONFIGURATION OF EUT..... | 10 |
| 2.1 Test Channel Mode | 10 |
| 2.2 The Worst Case Measurement Configuration | 12 |
| 2.3 Support Equipment..... | 12 |
| 2.4 Test Setup Diagram | 13 |
| 3 TRANSMITTER TEST RESULT | 14 |
| 3.1 Unwanted Emissions..... | 14 |
| 4 TEST EQUIPMENT AND CALIBRATION DATA..... | 17 |
| APPENDIX A. TEST RESULTS OF UNWANTED EMISSIONS | |
| APPENDIX B. TEST PHOTOS | |
| PHOTOGRAPHS OF EUT V01 | |



TEL : 886-3-3273456
FAX : 886-3-3270973
Report Template No.: HE1-D1 Ver4.5
FCC ID: TKZAW7915-NPD

Summary of Test Result

| Report Clause | Ref. Std. Clause | Test Items | Result (PASS/FAIL) | Remark |
|---------------|------------------|-----------------------------------|--------------------|----------------|
| 1.1.2 | 15.203 | Antenna Requirement | PASS | - |
| - | 15.207 | AC Power-line Conducted Emissions | Not Required | Refer as 1.1.5 |
| - | 15.407(a) | Emission Bandwidth | Not Required | Refer as 1.1.5 |
| - | 15.407(a) | Maximum Conducted Output Power | Not Required | Refer as 1.1.5 |
| - | 15.407(a) | Peak Power Spectral Density | Not Required | Refer as 1.1.5 |
| 3.1 | 15.407(b) | Unwanted Emissions | PASS | - |

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and explanations:

The EUT supports beamforming and CDD modes, and the CDD mode is the worst case. Therefore, all test items are evaluated in the report. The beamforming mode only evaluates the output power.

Reviewed by: Barry Hsiao

Report Producer: Amber Chiu

1 General Description

1.1 Information

1.1.1 RF General Information

| Frequency Range (MHz) | IEEE Std. 802.11 | Ch. Frequency (MHz) | Channel Number |
|-----------------------|--|---------------------|----------------|
| 5150-5250 | a, n (HT20), ac (VHT20), ax (HEW20) | 5180-5240 | 36-48 [4] |
| 5725-5850 | | 5745-5825 | 149-165 [5] |
| 5150-5250 | n (HT40), ac (VHT40), ax (HEW40) | 5190-5230 | 38-46 [2] |
| 5725-5850 | | 5755-5795 | 151-159 [2] |
| 5150-5250 | ac (VHT80), ax (HEW80) | 5210 | 42 [1] |
| 5725-5850 | | 5775 | 155 [1] |

<Non-Beamforming>

| Band | Mode | BWch (MHz) | Nant |
|---------------|----------------|------------|------|
| 5.15-5.25GHz | 802.11a | 20 | 2TX |
| 5.725-5.85GHz | 802.11a | 20 | 2TX |
| 5.15-5.25GHz | 802.11ax HEW20 | 20 | 2TX |
| 5.725-5.85GHz | 802.11ax HEW20 | 20 | 2TX |
| 5.15-5.25GHz | 802.11ax HEW40 | 40 | 2TX |
| 5.725-5.85GHz | 802.11ax HEW40 | 40 | 2TX |
| 5.15-5.25GHz | 802.11ax HEW80 | 80 | 2TX |
| 5.725-5.85GHz | 802.11ax HEW80 | 80 | 2TX |

<Beamforming>

| Band | Mode | BWch (MHz) | Nant |
|---------------|-------------------|------------|------|
| 5.15-5.25GHz | 802.11ax HEW20-BF | 20 | 2TX |
| 5.725-5.85GHz | 802.11ax HEW20-BF | 20 | 2TX |
| 5.15-5.25GHz | 802.11ax HEW40-BF | 40 | 2TX |
| 5.725-5.85GHz | 802.11ax HEW40-BF | 40 | 2TX |
| 5.15-5.25GHz | 802.11ax HEW80-BF | 80 | 2TX |
| 5.725-5.85GHz | 802.11ax HEW80-BF | 80 | 2TX |

Note:

- 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- VHT20, VHT40, VHT80 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- HEW20, HEW40, HEW80 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- BWch is the nominal channel bandwidth.
- Evaluated HEW20/HEW40/HEW80 mode only due to the similar modulation. The power setting of HT20/HT40/VHT20/VHT40/VHT80 mode are the same or lower than HEW20/HEW40/HEW80.

