



# TEST REPORT

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                           |                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------------|
| <b>KCTL Eurofins KCTL Co.Ltd.</b><br>65, Sinwon-ro, Yeongtong-gu,<br>Suwon-si, Gyeonggi-do, 16677, Korea<br>TEL: 82-70-4904-0113<br>FAX: 82-505-299-8311<br><a href="http://www.kctl.co.kr">www.kctl.co.kr</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Report No.:<br><b>KR24-SRF0137-C</b><br>Page (1) of (127) |                                                       |
| <p><b>1. Client</b></p> <ul style="list-style-type: none"> <li>Name : Samsung Electronics Co., Ltd.</li> <li>Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea</li> <li>Date of Receipt : 2024-07-01</li> </ul> <p><b>2. Use of Report</b> : Class II Permissive Change (FCC)<br/>Class III Permissive Change (ISED)</p> <p><b>3. Name of Product / Model</b> : Wi-Fi/BLE combo module / ACAU710R</p> <p><b>4. Manufacturer / Country of Origin</b> : Samsung Electronics Co., Ltd. / Korea</p> <p><b>5. FCC ID</b> : A3LACAU710R</p> <p><b>6. IC Certificate No.</b> : 649E-ACAU710R</p> <p><b>7. Date of Test</b> : 2024-07-12 to 2024-10-02</p> <p><b>8. Location of Test</b> : <input checked="" type="checkbox"/> Permanent Testing Lab <input type="checkbox"/> On Site Testing<br/>         (Address: 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea)</p> <p><b>9. Test method used</b> : FCC Part 15 Subpart E, 15.407<br/>         RSS-247 Issue 3 August 2023<br/>         RSS-Gen Issue 5 February 2021</p> <p><b>10. Test Result</b> : Refer to the test result in the test report<br/>         This laboratory is not accredited for the test results marked. *</p> |                                                           |                                                       |
| Affirmation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Tested by<br><br>Name : Euijung Kim (Signature)           | Technical Manager<br><br>Name : Harim Lee (Signature) |
| <p>The above testing certificate is the accredited test result by Korea Laboratory Accreditation Scheme, which signed the ILAC-MRA.</p> <p style="text-align: right;">2025-07-16</p> <p>Accredited by KOLAS, Republic of KOREA <b>Eurofins KCTL Co.,Ltd.</b></p> <p>As a test result of the sample which was submitted from the client, this report does not guarantee the whole product quality. This test report should not be used and copied without a written agreement by Eurofins KCTL Co.,Ltd.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                           |                                                       |

|                                                                                                                                                                                                                                                                                            |                                                                         |                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## REPORT REVISION HISTORY

| Date       | Revision                                     | Page No         |
|------------|----------------------------------------------|-----------------|
| 2024-10-11 | Originally issued                            | -               |
| 2024-10-16 | Updated                                      | 1, 59 ~ 67, 127 |
| 2025-07-08 | Updated for WLAN 2.4 GHz channel information | 4               |
| 2025-07-16 | Update of certification method (ISED)        | 1               |
|            |                                              |                 |

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Note. The report No. KR24-SRF0137-B is superseded by the report No. KR24-SRF0137-C.

## General remarks for test reports

### Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

☐ Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:

### Procedure number, issue date and title:

Calculations leading to the reported values are on file with the testing laboratory that conducted the testing.

☒ Statement not required by the standard or client used for type testing

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## 1. General information

Client : Samsung Electronics Co., Ltd.  
 Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea  
 Manufacturer : Samsung Electronics Co., Ltd.  
 Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea  
 Factory : Chengdu Xuguang Technology Co., Ltd  
 Address : No.86 2nd Section, Park Road, Longquanyi District, Chengdu City, Sichuan Province, P.R. China  
 Laboratory : Eurofins KCTL Co., Ltd.  
 Address : 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea  
 Accreditations : FCC Site Designation No: KR0040, FCC Site Registration No: 687132  
 VCCI Registration No. : R-20080, G-20078, C-20059, T-20056  
 CAB Identifier: KR0040  
 ISED Number: 8035A  
 KOLAS No.: KT231

## 2. Device information

Equipment under test : Wi-Fi/BLE combo module  
 Model : ACAU710R  
 Modulation technique : Bluetooth(BDR/EDR) : GFSK,  $\pi/4$ DQPSK, 8DPSK  
 Bluetooth(BLE) : GFSK  
 WIFI(802.11a/b/g/n/ac/ax) : DSSS, OFDM, OFDMA  
 Number of channels : Bluetooth : 79 ch  
 BLE : 40 ch  
 2.4 GHz WLAN : 13 ch (20 MHz)  
 UNII 1 : 4 ch (20 MHz)  
 UNII 2A : 4 ch (20 MHz)  
 UNII 2C : 12 ch (20 MHz)  
 UNII 3 : 5 ch (20 MHz)  
 Power source : DC 5 V, 12 V  
 Antenna specification : Chip antenna  
 Antenna gain : BT/BLE/2.4 GHz WLAN : -0.10 dBi  
 UNII 1 : 0.90 dBi  
 UNII 2A : 0.20 dBi  
 UNII 2C : -0.40 dBi  
 UNII 3 : -0.70 dBi  
 Frequency range : Bluetooth : 2 402 MHz ~ 2 480 MHz (BDR/EDR/BLE)  
 2.4 GHz WLAN : 2 412 MHz ~ 2 472 MHz (802.11b/g/n/ax\_HT20/HE20)  
 UNII-1 : 5 180 MHz ~ 5 240 MHz (802.11a/n/ac/ax\_HT20/VHT20/HE20)  
 UNII-2A : 5 260 MHz ~ 5 320 MHz (802.11a/n/ac/ax\_HT20/VHT20/HE20)  
 UNII-2C : 5 500 MHz ~ 5 720 MHz (802.11a/n/ac/ax\_HT20/VHT20/HE20)  
 UNII-3 : 5 745 MHz ~ 5 825 MHz (802.11a/n/ac/ax\_HT20/VHT20/HE20)  
 Software version : v1.1  
 Hardware version : v1.0  
 Test device serial No. : Conducted : 9C443D587C84  
 Radiated : C8A6ER364B08  
 Operation temperature : -20 °C ~ 85 °C

## 2.1. Frequency/channel operations

This device contains the following capabilities:

WLAN (11a/b/g/n/ac/ax), Bluetooth (BDR/EDR/BLE)

### UNII-1

| Ch. | Frequency (MHz) |
|-----|-----------------|
| 36  | 5 180           |
| 40  | 5 200           |
| 48  | 5 240           |

### UNII-2A

| Ch. | Frequency (MHz) |
|-----|-----------------|
| 52  | 5 260           |
| 56  | 5 280           |
| 64  | 5 320           |

### UNII-2C

| Ch. | Frequency (MHz) |
|-----|-----------------|
| 100 | 5 500           |
| 120 | 5 600           |
| 140 | 5 700           |
| 144 | 5 720           |

### UNII-3

| Ch. | Frequency (MHz) |
|-----|-----------------|
| 149 | 5 745           |
| 157 | 5 785           |
| 165 | 5 825           |

Table 2.1.1. 802.11ax HE20 mode

## 2.2. RF power setting in TEST SW

| Mode         | RU Type |           | Frequency (MHz) | Power Setting |
|--------------|---------|-----------|-----------------|---------------|
|              | RU Tone | RU offset |                 |               |
| 802.11a      | N/A     | N/A       | 5 180           | 16.00         |
|              |         |           | 5 200           | 16.00         |
|              |         |           | 5 240           | 15.00         |
|              |         |           | 5 260           | 16.00         |
|              |         |           | 5 280           | 16.00         |
|              |         |           | 5 320           | 16.00         |
|              |         |           | 5 500           | 16.00         |
|              |         |           | 5 600           | 16.00         |
|              |         |           | 5 660           | 16.00         |
|              |         |           | 5 700           | 16.00         |
|              |         |           | 5 720           | 16.00         |
|              |         |           | 5 745           | 10.50         |
|              |         |           | 5 785           | 10.50         |
|              |         |           | 5 825           | 10.50         |
| 802.11n HT20 | N/A     | N/A       | 5 180           | 15.00         |
|              |         |           | 5 200           | 15.00         |
|              |         |           | 5 240           | 15.00         |
|              |         |           | 5 260           | 15.00         |
|              |         |           | 5 280           | 15.00         |
|              |         |           | 5 320           | 15.00         |
|              |         |           | 5 500           | 15.00         |
|              |         |           | 5 600           | 15.00         |
|              |         |           | 5 660           | 15.00         |
|              |         |           | 5 700           | 15.00         |
|              |         |           | 5 720           | 15.00         |
|              |         |           | 5 745           | 10.50         |
|              |         |           | 5 785           | 10.50         |
|              |         |           | 5 825           | 10.50         |

| Mode           | RU Type |           | Frequency (MHz) | Power Setting |
|----------------|---------|-----------|-----------------|---------------|
|                | RU Tone | RU offset |                 |               |
| 802.11ac VHT20 | N/A     | N/A       | 5 180           | 15.00         |
|                |         |           | 5 200           | 15.00         |
|                |         |           | 5 240           | 15.00         |
|                |         |           | 5 260           | 15.00         |
|                |         |           | 5 280           | 15.00         |
|                |         |           | 5 320           | 15.00         |
|                |         |           | 5 500           | 15.00         |
|                |         |           | 5 600           | 15.00         |
|                |         |           | 5 660           | 15.00         |
|                |         |           | 5 700           | 15.00         |
|                |         |           | 5 720           | 15.00         |
|                |         |           | 5 745           | 10.50         |
|                |         |           | 5 785           | 10.50         |
|                |         |           | 5 825           | 10.50         |
| 802.11ax HE20  | 26      | 0         | 5 180           | 13.25         |
|                |         | 4         |                 | 13.25         |
|                |         | 8         |                 | 13.25         |
|                |         | 0         | 5 200           | 13.25         |
|                |         | 4         |                 | 13.25         |
|                |         | 8         |                 | 13.25         |
|                |         | 0         | 5 240           | 6.00          |
|                |         | 4         |                 | 6.00          |
|                |         | 8         |                 | 6.00          |
|                |         | 0         | 5 260           | 12.25         |
|                |         | 4         |                 | 12.25         |
|                |         | 8         |                 | 12.25         |
|                |         | 0         | 5 280           | 12.25         |
|                |         | 4         |                 | 12.25         |
|                |         | 8         |                 | 12.25         |
|                |         | 0         | 5 320           | 12.25         |
|                |         | 4         |                 | 12.25         |
|                |         | 8         |                 | 12.25         |
|                |         | 0         | 5 500           | 12.50         |
|                |         | 4         |                 | 12.50         |
|                |         | 8         |                 | 12.50         |
|                |         | 0         | 5 600           | 12.50         |
|                |         | 4         |                 | 12.50         |
|                |         | 8         |                 | 12.50         |
|                |         | 0         | 5 660           | 12.50         |
|                |         | 4         |                 | 12.50         |
|                |         | 8         |                 | 12.50         |

| Mode          | RU Type |           | Frequency (MHz) | Power Setting |
|---------------|---------|-----------|-----------------|---------------|
|               | RU Tone | RU offset |                 |               |
| 802.11ax HE20 | 26      | 0         | 5 700           | 12.50         |
|               |         | 4         |                 | 12.50         |
|               |         | 8         |                 | 12.50         |
|               |         | 0         | 5 720           | 12.50         |
|               |         | 4         |                 | 12.50         |
|               |         | 8         |                 | 12.50         |
|               |         | 0         | 5 745           | 10.50         |
|               |         | 4         |                 | 10.50         |
|               |         | 8         |                 | 10.50         |
|               |         | 0         | 5 785           | 10.50         |
|               |         | 4         |                 | 10.50         |
|               |         | 8         |                 | 10.50         |
|               |         | 0         | 5 825           | 10.50         |
|               |         | 4         |                 | 10.50         |
|               |         | 8         |                 | 10.50         |
|               | 52      | 37        | 5 180           | 15.25         |
|               |         | 38        |                 | 15.25         |
|               |         | 40        |                 | 15.25         |
|               |         | 37        | 5 200           | 15.25         |
|               |         | 38        |                 | 15.25         |
|               |         | 40        |                 | 15.25         |
|               |         | 37        | 5 240           | 8.00          |
|               |         | 38        |                 | 8.00          |
|               |         | 40        |                 | 8.00          |
|               |         | 37        | 5 260           | 14.50         |
|               |         | 38        |                 | 14.50         |
|               |         | 40        |                 | 14.50         |
|               |         | 37        | 5 280           | 14.50         |
|               |         | 38        |                 | 14.50         |
|               |         | 40        |                 | 14.50         |
|               |         | 37        | 5 320           | 14.50         |
|               |         | 38        |                 | 14.50         |
|               |         | 40        |                 | 14.50         |
|               |         | 37        | 5 500           | 15.00         |
|               |         | 38        |                 | 15.00         |
|               |         | 40        |                 | 15.00         |
|               |         | 37        | 5 600           | 14.75         |
|               |         | 38        |                 | 14.75         |
|               |         | 40        |                 | 14.75         |
|               |         | 37        | 5 660           | 15.00         |
|               |         | 38        |                 | 15.00         |
|               |         | 40        |                 | 15.00         |