1.1.2 Antenna Information

| Group | Ant. | Brand | Model Name | Antenna Type | Connector | Support | Cable Loss (dBi) |
|-------|-------|--------|------------|--------------|--------------|---------|------------------|
| 1 | 1-2 | Asiarf | ANT010-DAU | PCB | I-PEX / MMCX | 2.4G+5G | 0.3 |
| 2 | 3-4 | Asiarf | ANT003 | PCB | I-PEX / MMCX | 2.4G+5G | 0.3 |
| 3 | 5-6 | Asiarf | A245005N | PCB | I-PEX / MMCX | 2.4G+5G | 0.3 |
| 4 | 7-8 | Asiarf | A2405N | PCB | I-PEX / MMCX | 2.4G | 0.3 |
| 5 | 9-10 | Asiarf | A5005N | PCB | I-PEX / MMCX | 5G | 0.3 |
| 6 | 11-12 | Asiarf | A245004 | Dipole | I-PEX / MMCX | 2.4G+5G | 0.3 |
| 7 | 13-14 | Asiarf | A245002 | Dipole | I-PEX / MMCX | 2.4G+5G | 0.3 |

| Group | Ant. | Gain (dBi) | |
|-------|-------|------------|-----|
| | | 2.4G | 5G |
| 1 | 1-2 | 5.2 | 5.5 |
| 2 | 3-4 | 2.5 | 2.5 |
| 3 | 5-6 | 4 | 5.1 |
| 4 | 7-8 | 5.2 | - |
| 5 | 9-10 | - | 5 |
| 6 | 11-12 | 4 | 5.1 |
| 7 | 13-14 | 2 | 2 |

Note 1: EUT can match with above antennas for using. The higher gain (Ant. 1/6) were used to perform the worst configuration and result of that was recorded as the final test result.

Note 2: The antenna mentioned above will not be sold with the EUT in the market.

For 2.4GHz function:

For IEEE 802.11 b/g/n/VHT/ax mode (2TX/2RX)

Group 1, 2, 3, 4, 6, 7 could transmit/receive simultaneously.

For 5GHz function:

For IEEE 802.11 a/n/ac/ax mode (2TX/2RX)

Group 1, 2, 3, 5, 6, 7 could transmit/receive simultaneously.

Note 2: Directional gain information

| | Maximum Output Power | Power Spectral Density |
|---------------|---|--|
| Non-BF | Directional gain = Max.gain + array gain. For power measurements on IEEE 802.11 devices Array Gain = 0 dB (i.e., no array gain) for N ANT ≤ 4 | $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{BF}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ |
| BF | $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{BF}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ | $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{BF}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ |

1.1.3 EUT Information

| Operational Condition | | | |
|-------------------------------------|---|---|--|
| EUT Power Type | From Test Fixture | | |
| EUT Function | <input type="checkbox"/> Outdoor AP | <input type="checkbox"/> Indoor AP | |
| | <input type="checkbox"/> Fixed P2P AP | <input checked="" type="checkbox"/> Client | |
| Beamforming Function | <input checked="" type="checkbox"/> With beamforming | <input type="checkbox"/> Without beamforming | |
| Resource Unit | <input checked="" type="checkbox"/> Full RU | <input type="checkbox"/> Partial RU | |
| | <input type="checkbox"/> MRU(static preamble puncturing) | <input type="checkbox"/> MRU(dynamic preamble puncturing) | |
| Type of EUT | | | |
| <input checked="" type="checkbox"/> | Stand-alone | | |
| <input type="checkbox"/> | Combined (EUT where the radio part is fully integrated within another device) | | |
| | Combined Equipment - Brand Name / Model No.: ... | | |
| <input type="checkbox"/> | Plug-in radio (EUT intended for a variety of host systems) | | |
| | Host System - Brand Name / Model No.: | | |
| <input type="checkbox"/> | Other: | | |

1.1.4 Mode Test Duty Cycle

<Non-Beamforming>

| Mode | DC | DCF(dB) | T(s) | VBW(Hz) $\geq 1/T$ |
|--------------------------------|-------|---------|----------|--------------------|
| 802.11a_Nss1,(6Mbps)_2TX | 0.959 | 0.18 | 1.397m | 1k |
| 802.11ax HEW20_Nss1,(MCS0)_2TX | 0.845 | 0.73 | 312.5u | 10k |
| 802.11ax HEW40_Nss1,(MCS0)_2TX | 0.845 | 0.73 | 312.5u | 10k |
| 802.11ax HEW80_Nss1,(MCS0)_2TX | 0.84 | 0.76 | 297.188u | 10k |

<Beamforming>

| Mode | DC | DCF(dB) | T(s) | VBW(Hz) $\geq 1/T$ |
|-----------------------------------|-------|---------|----------|--------------------|
| 802.11ax HEW20-BF_Nss1,(MCS0)_2TX | 0.845 | 0.73 | 312.5u | 10k |
| 802.11ax HEW40-BF_Nss1,(MCS0)_2TX | 0.845 | 0.73 | 312.5u | 10k |
| 802.11ax HEW80-BF_Nss1,(MCS0)_2TX | 0.84 | 0.76 | 297.188u | 10k |

Note. If DC < 0.98, the DCF was added while measuring Output power and PSD.