| Mode          | RU Type |           | Frequency (MHz) | Power Setting |
|---------------|---------|-----------|-----------------|---------------|
|               | RU Tone | RU offset |                 |               |
| 802.11ax HE20 | 52      | 37        | 5 700           | 14.50         |
|               |         | 38        |                 | 14.50         |
|               |         | 40        |                 | 14.50         |
|               |         | 37        | 5 720           | 14.50         |
|               |         | 38        |                 | 14.50         |
|               |         | 40        |                 | 14.50         |
|               |         | 37        | 5 745           | 10.50         |
|               |         | 38        |                 | 10.50         |
|               |         | 40        |                 | 10.50         |
|               |         | 37        | 5 785           | 10.50         |
|               |         | 38        |                 | 10.50         |
|               |         | 40        |                 | 10.50         |
|               |         | 37        | 5 825           | 10.50         |
|               |         | 38        |                 | 10.50         |
|               |         | 40        |                 | 10.50         |
|               | 106     | 53        | 5 180           | 15.25         |
|               |         | 54        |                 | 15.25         |
|               |         | 53        | 5 200           | 15.25         |
|               |         | 54        |                 | 15.25         |
|               |         | 53        | 5 240           | 11.50         |
|               |         | 54        |                 | 11.50         |
|               |         | 53        | 5 260           | 14.75         |
|               |         | 54        |                 | 14.75         |
|               |         | 53        | 5 280           | 14.75         |
|               |         | 54        |                 | 14.75         |
|               |         | 53        | 5 320           | 15.25         |
|               |         | 54        |                 | 15.25         |
|               |         | 53        | 5 500           | 15.25         |
|               |         | 54        |                 | 15.25         |
|               |         | 53        | 5 600           | 14.75         |
|               |         | 54        |                 | 14.75         |
|               |         | 53        | 5 660           | 15.25         |
|               |         | 54        |                 | 15.25         |
|               |         | 53        | 5 700           | 14.50         |
|               |         | 54        |                 | 14.50         |
|               |         | 53        | 5 720           | 14.50         |
|               |         | 54        |                 | 14.50         |
|               |         | 53        | 5 745           | 10.50         |
|               |         | 54        |                 | 10.50         |
|               |         | 53        | 5 785           | 10.50         |
|               |         | 54        |                 | 10.50         |
|               |         | 53        | 5 825           | 10.50         |
|               |         | 54        |                 | 10.50         |

| Mode          | RU Type |           | Frequency (MHz) | Power Setting |
|---------------|---------|-----------|-----------------|---------------|
|               | RU Tone | RU offset |                 |               |
| 802.11ax HE20 | 242     | 61        | 5 180           | 15.25         |
|               |         |           | 5 200           | 15.25         |
|               |         |           | 5 240           | 14.75         |
|               |         |           | 5 260           | 14.75         |
|               |         |           | 5 280           | 14.75         |
|               |         |           | 5 320           | 15.25         |
|               |         |           | 5 500           | 15.25         |
|               |         |           | 5 600           | 14.75         |
|               |         |           | 5 660           | 15.25         |
|               |         |           | 5 700           | 14.50         |
|               |         |           | 5 720           | 14.50         |
|               |         |           | 5 745           | 10.50         |
|               |         |           | 5 785           | 10.50         |
|               |         |           | 5 825           | 10.50         |
|               | SU      | -         | 5 180           | 15.25         |
|               |         |           | 5 200           | 15.25         |
|               |         |           | 5 240           | 14.75         |
|               |         |           | 5 260           | 14.75         |
|               |         |           | 5 280           | 14.75         |
|               |         |           | 5 320           | 15.25         |
|               |         |           | 5 500           | 15.25         |
|               |         |           | 5 600           | 14.75         |
|               |         |           | 5 660           | 15.25         |
|               |         |           | 5 700           | 14.50         |
|               |         |           | 5 720           | 14.50         |
|               |         |           | 5 745           | 10.50         |
|               |         |           | 5 785           | 10.50         |
|               |         |           | 5 825           | 10.50         |

### 2.3. Test RU offset for tones in each modes

| BW<br>(MHz) | Tones<br>(T) | RU offset | Test RU offset |        |      |
|-------------|--------------|-----------|----------------|--------|------|
|             |              |           | Low            | Mid    | High |
| 20          | 26           | 0 ~ 8     | 0              | 4      | 8    |
|             | 52           | 37 ~ 40   | 37             | 38     | 40   |
|             | 106          | 53 ~ 54   | 53             | -      | 54   |
|             | 242          | 61 / SU   | -              | 61 / - | -    |

### 2.4. Band portion of RU allocation about straddle channels

| Mode | Channel               | Tone number in RU | RU offset | Portion          |
|------|-----------------------|-------------------|-----------|------------------|
| HE20 | Straddle<br>5 720 MHz | 26T               | 0         | UNII-2C          |
|      |                       |                   | 4         | UNII-2C          |
|      |                       |                   | 8         | UNII-3           |
|      |                       | 52T               | 37        | UNII-2C          |
|      |                       |                   | 38        | UNII-2C          |
|      |                       |                   | 40        | UNII-3           |
|      |                       | 106T              | 53        | UNII-2C          |
|      |                       |                   | 54        | UNII-2C & UNII-3 |
|      |                       | 242T / SU         | 61 / -    | UNII-2C & UNII-3 |

**2.5. Duty Cycle Factor**

| Test mode |      | ANT  | Tone | Period (ms) | T <sub>on</sub> time (ms) | Duty cycle |       | Duty cycle factor (dB) |
|-----------|------|------|------|-------------|---------------------------|------------|-------|------------------------|
|           |      |      |      |             |                           | (Linear)   | (%)   |                        |
| 802.11ax  | HE20 | SISO | 26T  | 2.108 7     | 2.003 4                   | 0.950 1    | 95.01 | 0.22                   |
|           |      |      | 52T  | 2.123 1     | 2.018 7                   | 0.950 8    | 95.08 | 0.22                   |
|           |      |      | 106T | 2.123 1     | 2.018 7                   | 0.950 8    | 95.08 | 0.22                   |
|           |      |      | 242T | 2.122 2     | 2.018 7                   | 0.951 2    | 95.12 | 0.22                   |
|           |      |      | SU   | 1.556 8     | 1.453 2                   | 0.933 5    | 93.35 | 0.30                   |

**Notes.**

1. Duty cycle (Linear) = Ton time / Period
2. DCF(Duty cycle factor) =  $10\log(1/\text{duty cycle})$
3. DCF is not compensated to average result if duty cycle is more than 98%
4. Please refer to Appendix A for plots.

### 3. Antenna requirement

#### **Requirement of FCC part section 15.203**

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

#### **Requirement of RSS-Gen Section 6.8:**

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.

The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

- The transmitter has permanently attached Chip Antenna (Internal antenna) on board.
- The E.U.T Complies with the requirement of §15.203, §15.247, §15.407.

#### 4. Summary of tests

| FCC Part section(s)                   | IC Rule Reference                                   | Parameter                      | Test Condition | Test results |
|---------------------------------------|-----------------------------------------------------|--------------------------------|----------------|--------------|
| 15.407(a)                             | RSS-247 Issue 2, 6.2                                | Maximum conducted output power | Conducted      | Pass         |
| 15.407(a)                             | RSS-247 Issue 2, 6.2                                | Maximum power spectral density |                | Pass         |
| 15.407(a)                             | RSS-Gen Issue 5, 6.7                                | 26 dB Channel Bandwidth        |                | Pass         |
| 15.407(e)                             | RSS-247 Issue 2, 6.2.4                              | 6 dB Channel Bandwidth         |                | Pass         |
| -                                     | RSS-Gen Issue 5, 6.7                                | Occupied Bandwidth             |                | Pass         |
| 15.207(a)                             | RSS-Gen Issue 5, 8.8                                | AC Conducted Emissions         |                | Pass         |
| 15.407(b),<br>15.205(a),<br>15.209(a) | RSS-Gen Issue 5, 8.9, 8.10<br>RSS-247 Issue 2, 6.2, | Spurious emission              | Radiated       | Pass         |
|                                       |                                                     | Band-edge, restricted band     |                | Pass         |

#### Notes.

1. All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
2. According to exploratory test no any obvious emission were detected from 9 kHz to 30 MHz. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30 m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.
3. EUT was investigated in three orthogonal orientations X, Y and Z. it was determined that X orientation was worst-case orientation. Therefore, all final radiated testing was performed with the EUT in X orientation.
4. All configurations have been performed (Stand-alone, Stand-alone with TA, With accessories).  
Worst case: Stand-alone with TA
5. The test procedure(s) in this report were performed in accordance as following.
  - ANSI C63.10-2013
  - KDB 662911 D01 v02r01
  - KDB 789033 D02 v02r01
6. Based on the baseline scan, the worst-case data rates were:  
802.11ax HE20 mode: MCS0
7. For AC Conducted emission and spurious emission below 1 GHz, please refer to 15.407 legacy test report.

## 5. Measurement uncertainty

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2013.

All measurement uncertainty values are shown with a coverage factor of  $k=2$  to indicated a 95 % level of confidence. The measurement data shown herein meets or exceeds the  $U_{\text{CISPR}}$  measurement uncertainty values specified in CISPR 16-4-2 and thus, can be compared directly to specified limits to determine compliance.

| Parameter                                                  | Expanded uncertainty ( $\pm$ ) |        |
|------------------------------------------------------------|--------------------------------|--------|
| Maximum Peak Output Power                                  | 0.9 dB                         |        |
| Peak Power Spectral Density                                | 1.0 dB                         |        |
| 6 dB Channel Bandwidth                                     | 0.1 %                          |        |
| Occupied Bandwidth                                         | 0.1 %                          |        |
| Conducted spurious emission                                | 1.9 dB                         |        |
| Conducted Emissions                                        | 150 kHz to 30 MHz              | 2.8 dB |
| Radiated spurious Emissions<br>(Bandedge, restricted band) | Below 30 MHz                   | 2.3 dB |
|                                                            | 30 MHz to 1 000 MHz            | 2.5 dB |
|                                                            | 1 000 MHz to 18 000 MHz        | 4.7 dB |
|                                                            | Above 18 000 MHz               | 4.8 dB |

## 6. Measurement results explanation example

The offset level is set in the spectrum analyzer to compensate the RF cable loss factor between EUT conducted output port and spectrum analyzer.