1.1.5 Table for Existing Change

This product is an extension of original one reported under Sporton project number: FR211912AN

Below is the table for the change of the product with respect to the original one.

| Modifications | Performance Checking |
|---|---|
| <ol style="list-style-type: none">1. Equipment name, Model name was added and Change to M.2 interface.2. RF area CON23, CON24 moved 1.27mm to the left and right because of the PCIE fixing holes3. R21 is due to circuit modification and part position adjustment.4. R12, R434 fine-tuned the position of components due to modification of PCIE gold finger circuit | The worst case of Radiated Unwanted Emissions below 1 GHz was evaluated |

1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ 47 CFR FCC Part 15
- ♦ ANSI C63.10-2013
- ♦ KDB 789033 D02 v02r01

The following reference test guidance is not within the scope of accreditation of TAF:

- ♦ KDB 662911 D01 v02r01
- ♦ KDB 414788 D01 v01r01

1.3 Testing Location Information

| Test Lab. : Sporton International Inc. Hsinhua Laboratory | | | | |
|--|--|---------------|----------------------------|-------------------------|
| <input checked="" type="checkbox"/> Hsinhua (TAF: 3785) | ADD: No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.) | | | |
| | TEL: 886-3-327-3456 | | FAX: 886-3-327-0973 | |
| Test site Designation No. TW3785 with FCC. | | | | |
| Test Condition | Test Site No. | Test Engineer | Test Environment | Test Date |
| Radiated_ below 1GHz (Verification) | 03CH03-HY | Ian Liou | 22.2~23.4°C / 50~52% | 13/Dec/2024~14/Dec/2024 |
| <input type="checkbox"/> Wen 33rd.St. (TAF: 3785) | ADD: No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) | | | |
| | TEL: 886-3-318-0787 | | FAX: 886-3-318-0287 | |
| Test site Designation No. TW0008 with FCC. | | | | |

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

| Test Items | Uncertainty | Remark |
|--------------------|-------------|--------------------------|
| Unwanted Emissions | 4.8 dB | Confidence levels of 95% |
| Temperature | 0.41 °C | Confidence levels of 95% |
| Humidity | 3.4 % | Confidence levels of 95% |

2 Test Configuration of EUT

2.1 Test Channel Mode

| | |
|------------------------------|---------------------|
| Test Software Version | QATool_Dbg 0.0.2.33 |
|------------------------------|---------------------|




<Non-Beamforming>

| Mode | Power Setting |
|--------------------------------|----------------------|
| 802.11a_Nss1,(6Mbps)_2TX | - |
| 5180MHz | 16.5 |
| 5200MHz | 16.5 |
| 5240MHz | 16 |
| 5745MHz | 19.5 |
| 5785MHz | 20 |
| 5825MHz | 16.5 |
| 802.11ax HEW20_Nss1,(MCS0)_2TX | - |
| 5180MHz | 17.5 |
| 5200MHz | 17.5 |
| 5240MHz | 16.5 |
| 5745MHz | 20 |
| 5785MHz | 19 |
| 5825MHz | 17.5 |
| 802.11ax HEW40_Nss1,(MCS0)_2TX | - |
| 5190MHz | 16.5 |
| 5230MHz | 18.5 |
| 5755MHz | 20.5 |
| 5795MHz | 19 |
| 802.11ax HEW80_Nss1,(MCS0)_2TX | - |
| 5210MHz | 13 |
| 5775MHz | 20 |

**<Beamforming>**

| Mode | Power Setting |
|-----------------------------------|---------------|
| 802.11ax HEW20-BF_Nss1,(MCS0)_2TX | - |
| 5180MHz | 17.5 |
| 5200MHz | 17.5 |
| 5240MHz | 17 |
| 5745MHz | 20 |
| 5785MHz | 19 |
| 5825MHz | 17.5 |
| 802.11ax HEW40-BF_Nss1,(MCS0)_2TX | - |
| 5190MHz | 16.5 |
| 5230MHz | 17 |
| 5755MHz | 20.5 |
| 5795MHz | 19 |
| 802.11ax HEW80-BF_Nss1,(MCS0)_2TX | - |
| 5210MHz | 13 |
| 5775MHz | 20 |