With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

| Frequency (MHz) | Factor(dB) | Frequency (MHz) | Factor(dB) |
|-----------------|------------|-----------------|------------|
| 30              | 9.94       | 9 000           | 13.16      |
| 50              | 10.03      | 10 000          | 13.21      |
| 100             | 10.14      | 11 000          | 13.41      |
| 200             | 10.26      | 12 000          | 13.47      |
| 300             | 10.41      | 13 000          | 13.51      |
| 400             | 10.49      | 14 000          | 13.32      |
| 500             | 10.47      | 15 000          | 13.41      |
| 600             | 10.59      | 16 000          | 13.73      |
| 700             | 10.64      | 17 000          | 13.77      |
| 800             | 10.66      | 18 000          | 13.86      |
| 900             | 10.72      | 19 000          | 13.53      |
| 1 000           | 10.66      | 20 000          | 13.74      |
| 2 000           | 11.13      | 21 000          | 13.86      |
| 3 000           | 11.51      | 22 000          | 13.93      |
| 4 000           | 11.58      | 23 000          | 14.32      |
| 5 000           | 12.00      | 24 000          | 13.84      |
| 6 000           | 12.21      | 25 000          | 14.05      |
| 7 000           | 13.05      | 26 000          | 14.70      |
| 8 000           | 13.09      | 26 500          | 14.88      |

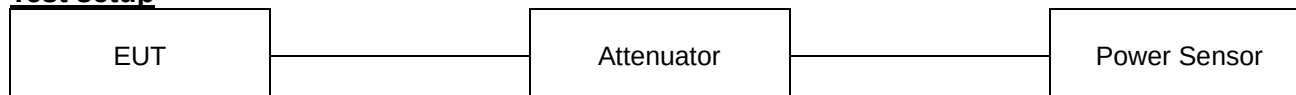
### Notes:

Offset(dB) = RF cable loss(dB) + Attenuator(dB)

## 7. Test results

### 7.1. Maximum conducted output power

#### Test setup



#### Limit

According to §15.407(a), RSS-247(6.2)

#### FCC

| Band    | EUT category                      | Conducted output power limit            |
|---------|-----------------------------------|-----------------------------------------|
| UNII-1  | Outdoor access point              | 1 W (30 dBm)                            |
|         | Indoor access point               |                                         |
|         | Fixed point-to-point access point |                                         |
|         | ✓ Client device                   | 250 mW (23.98 dBm)                      |
| UNII-2A | ✓                                 | 250 mW or 11 dBm + 10logB <sup>1)</sup> |
| UNII-2C | ✓                                 | 250 mW or 11 dBm + 10logB <sup>1)</sup> |
| UNII-3  | ✓                                 | 1 W (30 dBm)                            |

#### IC

| Band    | Maximum e.i.r.p. limit                     |
|---------|--------------------------------------------|
| UNII-1  | 200 mW or 10 + 10 logB <sup>2)</sup> , dBm |
| UNII-2A | 1 W or 17 dBm + 10logB <sup>2)</sup>       |
| UNII-2C | 1 W or 17 dBm + 10logB <sup>2)</sup>       |
| UNII-3  | 1 W (30 dBm)                               |

#### Note:

- 1) Conducted output power limit B is the 26 dB emission bandwidth.
- 2) Maximum e.i.r.p. limit B is the 99% emission bandwidth.

#### Test procedure

ANSI C63.10-2013-Section 12.3.3.2 and 14.2

KDB 789033 D02 v02r01 - Section E.2.d) or E.3.a)

KDB 662911 D01 v02r01 – Section F)

**Test settings****Used test method is Section E.2.d)**◆ **KDB 789033 D02 v02r01****Section E.2.d)****Method SA-2 (trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction):**

- (i) Measure the duty cycle,  $x$ , of the transmitter output signal as described in II.B..
- (ii) Set span to encompass the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
- (iii) Set  $RBW = 1 \text{ MHz}$
- (iv) Set  $RBW \geq 3 \text{ MHz}$
- (v) Number of points in sweep  $\geq 2 \times \text{span} / RBW$ . (This ensures that bin-to-bin spacing is  $\leq RBW/2$ , so that narrowband signals are not lost between frequency bins.)
- (vi) Sweep time = auto.
- (vii) Detector = power averaging (rms), if available. Otherwise use sample detector mode.
- (viii) Do not use sweep triggering. Allow the sweep to "free run."
- (ix) Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed to ensure that the average accurately represents the true average over the on and off periods of the transmitter.
- (x) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at  $1 \text{ MHz}$  intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
- (xi) Add  $10 \log(1/x)$ , where  $x$  is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission). For example, add  $10 \log(1/0.25) = 6 \text{ dB}$  if the duty cycle is 25%.

**Section E.3.a)****Method PM (Measurement using an RF average power meter):**

- (i) Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied.
  - The EUT is configured to transmit continuously or to transmit with a constant duty cycle.
  - At all times when the EUT is transmitting, it must be transmitting at its maximum power control level.
  - The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five
- (ii) If the transmitter does not transmit continuously, measure the duty cycle,  $x$ , of the transmitter output signal as described in II
- (iii) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
- (iv) Adjust the measurement in dBm by adding  $10 \log(1/x)$  where  $x$  is the duty cycle (e.g.,  $10 \log(1/0.25)$  if the duty cycle is 25%).

**Test results****[DC 5 V]****802.11ax HE20 SISO in the UNII-1 band****Conducted Output Power**

| Channel | Frequency<br>(MHz) | Tones | RU<br>offset | Measured output power |             |                 | FCC<br>Limit<br>(dBm) | IC<br>Limit<br>(dBm) |
|---------|--------------------|-------|--------------|-----------------------|-------------|-----------------|-----------------------|----------------------|
|         |                    |       |              | Reading<br>(dBm)      | DCF<br>(dB) | Result<br>(dBm) |                       |                      |
| Low     | 5 180              | 26T   | 0            | 11.97                 | 0.22        | 12.19           | 23.98                 | 22.12                |
|         |                    |       | 4            | 12.75                 | 0.22        | 12.97           | 23.98                 | 22.12                |
|         |                    |       | 8            | 12.00                 | 0.22        | 12.22           | 23.98                 | 22.12                |
|         |                    | 52T   | 37           | 14.47                 | 0.22        | 14.69           | 23.98                 | 22.12                |
|         |                    |       | 38           | 14.96                 | 0.22        | 15.18           | 23.98                 | 22.12                |
|         |                    |       | 40           | 14.46                 | 0.22        | 14.68           | 23.98                 | 22.12                |
|         |                    | 106T  | 53           | 14.70                 | 0.22        | 14.92           | 23.98                 | 22.12                |
|         |                    |       | 54           | 14.69                 | 0.22        | 14.91           | 23.98                 | 22.12                |
|         |                    | 242T  | 61           | 14.79                 | 0.22        | 15.01           | 23.98                 | 22.12                |
|         |                    | SU    | -            | 14.61                 | 0.30        | 14.91           | 23.98                 | 22.12                |
| Mid     | 5 200              | 26T   | 0            | 11.81                 | 0.22        | 12.03           | 23.98                 | 22.12                |
|         |                    |       | 4            | 12.67                 | 0.22        | 12.89           | 23.98                 | 22.12                |
|         |                    |       | 8            | 11.82                 | 0.22        | 12.04           | 23.98                 | 22.12                |
|         |                    | 52T   | 37           | 14.48                 | 0.22        | 14.70           | 23.98                 | 22.12                |
|         |                    |       | 38           | 14.91                 | 0.22        | 15.13           | 23.98                 | 22.12                |
|         |                    |       | 40           | 14.38                 | 0.22        | 14.60           | 23.98                 | 22.12                |
|         |                    | 106T  | 53           | 14.62                 | 0.22        | 14.84           | 23.98                 | 22.12                |
|         |                    |       | 54           | 14.65                 | 0.22        | 14.87           | 23.98                 | 22.12                |
|         |                    | 242T  | 61           | 14.61                 | 0.22        | 14.83           | 23.98                 | 22.12                |
|         |                    | SU    | -            | 14.56                 | 0.30        | 14.86           | 23.98                 | 22.12                |
| High    | 5 240              | 26T   | 0            | 4.92                  | 0.22        | 5.14            | 23.98                 | 22.12                |
|         |                    |       | 4            | 5.79                  | 0.22        | 6.01            | 23.98                 | 22.12                |
|         |                    |       | 8            | 5.03                  | 0.22        | 5.25            | 23.98                 | 22.12                |
|         |                    | 52T   | 37           | 7.20                  | 0.22        | 7.42            | 23.98                 | 22.12                |
|         |                    |       | 38           | 7.72                  | 0.22        | 7.94            | 23.98                 | 22.12                |
|         |                    |       | 40           | 7.30                  | 0.22        | 7.52            | 23.98                 | 22.12                |
|         |                    | 106T  | 53           | 10.89                 | 0.22        | 11.11           | 23.98                 | 22.12                |
|         |                    |       | 54           | 10.93                 | 0.22        | 11.15           | 23.98                 | 22.12                |
|         |                    | 242T  | 61           | 14.45                 | 0.22        | 14.67           | 23.98                 | 22.12                |
|         |                    | SU    | -            | 14.35                 | 0.30        | 14.65           | 23.98                 | 22.12                |

**Note:**1. Conducted Output power(dB m) =  $10\log(10^{(\text{ANT } 1/10)} + 10^{(\text{ANT } 2/10)})$  (dB m) + DCF(dB)

**E.I.R.P.**

| Channel | Frequency (MHz) | Tones | RU offset | Conducted Output Power (dBm) | ANT gain (dBi) | MAX e.i.r.p (dBm) | MAX e.i.r.p Limit (dBm) |
|---------|-----------------|-------|-----------|------------------------------|----------------|-------------------|-------------------------|
| Low     | 5 180           | 26T   | 0         | 11.97                        | 0.90           | 13.09             | 22.12                   |
|         |                 |       | 4         | 12.75                        |                | 13.87             | 22.12                   |
|         |                 |       | 8         | 12.00                        |                | 13.12             | 22.12                   |
|         |                 | 52T   | 37        | 14.47                        |                | 15.59             | 22.12                   |
|         |                 |       | 38        | 14.96                        |                | 16.08             | 22.12                   |
|         |                 |       | 40        | 14.46                        |                | 15.58             | 22.12                   |
|         |                 | 106T  | 53        | 14.70                        |                | 15.82             | 22.12                   |
|         |                 |       | 54        | 14.69                        |                | 15.81             | 22.12                   |
|         |                 | 242T  | 61        | 14.79                        |                | 15.91             | 22.12                   |
|         |                 | SU    | -         | 14.61                        |                | 15.81             | 22.12                   |
| Mid     | 5 200           | 26T   | 0         | 11.81                        | 0.90           | 12.93             | 22.12                   |
|         |                 |       | 4         | 12.67                        |                | 13.79             | 22.12                   |
|         |                 |       | 8         | 11.82                        |                | 12.94             | 22.12                   |
|         |                 | 52T   | 37        | 14.48                        |                | 15.60             | 22.12                   |
|         |                 |       | 38        | 14.91                        |                | 16.03             | 22.12                   |
|         |                 |       | 40        | 14.38                        |                | 15.50             | 22.12                   |
|         |                 | 106T  | 53        | 14.62                        |                | 15.74             | 22.12                   |
|         |                 |       | 54        | 14.65                        |                | 15.77             | 22.12                   |
|         |                 | 242T  | 61        | 14.61                        |                | 15.73             | 22.12                   |
|         |                 | SU    | -         | 14.56                        |                | 15.76             | 22.12                   |
| High    | 5 240           | 26T   | 0         | 4.92                         | 0.90           | 6.04              | 22.12                   |
|         |                 |       | 4         | 5.79                         |                | 6.91              | 22.12                   |
|         |                 |       | 8         | 5.03                         |                | 6.15              | 22.12                   |
|         |                 | 52T   | 37        | 7.20                         |                | 8.32              | 22.12                   |
|         |                 |       | 38        | 7.72                         |                | 8.84              | 22.12                   |
|         |                 |       | 40        | 7.30                         |                | 8.42              | 22.12                   |
|         |                 | 106T  | 53        | 10.89                        |                | 12.01             | 22.12                   |
|         |                 |       | 54        | 10.93                        |                | 12.05             | 22.12                   |
|         |                 | 242T  | 61        | 14.45                        |                | 15.57             | 22.12                   |
|         |                 | SU    | -         | 14.35                        |                | 15.55             | 22.12                   |

**Note:**

1. E.I.R.P. Calculation: E.I.R.P. (dBm) = Conducted output power (dBm) + Antenna gain (dBi)

**802.11ax HE20 SISO in the UNII-2A band  
Conducted Output Power**

| Channel | Frequency<br>(MHz) | Tones | RU<br>offset | Measured output power |             |                 | FCC<br>Limit<br>(dBm) | IC<br>Limit<br>(dBm) |
|---------|--------------------|-------|--------------|-----------------------|-------------|-----------------|-----------------------|----------------------|
|         |                    |       |              | Reading<br>(dBm)      | DCF<br>(dB) | Result<br>(dBm) |                       |                      |
| Low     | 5 260              | 26T   | 0            | 11.77                 | 0.22        | 11.99           | 23.57                 | 29.18                |
|         |                    |       | 4            | 12.58                 | 0.22        | 12.80           | 23.57                 | 29.18                |
|         |                    |       | 8            | 11.77                 | 0.22        | 11.99           | 23.57                 | 29.18                |
|         |                    | 52T   | 37           | 14.38                 | 0.22        | 14.60           | 23.57                 | 29.18                |
|         |                    |       | 38           | 14.79                 | 0.22        | 15.01           | 23.57                 | 29.18                |
|         |                    |       | 40           | 14.33                 | 0.22        | 14.55           | 23.57                 | 29.18                |
|         |                    | 106T  | 53           | 14.84                 | 0.22        | 15.06           | 23.57                 | 29.18                |
|         |                    |       | 54           | 14.99                 | 0.22        | 15.21           | 23.57                 | 29.18                |
|         |                    | 242T  | 61           | 14.84                 | 0.22        | 15.06           | 23.57                 | 29.18                |
|         |                    | SU    | -            | 14.79                 | 0.30        | 15.09           | 23.57                 | 29.18                |
| Mid     | 5 280              | 26T   | 0            | 11.66                 | 0.22        | 11.88           | 23.57                 | 29.18                |
|         |                    |       | 4            | 12.47                 | 0.22        | 12.69           | 23.57                 | 29.18                |
|         |                    |       | 8            | 11.71                 | 0.22        | 11.93           | 23.57                 | 29.18                |
|         |                    | 52T   | 37           | 14.32                 | 0.22        | 14.54           | 23.57                 | 29.18                |
|         |                    |       | 38           | 14.82                 | 0.22        | 15.04           | 23.57                 | 29.18                |
|         |                    |       | 40           | 14.32                 | 0.22        | 14.54           | 23.57                 | 29.18                |
|         |                    | 106T  | 53           | 14.82                 | 0.22        | 15.04           | 23.57                 | 29.18                |
|         |                    |       | 54           | 14.90                 | 0.22        | 15.12           | 23.57                 | 29.18                |
|         |                    | 242T  | 61           | 14.75                 | 0.22        | 14.97           | 23.57                 | 29.18                |
|         |                    | SU    | -            | 14.66                 | 0.30        | 14.96           | 23.57                 | 29.18                |
| High    | 5 320              | 26T   | 0            | 11.00                 | 0.22        | 11.22           | 23.57                 | 29.18                |
|         |                    |       | 4            | 11.79                 | 0.22        | 12.01           | 23.57                 | 29.18                |
|         |                    |       | 8            | 11.09                 | 0.22        | 11.31           | 23.57                 | 29.18                |
|         |                    | 52T   | 37           | 13.63                 | 0.22        | 13.85           | 23.57                 | 29.18                |
|         |                    |       | 38           | 14.12                 | 0.22        | 14.34           | 23.57                 | 29.18                |
|         |                    |       | 40           | 13.62                 | 0.22        | 13.84           | 23.57                 | 29.18                |
|         |                    | 106T  | 53           | 14.73                 | 0.22        | 14.95           | 23.57                 | 29.18                |
|         |                    |       | 54           | 14.59                 | 0.22        | 14.81           | 23.57                 | 29.18                |
|         |                    | 242T  | 61           | 14.72                 | 0.22        | 14.94           | 23.57                 | 29.18                |
|         |                    | SU    | -            | 14.66                 | 0.30        | 14.96           | 23.57                 | 29.18                |

**Note:**

1. Conducted Output power(dB m) =  $10\log(10^{(\text{ANT } 1/10)} + 10^{(\text{ANT } 2/10)})$  (dB m) + DCF(dB)

**E.I.R.P.**

| Channel | Frequency (MHz) | Tones | RU offset | Conducted Output Power (dBm) | ANT gain (dBi) | MAX e.i.r.p (dBm) | MAX e.i.r.p Limit (dBm) |
|---------|-----------------|-------|-----------|------------------------------|----------------|-------------------|-------------------------|
| Low     | 5 260           | 26T   | 0         | 11.77                        | 0.20           | 12.19             | 29.18                   |
|         |                 |       | 4         | 12.58                        |                | 13.00             | 29.18                   |
|         |                 |       | 8         | 11.77                        |                | 12.19             | 29.18                   |
|         |                 | 52T   | 37        | 14.38                        |                | 14.80             | 29.18                   |
|         |                 |       | 38        | 14.79                        |                | 15.21             | 29.18                   |
|         |                 |       | 40        | 14.33                        |                | 14.75             | 29.18                   |
|         |                 | 106T  | 53        | 14.84                        |                | 15.26             | 29.18                   |
|         |                 |       | 54        | 14.99                        |                | 15.41             | 29.18                   |
|         |                 | 242T  | 61        | 14.84                        |                | 15.26             | 29.18                   |
|         |                 | SU    | -         | 14.79                        |                | 15.29             | 29.18                   |
| Mid     | 5 280           | 26T   | 0         | 11.66                        | 0.20           | 12.08             | 29.18                   |
|         |                 |       | 4         | 12.47                        |                | 12.89             | 29.18                   |
|         |                 |       | 8         | 11.71                        |                | 12.13             | 29.18                   |
|         |                 | 52T   | 37        | 14.32                        |                | 14.74             | 29.18                   |
|         |                 |       | 38        | 14.82                        |                | 15.24             | 29.18                   |
|         |                 |       | 40        | 14.32                        |                | 14.74             | 29.18                   |
|         |                 | 106T  | 53        | 14.82                        |                | 15.24             | 29.18                   |
|         |                 |       | 54        | 14.90                        |                | 15.32             | 29.18                   |
|         |                 | 242T  | 61        | 14.75                        |                | 15.17             | 29.18                   |
|         |                 | SU    | -         | 14.66                        |                | 15.16             | 29.18                   |
| High    | 5 320           | 26T   | 0         | 11.00                        | 0.20           | 11.42             | 29.18                   |
|         |                 |       | 4         | 11.79                        |                | 12.21             | 29.18                   |
|         |                 |       | 8         | 11.09                        |                | 11.51             | 29.18                   |
|         |                 | 52T   | 37        | 13.63                        |                | 14.05             | 29.18                   |
|         |                 |       | 38        | 14.12                        |                | 14.54             | 29.18                   |
|         |                 |       | 40        | 13.62                        |                | 14.04             | 29.18                   |
|         |                 | 106T  | 53        | 14.73                        |                | 15.15             | 29.18                   |
|         |                 |       | 54        | 14.59                        |                | 15.01             | 29.18                   |
|         |                 | 242T  | 61        | 14.72                        |                | 15.14             | 29.18                   |
|         |                 | SU    | -         | 14.66                        |                | 15.16             | 29.18                   |

**Note:**

1. E.I.R.P. Calculation: E.I.R.P. (dBm) = Conducted output power (dBm) + Antenna gain (dBi)

**802.11ax HE20 SISO in the UNII-2C band  
Conducted Output Power**

| Channel  | Frequency<br>(MHz) | Tones | RU<br>offset | Measured output power |             |                 | FCC<br>Limit<br>(dBm) | IC<br>Limit<br>(dBm) |
|----------|--------------------|-------|--------------|-----------------------|-------------|-----------------|-----------------------|----------------------|
|          |                    |       |              | Reading<br>(dBm)      | DCF<br>(dB) | Result<br>(dBm) |                       |                      |
| Low      | 5 500              | 26T   | 0            | 11.82                 | 0.22        | 12.04           | 23.51                 | 29.17                |
|          |                    |       | 4            | 12.65                 | 0.22        | 12.87           | 23.51                 | 29.17                |
|          |                    |       | 8            | 11.83                 | 0.22        | 12.05           | 23.51                 | 29.17                |
|          |                    | 52T   | 37           | 14.80                 | 0.22        | 15.02           | 23.51                 | 29.17                |
|          |                    |       | 38           | 15.23                 | 0.22        | 15.45           | 23.51                 | 29.17                |
|          |                    |       | 40           | 14.60                 | 0.22        | 14.82           | 23.51                 | 29.17                |
|          |                    | 106T  | 53           | 15.27                 | 0.22        | 15.49           | 23.51                 | 29.17                |
|          |                    |       | 54           | 15.14                 | 0.22        | 15.36           | 23.51                 | 29.17                |
|          |                    | 242T  | 61           | 15.12                 | 0.22        | 15.34           | 23.51                 | 29.17                |
|          |                    | SU    | -            | 15.08                 | 0.30        | 15.38           | 23.51                 | 29.17                |
| Mid      | 5 580              | 26T   | 0            | 12.18                 | 0.22        | 12.40           | 23.51                 | 29.17                |
|          |                    |       | 4            | 12.96                 | 0.22        | 13.18           | 23.51                 | 29.17                |
|          |                    |       | 8            | 12.12                 | 0.22        | 12.34           | 23.51                 | 29.17                |
|          |                    | 52T   | 37           | 14.80                 | 0.22        | 15.02           | 23.51                 | 29.17                |
|          |                    |       | 38           | 15.22                 | 0.22        | 15.44           | 23.51                 | 29.17                |
|          |                    |       | 40           | 14.80                 | 0.22        | 15.02           | 23.51                 | 29.17                |
|          |                    | 106T  | 53           | 15.19                 | 0.22        | 15.41           | 23.51                 | 29.17                |
|          |                    |       | 54           | 15.18                 | 0.22        | 15.40           | 23.51                 | 29.17                |
|          |                    | 242T  | 61           | 15.17                 | 0.22        | 15.39           | 23.51                 | 29.17                |
|          |                    | SU    | -            | 14.90                 | 0.30        | 15.20           | 23.51                 | 29.17                |
| High     | 5 700              | 26T   | 0            | 12.23                 | 0.22        | 12.45           | 23.51                 | 29.17                |
|          |                    |       | 4            | 12.84                 | 0.22        | 13.06           | 23.51                 | 29.17                |
|          |                    |       | 8            | 12.01                 | 0.22        | 12.23           | 23.51                 | 29.17                |
|          |                    | 52T   | 37           | 14.56                 | 0.22        | 14.78           | 23.51                 | 29.17                |
|          |                    |       | 38           | 15.03                 | 0.22        | 15.25           | 23.51                 | 29.17                |
|          |                    |       | 40           | 14.34                 | 0.22        | 14.56           | 23.51                 | 29.17                |
|          |                    | 106T  | 53           | 14.81                 | 0.22        | 15.03           | 23.51                 | 29.17                |
|          |                    |       | 54           | 14.58                 | 0.22        | 14.80           | 23.51                 | 29.17                |
|          |                    | 242T  | 61           | 14.67                 | 0.22        | 14.89           | 23.51                 | 29.17                |
|          |                    | SU    | -            | 14.63                 | 0.30        | 14.93           | 23.51                 | 29.17                |
| Straddle | 5 720              | 26T   | 0            | 11.38                 | 0.22        | 11.60           | 23.51                 | 29.17                |
|          |                    |       | 4            | 11.87                 | 0.22        | 12.09           | 23.51                 | 29.17                |
|          |                    | 52T   | 37           | 13.71                 | 0.22        | 13.93           | 23.51                 | 29.17                |
|          |                    |       | 38           | 14.12                 | 0.22        | 14.34           | 23.51                 | 29.17                |
|          |                    | 106T  | 53           | 13.94                 | 0.22        | 14.16           | 23.51                 | 29.17                |

**Note:**

1. Conducted Output power(dB m) =  $10\log(10^{(\text{ANT } 1/10)} + 10^{(\text{ANT } 2/10)})$  (dB m) + DCF(dB)

**E.I.R.P.**

| Channel  | Frequency (MHz) | Tones | RU offset | Conducted Output Power (dBm) | ANT gain (dBi) | MAX e.i.r.p (dBm) | MAX e.i.r.p Limit (dBm) |
|----------|-----------------|-------|-----------|------------------------------|----------------|-------------------|-------------------------|
| Low      | 5 500           | 26T   | 0         | 11.82                        | -0.40          | 11.64             | 29.17                   |
|          |                 |       | 4         | 12.65                        |                | 12.47             | 29.17                   |
|          |                 |       | 8         | 11.83                        |                | 11.65             | 29.17                   |
|          |                 | 52T   | 37        | 14.80                        |                | 14.62             | 29.17                   |
|          |                 |       | 38        | 15.23                        |                | 15.05             | 29.17                   |
|          |                 |       | 40        | 14.60                        |                | 14.42             | 29.17                   |
|          |                 | 106T  | 53        | 15.27                        |                | 15.09             | 29.17                   |
|          |                 |       | 54        | 15.14                        |                | 14.96             | 29.17                   |
|          |                 | 242T  | 61        | 15.12                        |                | 14.94             | 29.17                   |
|          |                 | SU    | -         | 15.08                        |                | 14.98             | 29.17                   |
| Mid      | 5 580           | 26T   | 0         | 12.18                        | -0.40          | 12.00             | 29.17                   |
|          |                 |       | 4         | 12.96                        |                | 12.78             | 29.17                   |
|          |                 |       | 8         | 12.12                        |                | 11.94             | 29.17                   |
|          |                 | 52T   | 37        | 14.80                        |                | 14.62             | 29.17                   |
|          |                 |       | 38        | 15.22                        |                | 15.04             | 29.17                   |
|          |                 |       | 40        | 14.80                        |                | 14.62             | 29.17                   |
|          |                 | 106T  | 53        | 15.19                        |                | 15.01             | 29.17                   |
|          |                 |       | 54        | 15.18                        |                | 15.00             | 29.17                   |
|          |                 | 242T  | 61        | 15.17                        |                | 14.99             | 29.17                   |
|          |                 | SU    | -         | 14.90                        |                | 14.80             | 29.17                   |
| High     | 5 700           | 26T   | 0         | 12.23                        | -0.40          | 12.05             | 29.17                   |
|          |                 |       | 4         | 12.84                        |                | 12.66             | 29.17                   |
|          |                 |       | 8         | 12.01                        |                | 11.83             | 29.17                   |
|          |                 | 52T   | 37        | 14.56                        |                | 14.38             | 29.17                   |
|          |                 |       | 38        | 15.03                        |                | 14.85             | 29.17                   |
|          |                 |       | 40        | 14.34                        |                | 14.16             | 29.17                   |
|          |                 | 106T  | 53        | 14.81                        |                | 14.63             | 29.17                   |
|          |                 |       | 54        | 14.58                        |                | 14.40             | 29.17                   |
|          |                 | 242T  | 61        | 14.67                        |                | 14.49             | 29.17                   |
|          |                 | SU    | -         | 14.63                        |                | 14.53             | 29.17                   |
| Straddle | 5 720           | 26T   | 0         | 11.38                        | -0.40          | 11.20             | 29.17                   |
|          |                 |       | 4         | 11.87                        |                | 11.69             | 29.17                   |
|          |                 | 52T   | 37        | 13.71                        |                | 13.53             | 29.17                   |
|          |                 |       | 38        | 14.12                        |                | 13.94             | 29.17                   |
|          |                 | 106T  | 53        | 13.94                        |                | 13.76             | 29.17                   |
|          |                 |       |           |                              |                |                   |                         |