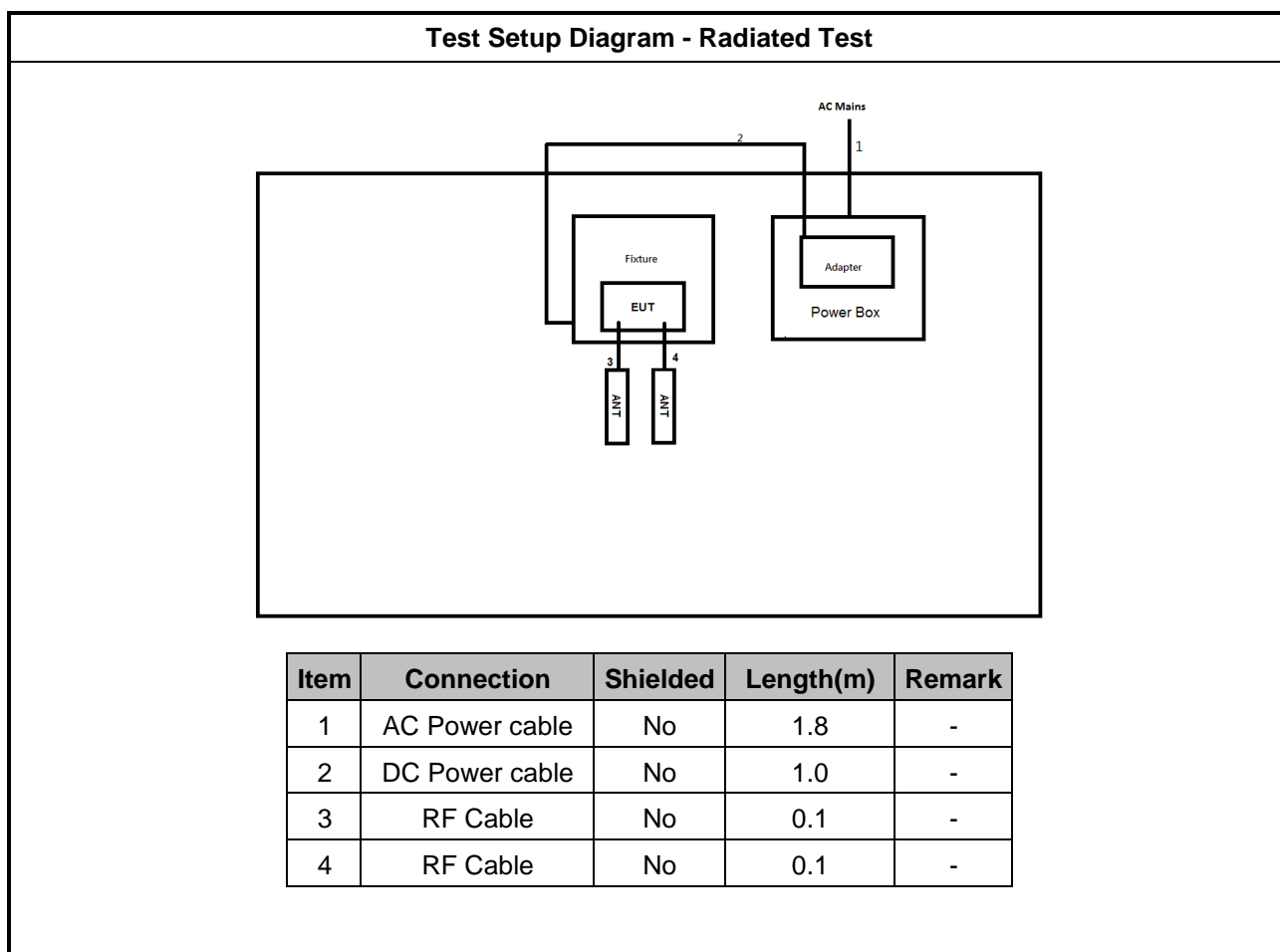
2.2 The Worst Case Measurement Configuration

| The Worst Case Mode for Following Conformance Tests | | | |
|---|---|--|---|
| Tests Item | Unwanted Emissions | | |
| Test Condition | Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type. | | |
| Operating Mode < 1GHz | CTX | | |
| 1 | Test Fixture mode; Dipole Antenna | | |
| Orthogonal Planes of EUT | X Plane | Y Plane | Z Plane |
| |  |  |  |
| Worst Planes of EUT | | | V |