**Notes:**

1. e.i.r.p. Calculation: e.i.r.p. (dBm) = Conducted output power (dBm) + Antenna gain (dBi)

### 802.11ax HE20 SISO in the UNII-3 band Conducted Output Power

| Channel  | Frequency<br>(MHz) | Tones | RU<br>offset | Measured output power |             |                 | FCC<br>Limit<br>(dBm) | IC<br>Limit<br>(dBm) |
|----------|--------------------|-------|--------------|-----------------------|-------------|-----------------|-----------------------|----------------------|
|          |                    |       |              | Reading<br>(dBm)      | DCF<br>(dB) | Result<br>(dBm) |                       |                      |
| Straddle | 5 720              | 26T   | 8            | 10.67                 | 0.22        | 10.89           | 30.00                 | 30.00                |
|          |                    | 52T   | 40           | 13.03                 | 0.22        | 13.25           | 30.00                 | 30.00                |
| Low      | 5 745              | 26T   | 0            | 10.50                 | 0.22        | 10.72           | 30.00                 | 30.00                |
|          |                    |       | 4            | 6.92                  | 0.22        | 7.14            | 30.00                 | 30.00                |
|          |                    |       | 8            | 6.93                  | 0.30        | 7.23            | 30.00                 | 30.00                |
|          |                    | 52T   | 37           | 10.69                 | 0.22        | 10.91           | 30.00                 | 30.00                |
|          |                    |       | 38           | 11.31                 | 0.22        | 11.53           | 30.00                 | 30.00                |
|          |                    |       | 40           | 10.36                 | 0.22        | 10.58           | 30.00                 | 30.00                |
|          |                    | 106T  | 53           | 10.92                 | 0.22        | 11.14           | 30.00                 | 30.00                |
|          |                    |       | 54           | 11.33                 | 0.22        | 11.55           | 30.00                 | 30.00                |
|          |                    | 242T  | 61           | 10.62                 | 0.22        | 10.84           | 30.00                 | 30.00                |
|          |                    | SU    | -            | 11.08                 | 0.22        | 11.30           | 30.00                 | 30.00                |
| Mid      | 5 785              | 26T   | 0            | 10.91                 | 0.22        | 11.13           | 30.00                 | 30.00                |
|          |                    |       | 4            | 11.04                 | 0.22        | 11.26           | 30.00                 | 30.00                |
|          |                    |       | 8            | 10.93                 | 0.30        | 11.23           | 30.00                 | 30.00                |
|          |                    | 52T   | 37           | 10.33                 | 0.22        | 10.55           | 30.00                 | 30.00                |
|          |                    |       | 38           | 10.91                 | 0.22        | 11.13           | 30.00                 | 30.00                |
|          |                    |       | 40           | 9.98                  | 0.22        | 10.20           | 30.00                 | 30.00                |
|          |                    | 106T  | 53           | 10.56                 | 0.22        | 10.78           | 30.00                 | 30.00                |
|          |                    |       | 54           | 10.97                 | 0.22        | 11.19           | 30.00                 | 30.00                |
|          |                    | 242T  | 61           | 10.28                 | 0.22        | 10.50           | 30.00                 | 30.00                |
|          |                    | SU    | -            | 10.77                 | 0.22        | 10.99           | 30.00                 | 30.00                |
| High     | 5 825              | 26T   | 0            | 10.60                 | 0.22        | 10.82           | 30.00                 | 30.00                |
|          |                    |       | 4            | 10.82                 | 0.22        | 11.04           | 30.00                 | 30.00                |
|          |                    |       | 8            | 10.59                 | 0.30        | 10.89           | 30.00                 | 30.00                |
|          |                    | 52T   | 37           | 9.84                  | 0.22        | 10.06           | 30.00                 | 30.00                |
|          |                    |       | 38           | 10.47                 | 0.22        | 10.69           | 30.00                 | 30.00                |
|          |                    |       | 40           | 9.45                  | 0.22        | 9.67            | 30.00                 | 30.00                |
|          |                    | 106T  | 53           | 10.08                 | 0.22        | 10.30           | 30.00                 | 30.00                |
|          |                    |       | 54           | 10.53                 | 0.22        | 10.75           | 30.00                 | 30.00                |
|          |                    | 242T  | 61           | 9.88                  | 0.22        | 10.10           | 30.00                 | 30.00                |
|          |                    | SU    | -            | 10.34                 | 0.22        | 10.56           | 30.00                 | 30.00                |

**Note:**

1. Conducted Output power(dB m) =  $10\log(10^{(\text{ANT } 1/10)} + 10^{(\text{ANT } 2/10)})$  (dB m) + DCF(dB)

**E.I.R.P.**

| Channel  | Frequency (MHz) | Tones | RU offset | Conducted Output Power (dBm) | ANT gain (dBi) | MAX e.i.r.p (dBm) | MAX e.i.r.p Limit (dBm) |
|----------|-----------------|-------|-----------|------------------------------|----------------|-------------------|-------------------------|
| Straddle | 5 720           | 26T   | 8         | 10.67                        | -0.70          | 10.19             | 30.00                   |
|          |                 | 52T   | 40        | 13.03                        |                | 12.55             | 30.00                   |
| Low      | 5 745           | 26T   | 0         | 10.50                        |                | 10.21             | 30.00                   |
|          |                 |       | 4         | 6.92                         |                | 10.83             | 30.00                   |
|          |                 |       | 8         | 6.93                         |                | 9.88              | 30.00                   |
|          |                 | 52T   | 37        | 10.69                        |                | 10.44             | 30.00                   |
|          |                 |       | 38        | 11.31                        |                | 10.85             | 30.00                   |
|          |                 |       | 40        | 10.36                        |                | 10.14             | 30.00                   |
|          |                 | 106T  | 53        | 10.92                        |                | 10.60             | 30.00                   |
|          |                 |       | 54        | 11.33                        |                | 10.43             | 30.00                   |
|          |                 | 242T  | 61        | 10.62                        |                | 10.56             | 30.00                   |
|          |                 | SU    | -         | 11.08                        |                | 10.53             | 30.00                   |
| Mid      | 5 785           | 26T   | 0         | 10.91                        |                | 9.85              | 30.00                   |
|          |                 |       | 4         | 11.04                        |                | 10.43             | 30.00                   |
|          |                 |       | 8         | 10.93                        |                | 9.50              | 30.00                   |
|          |                 | 52T   | 37        | 10.33                        |                | 10.08             | 30.00                   |
|          |                 |       | 38        | 10.91                        |                | 10.49             | 30.00                   |
|          |                 |       | 40        | 9.98                         |                | 9.80              | 30.00                   |
|          |                 | 106T  | 53        | 10.56                        |                | 10.29             | 30.00                   |
|          |                 |       | 54        | 10.97                        |                | 10.12             | 30.00                   |
|          |                 | 242T  | 61        | 10.28                        |                | 10.34             | 30.00                   |
|          |                 | SU    | -         | 10.77                        |                | 10.19             | 30.00                   |
| High     | 5 825           | 26T   | 0         | 10.60                        |                | 9.36              | 30.00                   |
|          |                 |       | 4         | 10.82                        |                | 9.99              | 30.00                   |
|          |                 |       | 8         | 10.59                        |                | 8.97              | 30.00                   |
|          |                 | 52T   | 37        | 9.84                         |                | 9.60              | 30.00                   |
|          |                 |       | 38        | 10.47                        |                | 10.05             | 30.00                   |
|          |                 |       | 40        | 9.45                         |                | 9.40              | 30.00                   |
|          |                 | 106T  | 53        | 10.08                        |                | 9.86              | 30.00                   |
|          |                 |       | 54        | 10.53                        |                | 9.64              | 30.00                   |
|          |                 | 242T  | 61        | 9.88                         |                | 9.73              | 30.00                   |
|          |                 | SU    | -         | 10.34                        |                | 9.71              | 30.00                   |

**Note:**

1. e.i.r.p. Calculation: e.i.r.p. (dBm) = Conducted output power (dBm) + Antenna gain (dBi)

## 802.11ax HE20 SISO in the Straddle Conducted Output Power

| Channel | Frequency<br>(MHz) | Tones | RU<br>offset | Measured output power |             |                 | FCC<br>Limit<br>(dBm) | IC<br>Limit<br>(dBm) |
|---------|--------------------|-------|--------------|-----------------------|-------------|-----------------|-----------------------|----------------------|
|         |                    |       |              | Reading<br>(dBm)      | DCF<br>(dB) | Result<br>(dBm) |                       |                      |
| UNII-2C | 5 720              | 106T  | 54           | 10.47                 | 0.22        | 10.69           | 23.51                 | 29.17                |
|         |                    | 242T  | 61           | 12.74                 | 0.22        | 12.96           | 23.51                 | 29.17                |
|         |                    | SU    | -            | 12.62                 | 0.30        | 12.92           | 23.51                 | 29.17                |
| UNII-3  |                    | 106T  | 54           | 10.12                 | 0.22        | 10.34           | 30.00                 | 30.00                |
|         |                    | 242T  | 61           | 10.21                 | 0.22        | 10.43           | 30.00                 | 30.00                |
|         |                    | SU    | -            | 10.11                 | 0.30        | 10.41           | 30.00                 | 30.00                |

## 802.11ax HE20 SISO in the Straddle E.I.R.P.

| Band    | Frequency<br>(MHz) | Tones | RU<br>offset | Conducted Output<br>Power<br>(dBm) | ANT gain<br>(dBi) | MAX e.i.r.p<br>(dBm) | MAX e.i.r.p<br>Limit<br>(dBm) |
|---------|--------------------|-------|--------------|------------------------------------|-------------------|----------------------|-------------------------------|
| UNII-2C | 5 720              | 106T  | 54           | 10.47                              | -0.40             | 10.29                | 29.17                         |
|         |                    | 242T  | 61           | 12.74                              |                   | 12.56                | 29.17                         |
|         |                    | SU    | -            | 12.62                              |                   | 12.52                | 29.17                         |
| UNII-3  |                    | 106T  | 54           | 10.12                              | -0.70             | 9.64                 | 30.00                         |
|         |                    | 242T  | 61           | 10.21                              |                   | 9.73                 | 30.00                         |
|         |                    | SU    | -            | 10.11                              |                   | 9.71                 | 30.00                         |

**[DC 12 V]****802.11ax HE20 SISO in the UNII-1 band  
Conducted Output Power**

| Channel | Frequency<br>(MHz) | Tones | RU<br>offset | Measured output power |             |                 | FCC<br>Limit<br>(dBm) | IC<br>Limit<br>(dBm) |
|---------|--------------------|-------|--------------|-----------------------|-------------|-----------------|-----------------------|----------------------|
|         |                    |       |              | Reading<br>(dBm)      | DCF<br>(dB) | Result<br>(dBm) |                       |                      |
| Low     | 5 180              | 26T   | 0            | 11.98                 | 0.22        | 12.20           | 23.98                 | 22.20                |
|         |                    |       | 4            | 12.75                 | 0.22        | 12.97           | 23.98                 | 22.20                |
|         |                    |       | 8            | 12.00                 | 0.22        | 12.22           | 23.98                 | 22.20                |
|         |                    | 52T   | 37           | 14.42                 | 0.22        | 14.64           | 23.98                 | 22.20                |
|         |                    |       | 38           | 14.94                 | 0.22        | 15.16           | 23.98                 | 22.20                |
|         |                    |       | 40           | 14.47                 | 0.22        | 14.69           | 23.98                 | 22.20                |
|         |                    | 106T  | 53           | 14.69                 | 0.22        | 14.91           | 23.98                 | 22.20                |
|         |                    |       | 54           | 14.72                 | 0.22        | 14.94           | 23.98                 | 22.20                |
|         |                    | 242T  | 61           | 14.68                 | 0.22        | 14.90           | 23.98                 | 22.20                |
|         |                    | SU    | -            | 14.61                 | 0.30        | 14.91           | 23.98                 | 22.20                |
| Mid     | 5 200              | 26T   | 0            | 11.82                 | 0.22        | 12.04           | 23.98                 | 22.20                |
|         |                    |       | 4            | 12.44                 | 0.22        | 12.66           | 23.98                 | 22.20                |
|         |                    |       | 8            | 11.79                 | 0.22        | 12.01           | 23.98                 | 22.20                |
|         |                    | 52T   | 37           | 14.36                 | 0.22        | 14.58           | 23.98                 | 22.20                |
|         |                    |       | 38           | 14.86                 | 0.22        | 15.08           | 23.98                 | 22.20                |
|         |                    |       | 40           | 14.40                 | 0.22        | 14.62           | 23.98                 | 22.20                |
|         |                    | 106T  | 53           | 14.64                 | 0.22        | 14.86           | 23.98                 | 22.20                |
|         |                    |       | 54           | 14.62                 | 0.22        | 14.84           | 23.98                 | 22.20                |
|         |                    | 242T  | 61           | 14.77                 | 0.22        | 14.99           | 23.98                 | 22.20                |
|         |                    | SU    | -            | 14.56                 | 0.30        | 14.86           | 23.98                 | 22.20                |
| High    | 5 240              | 26T   | 0            | 5.00                  | 0.22        | 5.22            | 23.98                 | 22.20                |
|         |                    |       | 4            | 5.80                  | 0.22        | 6.02            | 23.98                 | 22.20                |
|         |                    |       | 8            | 5.01                  | 0.22        | 5.23            | 23.98                 | 22.20                |
|         |                    | 52T   | 37           | 7.22                  | 0.22        | 7.44            | 23.98                 | 22.20                |
|         |                    |       | 38           | 7.74                  | 0.22        | 7.96            | 23.98                 | 22.20                |
|         |                    |       | 40           | 7.23                  | 0.22        | 7.45            | 23.98                 | 22.20                |
|         |                    | 106T  | 53           | 10.92                 | 0.22        | 11.14           | 23.98                 | 22.20                |
|         |                    |       | 54           | 10.90                 | 0.22        | 11.12           | 23.98                 | 22.20                |
|         |                    | 242T  | 61           | 14.47                 | 0.22        | 14.69           | 23.98                 | 22.20                |
|         |                    | SU    | -            | 14.37                 | 0.30        | 14.67           | 23.98                 | 22.20                |

**Note:**

1. Conducted Output power(dB m) =  $10\log(10^{(ANT\ 1/10)} + 10^{(ANT\ 2/10)})$  (dB m) + DCF(dB)

**E.I.R.P.**

| Channel | Frequency (MHz) | Tones | RU offset | Conducted Output Power (dBm) | ANT gain (dBi) | MAX e.i.r.p (dBm) | MAX e.i.r.p Limit (dBm) |
|---------|-----------------|-------|-----------|------------------------------|----------------|-------------------|-------------------------|
| Low     | 5 180           | 26T   | 0         | 11.98                        | 0.90           | 13.10             | 22.20                   |
|         |                 |       | 4         | 12.75                        |                | 13.87             | 22.20                   |
|         |                 |       | 8         | 12.00                        |                | 13.12             | 22.20                   |
|         |                 | 52T   | 37        | 14.42                        |                | 15.54             | 22.20                   |
|         |                 |       | 38        | 14.94                        |                | 16.06             | 22.20                   |
|         |                 |       | 40        | 14.47                        |                | 15.59             | 22.20                   |
|         |                 | 106T  | 53        | 14.69                        |                | 15.81             | 22.20                   |
|         |                 |       | 54        | 14.72                        |                | 15.84             | 22.20                   |
|         |                 | 242T  | 61        | 14.68                        |                | 15.80             | 22.20                   |
|         |                 | SU    | -         | 14.61                        |                | 15.81             | 22.20                   |
| Mid     | 5 200           | 26T   | 0         | 11.82                        | 0.90           | 12.94             | 22.20                   |
|         |                 |       | 4         | 12.44                        |                | 13.56             | 22.20                   |
|         |                 |       | 8         | 11.79                        |                | 12.91             | 22.20                   |
|         |                 | 52T   | 37        | 14.36                        |                | 15.48             | 22.20                   |
|         |                 |       | 38        | 14.86                        |                | 15.98             | 22.20                   |
|         |                 |       | 40        | 14.40                        |                | 15.52             | 22.20                   |
|         |                 | 106T  | 53        | 14.64                        |                | 15.76             | 22.20                   |
|         |                 |       | 54        | 14.62                        |                | 15.74             | 22.20                   |
|         |                 | 242T  | 61        | 14.77                        |                | 15.89             | 22.20                   |
|         |                 | SU    | -         | 14.56                        |                | 15.76             | 22.20                   |
| High    | 5 240           | 26T   | 0         | 5.00                         | 0.90           | 6.12              | 22.20                   |
|         |                 |       | 4         | 5.80                         |                | 6.92              | 22.20                   |
|         |                 |       | 8         | 5.01                         |                | 6.13              | 22.20                   |
|         |                 | 52T   | 37        | 7.22                         |                | 8.34              | 22.20                   |
|         |                 |       | 38        | 7.74                         |                | 8.86              | 22.20                   |
|         |                 |       | 40        | 7.23                         |                | 8.35              | 22.20                   |
|         |                 | 106T  | 53        | 10.92                        |                | 12.04             | 22.20                   |
|         |                 |       | 54        | 10.90                        |                | 12.02             | 22.20                   |
|         |                 | 242T  | 61        | 14.47                        |                | 15.59             | 22.20                   |
|         |                 | SU    | -         | 14.37                        |                | 15.57             | 22.20                   |

**Note:**

1. E.I.R.P. Calculation: E.I.R.P. (dBm) = Conducted output power (dBm) + Antenna gain (dBi)

**802.11ax HE20 SISO in the UNII-2A band  
Conducted Output Power**

| Channel | Frequency<br>(MHz) | Tones | RU<br>offset | Measured output power |             |                 | FCC<br>Limit<br>(dBm) | IC<br>Limit<br>(dBm) |
|---------|--------------------|-------|--------------|-----------------------|-------------|-----------------|-----------------------|----------------------|
|         |                    |       |              | Reading<br>(dBm)      | DCF<br>(dB) | Result<br>(dBm) |                       |                      |
| Low     | 5 260              | 26T   | 0            | 11.77                 | 0.22        | 11.99           | 23.57                 | 29.17                |
|         |                    |       | 4            | 12.58                 | 0.22        | 12.80           | 23.57                 | 29.17                |
|         |                    |       | 8            | 11.77                 | 0.22        | 11.99           | 23.57                 | 29.17                |
|         |                    | 52T   | 37           | 14.32                 | 0.22        | 14.54           | 23.57                 | 29.17                |
|         |                    |       | 38           | 14.56                 | 0.22        | 14.78           | 23.57                 | 29.17                |
|         |                    |       | 40           | 14.34                 | 0.22        | 14.56           | 23.57                 | 29.17                |
|         |                    | 106T  | 53           | 14.86                 | 0.22        | 15.08           | 23.57                 | 29.17                |
|         |                    |       | 54           | 14.94                 | 0.22        | 15.16           | 23.57                 | 29.17                |
|         |                    | 242T  | 61           | 14.86                 | 0.22        | 15.08           | 23.57                 | 29.17                |
|         |                    | SU    | -            | 14.77                 | 0.30        | 15.07           | 23.57                 | 29.17                |
| Mid     | 5 280              | 26T   | 0            | 11.64                 | 0.22        | 11.86           | 23.57                 | 29.17                |
|         |                    |       | 4            | 12.51                 | 0.22        | 12.73           | 23.57                 | 29.17                |
|         |                    |       | 8            | 11.70                 | 0.22        | 11.92           | 23.57                 | 29.17                |
|         |                    | 52T   | 37           | 14.33                 | 0.22        | 14.55           | 23.57                 | 29.17                |
|         |                    |       | 38           | 14.83                 | 0.22        | 15.05           | 23.57                 | 29.17                |
|         |                    |       | 40           | 14.31                 | 0.22        | 14.53           | 23.57                 | 29.17                |
|         |                    | 106T  | 53           | 14.80                 | 0.22        | 15.02           | 23.57                 | 29.17                |
|         |                    |       | 54           | 14.91                 | 0.22        | 15.13           | 23.57                 | 29.17                |
|         |                    | 242T  | 61           | 14.88                 | 0.22        | 15.10           | 23.57                 | 29.17                |
|         |                    | SU    | -            | 14.67                 | 0.30        | 14.97           | 23.57                 | 29.17                |
| High    | 5 320              | 26T   | 0            | 10.98                 | 0.22        | 11.20           | 23.57                 | 29.17                |
|         |                    |       | 4            | 11.81                 | 0.22        | 12.03           | 23.57                 | 29.17                |
|         |                    |       | 8            | 11.00                 | 0.22        | 11.22           | 23.57                 | 29.17                |
|         |                    | 52T   | 37           | 13.62                 | 0.22        | 13.84           | 23.57                 | 29.17                |
|         |                    |       | 38           | 14.13                 | 0.22        | 14.35           | 23.57                 | 29.17                |
|         |                    |       | 40           | 13.60                 | 0.22        | 13.82           | 23.57                 | 29.17                |
|         |                    | 106T  | 53           | 14.60                 | 0.22        | 14.82           | 23.57                 | 29.17                |
|         |                    |       | 54           | 14.60                 | 0.22        | 14.82           | 23.57                 | 29.17                |
|         |                    | 242T  | 61           | 14.59                 | 0.22        | 14.81           | 23.57                 | 29.17                |
|         |                    | SU    | -            | 14.67                 | 0.30        | 14.97           | 23.57                 | 29.17                |

**Note:**

1. Conducted Output power(dB m) =  $10\log(10^{(\text{ANT } 1/10)} + 10^{(\text{ANT } 2/10)})$  (dB m) + DCF(dB)

**E.I.R.P.**

| Channel | Frequency (MHz) | Tones | RU offset | Conducted Output Power (dBm) | ANT gain (dBi) | MAX e.i.r.p (dBm) | MAX e.i.r.p Limit (dBm) |
|---------|-----------------|-------|-----------|------------------------------|----------------|-------------------|-------------------------|
| Low     | 5 260           | 26T   | 0         | 11.77                        | 0.20           | 12.19             | 29.17                   |
|         |                 |       | 4         | 12.58                        |                | 13.00             | 29.17                   |
|         |                 |       | 8         | 11.77                        |                | 12.19             | 29.17                   |
|         |                 | 52T   | 37        | 14.32                        |                | 14.74             | 29.17                   |
|         |                 |       | 38        | 14.56                        |                | 14.98             | 29.17                   |
|         |                 |       | 40        | 14.34                        |                | 14.76             | 29.17                   |
|         |                 | 106T  | 53        | 14.86                        |                | 15.28             | 29.17                   |
|         |                 |       | 54        | 14.94                        |                | 15.36             | 29.17                   |
|         |                 | 242T  | 61        | 14.86                        |                | 15.28             | 29.17                   |
|         |                 | SU    | -         | 14.77                        |                | 15.27             | 29.17                   |
| Mid     | 5 280           | 26T   | 0         | 11.64                        | 0.20           | 12.06             | 29.17                   |
|         |                 |       | 4         | 12.51                        |                | 12.93             | 29.17                   |
|         |                 |       | 8         | 11.70                        |                | 12.12             | 29.17                   |
|         |                 | 52T   | 37        | 14.33                        |                | 14.75             | 29.17                   |
|         |                 |       | 38        | 14.83                        |                | 15.25             | 29.17                   |
|         |                 |       | 40        | 14.31                        |                | 14.73             | 29.17                   |
|         |                 | 106T  | 53        | 14.80                        |                | 15.22             | 29.17                   |
|         |                 |       | 54        | 14.91                        |                | 15.33             | 29.17                   |
|         |                 | 242T  | 61        | 14.88                        |                | 15.30             | 29.17                   |
|         |                 | SU    | -         | 14.67                        |                | 15.17             | 29.17                   |
| High    | 5 320           | 26T   | 0         | 10.98                        | 0.20           | 11.40             | 29.17                   |
|         |                 |       | 4         | 11.81                        |                | 12.23             | 29.17                   |
|         |                 |       | 8         | 11.00                        |                | 11.42             | 29.17                   |
|         |                 | 52T   | 37        | 13.62                        |                | 14.04             | 29.17                   |
|         |                 |       | 38        | 14.13                        |                | 14.55             | 29.17                   |
|         |                 |       | 40        | 13.60                        |                | 14.02             | 29.17                   |
|         |                 | 106T  | 53        | 14.60                        |                | 15.02             | 29.17                   |
|         |                 |       | 54        | 14.60                        |                | 15.02             | 29.17                   |
|         |                 | 242T  | 61        | 14.59                        |                | 15.01             | 29.17                   |
|         |                 | SU    | -         | 14.67                        |                | 15.17             | 29.17                   |