2.3 Support Equipment

| Support Equipment – Radiated | | | | | |
|------------------------------|-----------|---|-------------------|--------|----------------------|
| No. | Equipment | Brand Name | Model Name | FCC ID | Remark |
| 1 | Adapter | SHENZHEN YINGHUIYUAN ELECTRONICS CO.,LTD | YHY-12004000 | - | Provided by Customer |
| 2 | Fixture | Sinovoip | Banana Pi BPi-R64 | - | Provided by Customer |

2.4 Test Setup Diagram



3 Transmitter Test Result

3.1 Unwanted Emissions

3.1.1 Transmitter Radiated Unwanted Emissions Limit

| Unwanted emissions below 1 GHz and restricted band emissions above 1GHz limit | | | |
|---|-----------------------|-------------------------|----------------------|
| Frequency Range (MHz) | Field Strength (uV/m) | Field Strength (dBuV/m) | Measure Distance (m) |
| 0.009~0.490 | 2400/F(kHz) | 48.5 - 13.8 | 300 |
| 0.490~1.705 | 24000/F(kHz) | 33.8 - 23 | 30 |
| 1.705~30.0 | 30 | 29 | 30 |
| 30~88 | 100 | 40 | 3 |
| 88~216 | 150 | 43.5 | 3 |
| 216~960 | 200 | 46 | 3 |
| Above 960 | 500 | 54 | 3 |

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

| Un-restricted band emissions above 1GHz Limit | |
|---|---|
| Operating Band | Limit |
| 5.15 - 5.25 GHz | e.i.r.p. -27 dBm [68.2 dBuV/m@3m] |
| 5.25 - 5.35 GHz | e.i.r.p. -27 dBm [68.2 dBuV/m@3m] |
| 5.47 - 5.725 GHz | e.i.r.p. -27 dBm [68.2 dBuV/m@3m] |
| 5.725 - 5.85 GHz | 5.650-5700 GHz: e.i.r.p. -27 ~ 10 dBm [68.2 ~ 105.2 dBuV/m@3m] 5.700-5720 GHz: e.i.r.p. 10 ~ 15.6 dBm [105.2 ~ 110.8 dBuV/m@3m] 5.720-5725 GHz: e.i.r.p. 15.6 ~ 27 dBm [110.8 ~ 122.2 dBuV/m@3m] 5.850-5.855 GHz: e.i.r.p. 27 ~ 15.6 dBm [122.2 ~ 110.8 dBuV/m@3m] 5.855-5.875 GHz: e.i.r.p. 15.6 ~ 10 dBm [110.8 ~ 105.2 dBuV/m@3m] 5.875-5.925 GHz: e.i.r.p. 10 ~ -27 dBm [105.2 ~ 68.2dBuV/m@3m] Other un-restricted band: e.i.r.p. -27 dBm [68.2 dBuV/m@3m] |

Note 1: Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

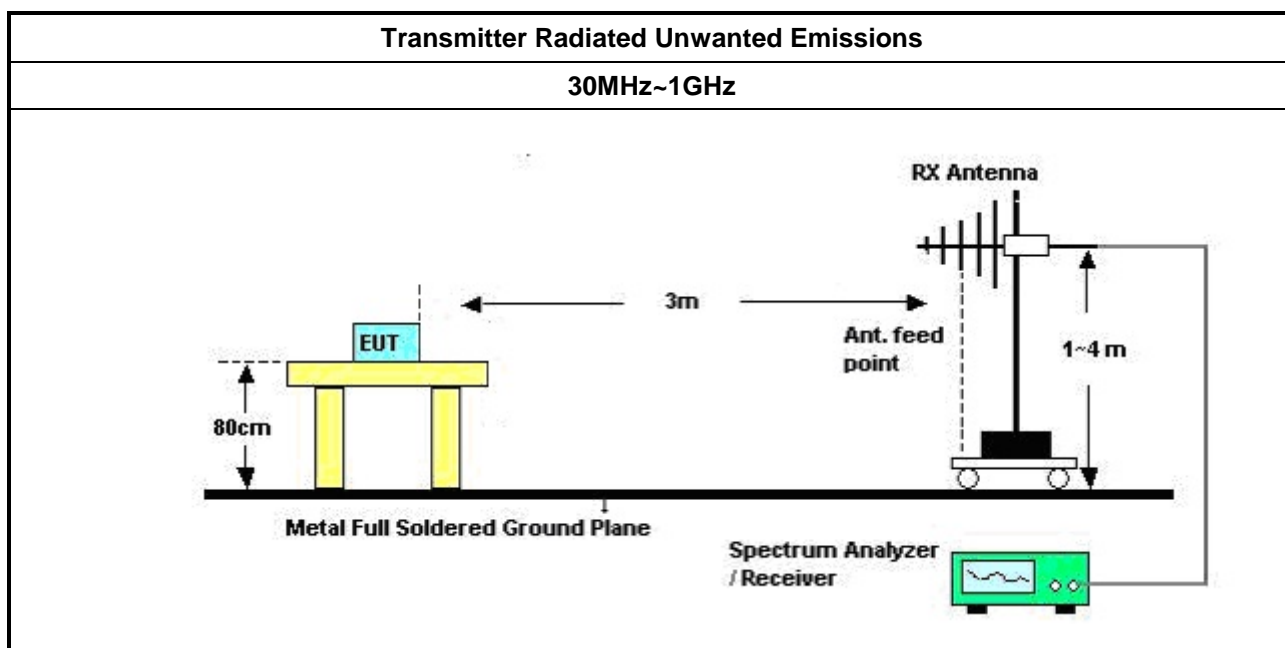
| Test Method | |
|--|---|
| <ul style="list-style-type: none"> Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements). | |
| <ul style="list-style-type: none"> The average emission levels shall be measured in [duty cycle \geq 98 or duty factor]. | |
| <ul style="list-style-type: none"> For the transmitter unwanted emissions shall be measured using following options below: | |
| | <ul style="list-style-type: none"> Refer as KDB 789033, clause G)2) for unwanted emissions into non-restricted bands. |
| | <ul style="list-style-type: none"> Refer as KDB 789033, clause G)1) for unwanted emissions into restricted bands. |
| <input checked="" type="checkbox"/> | Refer as KDB 789033, G)6) Method VB (ANSI C63.10, clause 4.1.4.2.3), Reduced VBW. |
| <input checked="" type="checkbox"/> | Refer as KDB 789033, clause G)5) (ANSI C63.10, clause 4.1.4.2.2), measurement procedure peak limit. |
| <ul style="list-style-type: none"> For radiated measurement. | |
| | <ul style="list-style-type: none"> Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m. |
| | <ul style="list-style-type: none"> Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m. |
| | <ul style="list-style-type: none"> Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz. |
| <ul style="list-style-type: none"> The any unwanted emissions level shall not exceed the fundamental emission level. | |
| <ul style="list-style-type: none"> Use the following spectrum analyzer settings: | |
| | <ul style="list-style-type: none"> Set RBW=100 kHz for $f < 1$ GHz; VBW=3 * RBW; Sweep = auto; Detector function = peak; Trace = max hold. |
| | <ul style="list-style-type: none"> Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement. For average measurement, refer as 1.1.4. |
| <ul style="list-style-type: none"> KDB 414788 Open-Field Test Sites and Chamber Correlation Justification. | |
| | <ul style="list-style-type: none"> Based on FCC 15.31(f)(2): measurements may be performed at a distance closer than that specified in regulations; however, an attempt should be made to avoid making measurements in the near field. |
| | <ul style="list-style-type: none"> Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result. |

3.1.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamplifier Factor)

3.1.5 Test Setup



3.1.6 Transmitter Unwanted Emissions (Below 30MHz)

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

3.1.7 Test Result of Transmitter Unwanted Emissions

Refer as Appendix A

4 Test Equipment and Calibration Data

Instrument for Radiated Test

| Instrument | Manufacturer /Brand | Model No. | Serial No. | Spec. | Calibration Date | Calibration Due Date |
|--------------------------------|---------------------|-------------------|-------------------|---------------|------------------|----------------------|
| 3m Semi Anechoic Chamber | SIDT FRANKONIA | SAC-3M | 03CH03-HY | 30MHz~1GHz 3m | 14/Jul/2024 | 13/Jul/2025 |
| EMI Test Receiver | R&S | ESR3 | 102051 | 9kHz~3.6GHz | 17/May/2024 | 16/May/2025 |
| Signal Analyzer | R&S | FSV40 | 101500 | 10Hz~40GHz | 01/Nov/2024 | 31/Oct/2025 |
| Loop Antenna | TESEQ | HLA 6120 | 31244 | 9kHz~30MHz | 19/Mar/2024 | 18/Mar/2025 |
| Bilog Antenna & 6dB Attenuator | SCHAFFNER / EMCI | CBL6112B / N-6-05 | 22237 / AT-N-0603 | 30MHz~1GHz | 14/Oct/2024 | 13/Oct/2025 |
| RF Cable-R03m | Jye Bao | RG142 | CB021 | 9kHz~30MHz | 12/Jun/2024 | 11/Jun/2025 |
| RF Cable-R03m | Jye Bao | RG142 | 03CH03-cable-02 | 30MHz~1GHz | 12/Jun/2024 | 11/Jun/2025 |
| Amplifier | Aglient | 8447D | 2944A08033 | 100kHz~1.3GHz | 13/Sep/2024 | 12/Sep/2025 |
| SENSE-15247_DTS | Sporton | V5.11.19 | N/A | N/A | N/A | N/A |