**Note:**

1. E.I.R.P. Calculation: E.I.R.P. (dBm) = Conducted output power (dBm) + Antenna gain (dBi)

**802.11ax HE20 SISO in the UNII-2C band  
Conducted Output Power**

| Channel  | Frequency<br>(MHz) | Tones | RU<br>offset | Measured output power |             |                 | FCC<br>Limit<br>(dBm) | IC<br>Limit<br>(dBm) |
|----------|--------------------|-------|--------------|-----------------------|-------------|-----------------|-----------------------|----------------------|
|          |                    |       |              | Reading<br>(dBm)      | DCF<br>(dB) | Result<br>(dBm) |                       |                      |
| Low      | 5 500              | 26T   | 0            | 11.80                 | 0.22        | 12.02           | 23.60                 | 29.21                |
|          |                    |       | 4            | 12.63                 | 0.22        | 12.85           | 23.60                 | 29.21                |
|          |                    |       | 8            | 11.83                 | 0.22        | 12.05           | 23.60                 | 29.21                |
|          |                    | 52T   | 37           | 14.77                 | 0.22        | 14.99           | 23.60                 | 29.21                |
|          |                    |       | 38           | 15.09                 | 0.22        | 15.31           | 23.60                 | 29.21                |
|          |                    |       | 40           | 14.61                 | 0.22        | 14.83           | 23.60                 | 29.21                |
|          |                    | 106T  | 53           | 15.11                 | 0.22        | 15.33           | 23.60                 | 29.21                |
|          |                    |       | 54           | 15.15                 | 0.22        | 15.37           | 23.60                 | 29.21                |
|          |                    | 242T  | 61           | 15.15                 | 0.22        | 15.37           | 23.60                 | 29.21                |
|          |                    | SU    | -            | 15.09                 | 0.30        | 15.39           | 23.60                 | 29.21                |
| Mid      | 5 600              | 26T   | 0            | 12.16                 | 0.22        | 12.38           | 23.60                 | 29.21                |
|          |                    |       | 4            | 12.95                 | 0.22        | 13.17           | 23.60                 | 29.21                |
|          |                    |       | 8            | 12.10                 | 0.22        | 12.32           | 23.60                 | 29.21                |
|          |                    | 52T   | 37           | 14.81                 | 0.22        | 15.03           | 23.60                 | 29.21                |
|          |                    |       | 38           | 15.36                 | 0.22        | 15.58           | 23.60                 | 29.21                |
|          |                    |       | 40           | 14.78                 | 0.22        | 15.00           | 23.60                 | 29.21                |
|          |                    | 106T  | 53           | 15.03                 | 0.22        | 15.25           | 23.60                 | 29.21                |
|          |                    |       | 54           | 15.06                 | 0.22        | 15.28           | 23.60                 | 29.21                |
|          |                    | 242T  | 61           | 15.07                 | 0.22        | 15.29           | 23.60                 | 29.21                |
|          |                    | SU    | -            | 14.90                 | 0.30        | 15.20           | 23.60                 | 29.21                |
| High     | 5 700              | 26T   | 0            | 12.21                 | 0.22        | 12.43           | 23.60                 | 29.21                |
|          |                    |       | 4            | 12.84                 | 0.22        | 13.06           | 23.60                 | 29.21                |
|          |                    |       | 8            | 11.90                 | 0.22        | 12.12           | 23.60                 | 29.21                |
|          |                    | 52T   | 37           | 14.58                 | 0.22        | 14.80           | 23.60                 | 29.21                |
|          |                    |       | 38           | 15.03                 | 0.22        | 15.25           | 23.60                 | 29.21                |
|          |                    |       | 40           | 14.42                 | 0.22        | 14.64           | 23.60                 | 29.21                |
|          |                    | 106T  | 53           | 14.78                 | 0.22        | 15.00           | 23.60                 | 29.21                |
|          |                    |       | 54           | 14.60                 | 0.22        | 14.82           | 23.60                 | 29.21                |
|          |                    | 242T  | 61           | 14.69                 | 0.22        | 14.91           | 23.60                 | 29.21                |
|          |                    | SU    | -            | 14.62                 | 0.30        | 14.92           | 23.60                 | 29.21                |
| Straddle | 5 720              | 26T   | 0            | 11.38                 | 0.22        | 11.60           | 23.60                 | 29.21                |
|          |                    |       | 4            | 11.87                 | 0.22        | 12.09           | 23.60                 | 29.21                |
|          |                    | 52T   | 37           | 13.71                 | 0.22        | 13.93           | 23.60                 | 29.21                |
|          |                    |       | 38           | 14.12                 | 0.22        | 14.34           | 23.60                 | 29.21                |
|          |                    | 106T  | 53           | 13.94                 | 0.22        | 14.16           | 23.60                 | 29.21                |

**Note:**

1. Conducted Output power(dB m) =  $10\log(10^{(\text{ANT } 1/10)} + 10^{(\text{ANT } 2/10)})$  (dB m) + DCF(dB)

**E.I.R.P.**

| Channel  | Frequency (MHz) | Tones | RU offset | Conducted Output Power (dBm) | ANT gain (dBi) | MAX e.i.r.p (dBm) | MAX e.i.r.p Limit (dBm) |
|----------|-----------------|-------|-----------|------------------------------|----------------|-------------------|-------------------------|
| Low      | 5 500           | 26T   | 0         | 11.80                        | -0.40          | 11.618            | 29.21                   |
|          |                 |       | 4         | 12.63                        |                | 12.445            | 29.21                   |
|          |                 |       | 8         | 11.83                        |                | 11.653            | 29.21                   |
|          |                 | 52T   | 37        | 14.77                        |                | 14.592            | 29.21                   |
|          |                 |       | 38        | 15.09                        |                | 14.907            | 29.21                   |
|          |                 |       | 40        | 14.61                        |                | 14.433            | 29.21                   |
|          |                 | 106T  | 53        | 15.11                        |                | 14.934            | 29.21                   |
|          |                 |       | 54        | 15.15                        |                | 14.965            | 29.21                   |
|          |                 | 242T  | 61        | 15.15                        |                | 14.971            | 29.21                   |
|          |                 | SU    | -         | 15.09                        |                | 14.992            | 29.21                   |
| Mid      | 5 580           | 26T   | 0         | 12.16                        | -0.40          | 11.975            | 29.21                   |
|          |                 |       | 4         | 12.95                        |                | 12.774            | 29.21                   |
|          |                 |       | 8         | 12.10                        |                | 11.919            | 29.21                   |
|          |                 | 52T   | 37        | 14.81                        |                | 14.629            | 29.21                   |
|          |                 |       | 38        | 15.36                        |                | 15.176            | 29.21                   |
|          |                 |       | 40        | 14.78                        |                | 14.598            | 29.21                   |
|          |                 | 106T  | 53        | 15.03                        |                | 14.851            | 29.21                   |
|          |                 |       | 54        | 15.06                        |                | 14.876            | 29.21                   |
|          |                 | 242T  | 61        | 15.07                        |                | 14.89             | 29.21                   |
|          |                 | SU    | -         | 14.90                        |                | 14.798            | 29.21                   |
| High     | 5 700           | 26T   | 0         | 12.21                        | -0.40          | 12.026            | 29.21                   |
|          |                 |       | 4         | 12.84                        |                | 12.661            | 29.21                   |
|          |                 |       | 8         | 11.90                        |                | 11.721            | 29.21                   |
|          |                 | 52T   | 37        | 14.58                        |                | 14.401            | 29.21                   |
|          |                 |       | 38        | 15.03                        |                | 14.848            | 29.21                   |
|          |                 |       | 40        | 14.42                        |                | 14.239            | 29.21                   |
|          |                 | 106T  | 53        | 14.78                        |                | 14.601            | 29.21                   |
|          |                 |       | 54        | 14.60                        |                | 14.417            | 29.21                   |
|          |                 | 242T  | 61        | 14.69                        |                | 14.505            | 29.21                   |
|          |                 | SU    | -         | 14.62                        |                | 14.519            | 29.21                   |
| Straddle | 5 720           | 26T   | 0         | 11.38                        | -0.40          | 11.2              | 29.21                   |
|          |                 |       | 4         | 11.87                        |                | 11.69             | 29.21                   |
|          |                 | 52T   | 37        | 13.71                        |                | 13.53             | 29.21                   |
|          |                 |       | 38        | 14.12                        |                | 13.94             | 29.21                   |
|          |                 | 106T  | 53        | 13.94                        |                | 13.76             | 29.21                   |
|          |                 |       |           |                              |                |                   |                         |

**Note:**

1. e.i.r.p. Calculation: e.i.r.p. (dBm) = Conducted output power (dBm) + Antenna gain (dBi)

**802.11ax HE20 SISO in the UNII-3 band  
Conducted Output Power**

| Channel  | Frequency<br>(MHz) | Tones | RU<br>offset | Measured output power |             |                 | FCC<br>Limit<br>(dBm) | IC<br>Limit<br>(dBm) |
|----------|--------------------|-------|--------------|-----------------------|-------------|-----------------|-----------------------|----------------------|
|          |                    |       |              | Reading<br>(dBm)      | DCF<br>(dB) | Result<br>(dBm) |                       |                      |
| Straddle | 5 720              | 26T   | 8            | 10.67                 | 0.22        | 10.89           | 30.00                 | 30.00                |
|          |                    | 52T   | 40           | 13.03                 | 0.22        | 13.25           | 30.00                 | 30.00                |
| Low      | 5 745              | 26T   | 0            | 10.65                 | 0.22        | 10.87           | 30.00                 | 30.00                |
|          |                    |       | 4            | 11.32                 | 0.22        | 11.54           | 30.00                 | 30.00                |
|          |                    |       | 8            | 10.32                 | 0.22        | 10.54           | 30.00                 | 30.00                |
|          |                    | 52T   | 37           | 10.98                 | 0.22        | 11.20           | 30.00                 | 30.00                |
|          |                    |       | 38           | 11.37                 | 0.22        | 11.59           | 30.00                 | 30.00                |
|          |                    |       | 40           | 10.69                 | 0.22        | 10.91           | 30.00                 | 30.00                |
|          |                    | 106T  | 53           | 11.10                 | 0.22        | 11.32           | 30.00                 | 30.00                |
|          |                    |       | 54           | 10.98                 | 0.22        | 11.20           | 30.00                 | 30.00                |
|          |                    | 242T  | 61           | 11.03                 | 0.22        | 11.25           | 30.00                 | 30.00                |
|          |                    | SU    | -            | 10.92                 | 0.30        | 11.22           | 30.00                 | 30.00                |
| Mid      | 5 785              | 26T   | 0            | 10.35                 | 0.22        | 10.57           | 30.00                 | 30.00                |
|          |                    |       | 4            | 10.93                 | 0.22        | 11.15           | 30.00                 | 30.00                |
|          |                    |       | 8            | 9.97                  | 0.22        | 10.19           | 30.00                 | 30.00                |
|          |                    | 52T   | 37           | 10.62                 | 0.22        | 10.84           | 30.00                 | 30.00                |
|          |                    |       | 38           | 11.01                 | 0.22        | 11.23           | 30.00                 | 30.00                |
|          |                    |       | 40           | 10.21                 | 0.22        | 10.43           | 30.00                 | 30.00                |
|          |                    | 106T  | 53           | 10.82                 | 0.22        | 11.04           | 30.00                 | 30.00                |
|          |                    |       | 54           | 10.55                 | 0.22        | 10.77           | 30.00                 | 30.00                |
|          |                    | 242T  | 61           | 10.71                 | 0.22        | 10.93           | 30.00                 | 30.00                |
|          |                    | SU    | -            | 10.64                 | 0.30        | 10.94           | 30.00                 | 30.00                |
| High     | 5 825              | 26T   | 0            | 9.82                  | 0.22        | 10.04           | 30.00                 | 30.00                |
|          |                    |       | 4            | 10.66                 | 0.22        | 10.88           | 30.00                 | 30.00                |
|          |                    |       | 8            | 9.45                  | 0.22        | 9.67            | 30.00                 | 30.00                |
|          |                    | 52T   | 37           | 10.08                 | 0.22        | 10.30           | 30.00                 | 30.00                |
|          |                    |       | 38           | 10.55                 | 0.22        | 10.77           | 30.00                 | 30.00                |
|          |                    |       | 40           | 9.90                  | 0.22        | 10.12           | 30.00                 | 30.00                |
|          |                    | 106T  | 53           | 10.31                 | 0.22        | 10.53           | 30.00                 | 30.00                |
|          |                    |       | 54           | 10.13                 | 0.22        | 10.35           | 30.00                 | 30.00                |
|          |                    | 242T  | 61           | 10.22                 | 0.22        | 10.44           | 30.00                 | 30.00                |
|          |                    | SU    | -            | 10.21                 | 0.30        | 10.51           | 30.00                 | 30.00                |