Summary

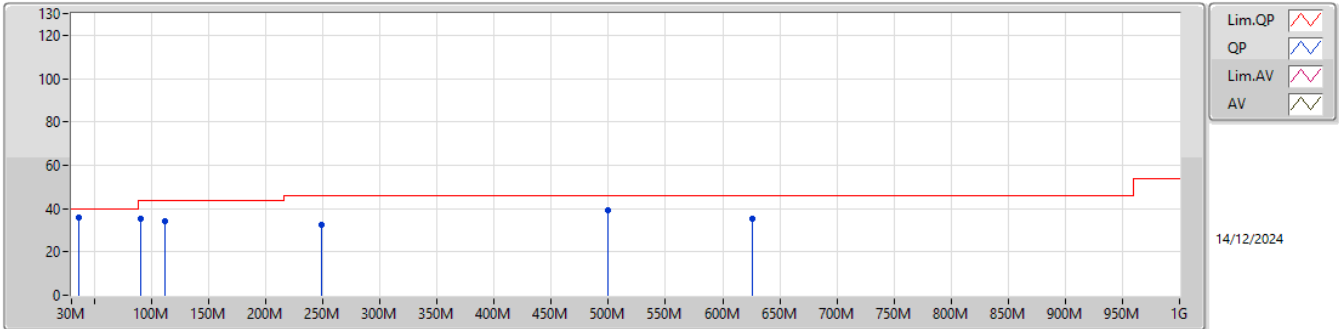
| Mode | Result | Type | Freq (Hz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Dist (m) | Condition | Azimuth (°) | Height (m) |
|--------------------------------|--------|------|--------------|-------------------|-------------------|----------------|-------------|-----------|----------------|---------------|
| 5.725-5.85GHz | - | - | - | - | - | - | - | - | - | - |
| 802.11ax HEW80_Nss1,(MCS0)_2TX | Pass | QP | 36.84M | 35.66 | 40.00 | -4.34 | 3 | Vertical | 279 | 1.06 |

Result

| Mode | Result | Type | Freq (Hz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Dist (m) | Condition | Azimuth (°) | Height (m) |
|--------------------------------|--------|------|--------------|-------------------|-------------------|----------------|-------------|------------|----------------|---------------|
| 802.11ax HEW80_Nss1,(MCS0)_2TX | - | - | - | - | - | - | - | - | - | - |
| 5775MHz | Pass | PK | 90.14M | 35.17 | 43.50 | -8.33 | 3 | Vertical | 360 | 1.00 |
| 5775MHz | Pass | PK | 111.48M | 33.99 | 43.50 | -9.51 | 3 | Vertical | 360 | 1.00 |
| 5775MHz | Pass | PK | 249.22M | 32.50 | 46.00 | -13.50 | 3 | Vertical | 360 | 1.00 |
| 5775MHz | Pass | PK | 499.48M | 39.41 | 46.00 | -6.59 | 3 | Vertical | 360 | 1.00 |
| 5775MHz | Pass | PK | 625.58M | 35.39 | 46.00 | -10.61 | 3 | Vertical | 360 | 1.00 |
| 5775MHz | Pass | QP | 36.84M | 35.66 | 40.00 | -4.34 | 3 | Vertical | 279 | 1.06 |
| 5775MHz | Pass | PK | 111.48M | 35.23 | 43.50 | -8.27 | 3 | Horizontal | 0 | 1.00 |
| 5775MHz | Pass | PK | 198.78M | 31.71 | 43.50 | -11.79 | 3 | Horizontal | 0 | 1.00 |
| 5775MHz | Pass | PK | 249.27M | 40.98 | 46.00 | -5.02 | 3 | Horizontal | 0 | 1.00 |
| 5775MHz | Pass | PK | 499.48M | 36.51 | 46.00 | -9.49 | 3 | Horizontal | 0 | 1.00 |
| 5775MHz | Pass | PK | 625.58M | 37.76 | 46.00 | -8.24 | 3 | Horizontal | 0 | 1.00 |
| 5775MHz | Pass | PK | 730.34M | 41.13 | 46.00 | -4.87 | 3 | Horizontal | 0 | 1.00 |

5.725-5.85GHz_802.11ax HEW80_Nss1,(MCS0)_2TX

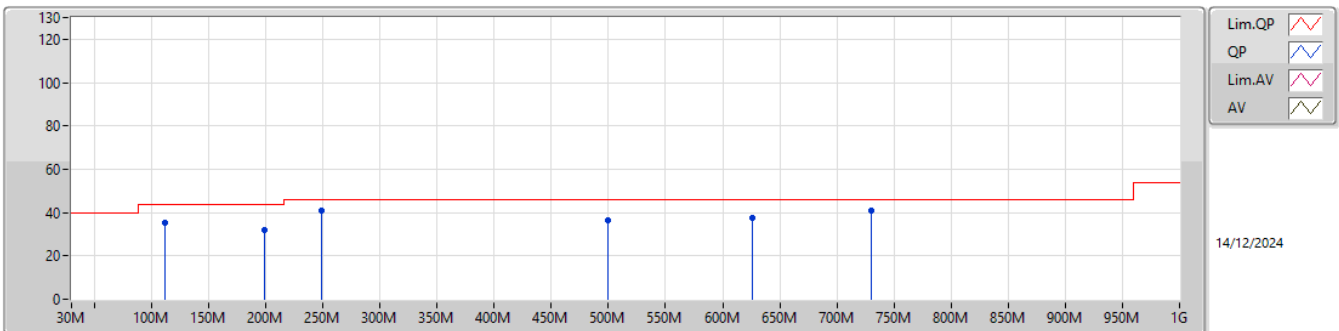
5775MHz_Test Fixture



| Type | Freq (Hz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Factor (dB) | Dist (m) | Condition | Azimuth (°) | Height (m) | Raw (dBuV) | AF (dB) | CL (dB) | PA (dB) | | | | |
|------|--------------|-------------------|-------------------|----------------|----------------|-------------|-----------|----------------|---------------|---------------|------------|------------|------------|--|--|--|--|
| PK | 90.14M | 35.17 | 43.50 | -8.33 | -11.16 | 3 | Vertical | 360 | 1.00 | 46.33 | 15.25 | 0.91 | 27.32 | | | | |
| PK | 111.48M | 33.99 | 43.50 | -9.51 | -7.79 | 3 | Vertical | 360 | 1.00 | 41.78 | 18.32 | 1.14 | 27.25 | | | | |
| PK | 249.22M | 32.50 | 46.00 | -13.50 | -6.12 | 3 | Vertical | 360 | 1.00 | 38.62 | 18.46 | 2.16 | 26.74 | | | | |
| PK | 499.48M | 39.41 | 46.00 | -6.59 | -1.29 | 3 | Vertical | 360 | 1.00 | 40.70 | 23.65 | 3.24 | 28.18 | | | | |
| PK | 625.58M | 35.39 | 46.00 | -10.61 | 0.46 | 3 | Vertical | 360 | 1.00 | 34.93 | 25.00 | 3.68 | 28.22 | | | | |
| QP | 36.84M | 35.66 | 40.00 | -4.34 | -6.42 | 3 | Vertical | 279 | 1.06 | 42.08 | 20.78 | 0.29 | 27.49 | | | | |

5.725-5.85GHz_802.11ax HEW80_Nss1,(MCS0)_2TX

5775MHz_Test Fixture



| Type | Freq (Hz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Factor (dB) | Dist (m) | Condition | Azimuth (°) | Height (m) | Raw (dBuV) | AF (dB) | CL (dB) | PA (dB) | | | | |
|------|--------------|-------------------|-------------------|----------------|----------------|-------------|------------|----------------|---------------|---------------|------------|------------|------------|--|--|--|--|
| PK | 111.48M | 35.23 | 43.50 | -8.27 | -7.79 | 3 | Horizontal | 0 | 1.00 | 43.02 | 18.32 | 1.14 | 27.25 | | | | |
| PK | 198.78M | 31.71 | 43.50 | -11.79 | -9.57 | 3 | Horizontal | 0 | 1.00 | 41.28 | 15.36 | 2.02 | 26.95 | | | | |
| PK | 249.27M | 40.98 | 46.00 | -5.02 | -6.11 | 3 | Horizontal | 0 | 1.00 | 47.09 | 18.47 | 2.16 | 26.74 | | | | |
| PK | 499.48M | 36.51 | 46.00 | -9.49 | -1.29 | 3 | Horizontal | 0 | 1.00 | 37.80 | 23.65 | 3.24 | 28.18 | | | | |
| PK | 625.58M | 37.76 | 46.00 | -8.24 | 0.46 | 3 | Horizontal | 0 | 1.00 | 37.30 | 25.00 | 3.68 | 28.22 | | | | |
| PK | 730.34M | 41.13 | 46.00 | -4.87 | 1.66 | 3 | Horizontal | 0 | 1.00 | 39.47 | 25.83 | 4.00 | 28.17 | | | | |