**Note:**1. Conducted Output power(dB m) =  $10\log(10^{(\text{ANT } 1/10)} + 10^{(\text{ANT } 2/10)})$  (dB m) + DCF(dB)

**E.I.R.P.**

| Channel  | Frequency (MHz) | Tones | RU offset | Conducted Output Power (dBm) | ANT gain (dBi) | MAX e.i.r.p (dBm) | MAX e.i.r.p Limit (dBm) |
|----------|-----------------|-------|-----------|------------------------------|----------------|-------------------|-------------------------|
| Straddle | 5 720           | 26T   | 8         | 10.67                        | -0.70          | 10.19             | 30.00                   |
|          |                 | 52T   | 40        | 13.03                        |                | 12.55             | 30.00                   |
| Low      | 5 745           | 26T   | 0         | 10.65                        |                | 10.17             | 30.00                   |
|          |                 |       | 4         | 11.32                        |                | 10.84             | 30.00                   |
|          |                 |       | 8         | 10.32                        |                | 9.84              | 30.00                   |
|          |                 | 52T   | 37        | 10.98                        |                | 10.50             | 30.00                   |
|          |                 |       | 38        | 11.37                        |                | 10.89             | 30.00                   |
|          |                 |       | 40        | 10.69                        |                | 10.21             | 30.00                   |
|          |                 | 106T  | 53        | 11.10                        |                | 10.62             | 30.00                   |
|          |                 |       | 54        | 10.98                        |                | 10.50             | 30.00                   |
|          |                 | 242T  | 61        | 11.03                        |                | 10.55             | 30.00                   |
|          |                 | SU    | -         | 10.92                        |                | 10.52             | 30.00                   |
| Mid      | 5 785           | 26T   | 0         | 10.35                        |                | 9.87              | 30.00                   |
|          |                 |       | 4         | 10.93                        |                | 10.45             | 30.00                   |
|          |                 |       | 8         | 9.97                         |                | 9.49              | 30.00                   |
|          |                 | 52T   | 37        | 10.62                        |                | 10.14             | 30.00                   |
|          |                 |       | 38        | 11.01                        |                | 10.53             | 30.00                   |
|          |                 |       | 40        | 10.21                        |                | 9.73              | 30.00                   |
|          |                 | 106T  | 53        | 10.82                        |                | 10.34             | 30.00                   |
|          |                 |       | 54        | 10.55                        |                | 10.07             | 30.00                   |
|          |                 | 242T  | 61        | 10.71                        |                | 10.23             | 30.00                   |
|          |                 | SU    | -         | 10.64                        |                | 10.24             | 30.00                   |
| High     | 5 825           | 26T   | 0         | 9.82                         |                | 9.34              | 30.00                   |
|          |                 |       | 4         | 10.66                        |                | 10.18             | 30.00                   |
|          |                 |       | 8         | 9.45                         |                | 8.97              | 30.00                   |
|          |                 | 52T   | 37        | 10.08                        |                | 9.60              | 30.00                   |
|          |                 |       | 38        | 10.55                        |                | 10.07             | 30.00                   |
|          |                 |       | 40        | 9.90                         |                | 9.42              | 30.00                   |
|          |                 | 106T  | 53        | 10.31                        |                | 9.83              | 30.00                   |
|          |                 |       | 54        | 10.13                        |                | 9.65              | 30.00                   |
|          |                 | 242T  | 61        | 10.22                        |                | 9.74              | 30.00                   |
|          |                 | SU    | -         | 10.21                        |                | 9.81              | 30.00                   |

**Note:**

1. e.i.r.p. Calculation: e.i.r.p. (dBm) = Conducted output power (dBm) + Antenna gain (dBi)

**802.11ax HE20 SISO in the Straddle  
Conducted Output Power**

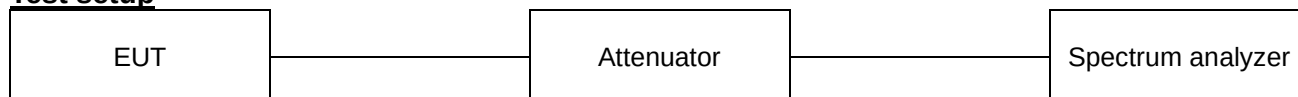
| Channel | Frequency<br>(MHz) | Tones | RU<br>offset | Measured output power |             |                 | FCC<br>Limit<br>(dBm) | IC<br>Limit<br>(dBm) |
|---------|--------------------|-------|--------------|-----------------------|-------------|-----------------|-----------------------|----------------------|
|         |                    |       |              | Reading<br>(dBm)      | DCF<br>(dB) | Result<br>(dBm) |                       |                      |
| UNII-2C | 5 720              | 106T  | 54           | 10.47                 | 0.22        | 10.69           | 23.51                 | 29.17                |
|         |                    | 242T  | 61           | 12.74                 | 0.22        | 12.96           | 23.51                 | 29.17                |
|         |                    | SU    | -            | 12.62                 | 0.30        | 12.92           | 23.51                 | 29.17                |
| UNII-3  |                    | 106T  | 54           | 10.13                 | 0.22        | 10.35           | 30.00                 | 30.00                |
|         |                    | 242T  | 61           | 10.22                 | 0.22        | 10.44           | 30.00                 | 30.00                |
|         |                    | SU    | -            | 10.21                 | 0.30        | 10.51           | 30.00                 | 30.00                |

**802.11ax HE20 SISO in the Straddle  
E.I.R.P.**

| Band    | Frequency<br>(MHz) | Tones | RU<br>offset | Conducted Output<br>Power<br>(dBm) | ANT gain<br>(dBi) | MAX e.i.r.p<br>(dBm) | MAX e.i.r.p<br>Limit<br>(dBm) |
|---------|--------------------|-------|--------------|------------------------------------|-------------------|----------------------|-------------------------------|
| UNII-2C | 5 720              | 106T  | 54           | 10.47                              | -0.40             | 10.29                | 29.17                         |
|         |                    | 242T  | 61           | 12.74                              |                   | 12.56                | 29.17                         |
|         |                    | SU    | -            | 12.62                              |                   | 12.52                | 29.17                         |
| UNII-3  |                    | 106T  | 54           | 10.13                              | -0.70             | 9.65                 | 30.00                         |
|         |                    | 242T  | 61           | 10.22                              |                   | 9.74                 | 30.00                         |
|         |                    | SU    | -            | 10.21                              |                   | 9.81                 | 30.00                         |

## 7.2. Maximum Power Spectral Density

### Test setup



### Limit

According to §15.407(a), RSS-247(6.2)

| Band    | EUT category |                                   | Limit           |
|---------|--------------|-----------------------------------|-----------------|
| UNII-1  |              | Outdoor access point              | 17dBm/MHz       |
|         |              | Indoor access point               |                 |
|         |              | Fixed point-to-point access point |                 |
|         | √            | Client device                     | 11 dBm /MHz     |
| UNII-2A | √            |                                   | 11 dBm /MHz     |
| UNII-2C | √            |                                   | 11 dBm /MHz     |
| UNII-3  | √            |                                   | 30 dBm /500 kHz |

### Notes:

If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power And the peak power spectral density shall be reduced by the amount in dB that the directional gain if the antenna exceed 6 dBi

### Test procedure

ANSI C63.10-2013 Section 12.3.2.2, 14.3.2.2

KDB 789033 D02 v02r01 - Section F

KDB 662911 D01 v02r01 - Section E). 2) and Section F)

### Test settings

#### Section F

The rules requires “maximum power spectral density” measurements where the intent is to measure the maximum value of the time average of the power spectral density measured during a period of continuous transmission. Refer to III.A for additional guidance for devices that use channel aggregation.

1. Create an average power spectrum for the EUT operating mode being tested by following the instructions in II.E.2. for measuring maximum conducted output power using a spectrum analyzer or EMI receiver: select the appropriate test method (SA-1, SA-2, SA-3, or alternatives to each) and apply it up to, but not including, the step labeled, “Compute power...” (This procedure is required even if the maximum conducted output power measurement was performed using a power meter, method PM.)
2. Search function on the instrument to find the peak of the spectrum and record its value.
3. Adjustments to the peak value of the spectrum, if applicable:
  - a) If Method SA-2 or SA-2 Alternative was used, add  $10 \log (1/x)$ , where  $x$  is the duty cycle, to the peak of the spectrum.
  - b) If Method SA-3 Alternative was used and the linear mode was used in II.E.2.g) (viii), add 1 dB to the final result to compensate for the difference between linear averaging and power averaging.
4. The result is the Maximum PSD over 1MHz reference bandwidth
5. For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the

preceding procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in Section 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth(i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 kHz bandwidth, the following adjustments to the procedures apply:

- a) Set  $RBW \geq 1/T$ , where T is defined in II.B.I.a).
- b) Set  $VBW \geq 3 \text{ RBW}$ .
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add  $10 \log (500 \text{ kHz} / \text{RBW})$  to the measured result, whereas RBW (<500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add  $10 \log (1\text{MHz}/\text{RBW})$  to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

**Note:**

- As a practical matter, it is recommended to use reduced RBW of 100 kHz for the II.F.5.c) and II.F.5.d), since  $RBW=100 \text{ kHz}$  is available on nearly all spectrum analyzers.
- Method SA-2 is used.
- Please refer to Appendix A for plots

**Test results****[DC 5 V]****802.11ax HE20 SISO in the UNII-1 band**

| Channel | Frequency<br>(MHz) | Tones | RU<br>offset | Measured<br>PSD<br>(dBm/MHz) | DCF<br>(dB) | Maximum<br>PSD<br>(dBm/MHz) | Maximum<br>PSD Limit<br>(dBm/MHz) |
|---------|--------------------|-------|--------------|------------------------------|-------------|-----------------------------|-----------------------------------|
|         |                    |       |              |                              |             | Average                     |                                   |
| Low     | 5 180              | 26T   | 0            | 9.06                         | 0.22        | 9.28                        | 11.00                             |
|         |                    |       | 4            | 9.17                         | 0.22        | 9.39                        | 11.00                             |
|         |                    |       | 8            | 8.81                         | 0.22        | 9.03                        | 11.00                             |
|         |                    | 52T   | 37           | 8.78                         | 0.22        | 9.00                        | 11.00                             |
|         |                    |       | 38           | 9.15                         | 0.22        | 9.37                        | 11.00                             |
|         |                    |       | 40           | 8.73                         | 0.22        | 8.95                        | 11.00                             |
|         |                    | 106T  | 53           | 6.36                         | 0.22        | 6.58                        | 11.00                             |
|         |                    |       | 54           | 6.53                         | 0.22        | 6.75                        | 11.00                             |
|         |                    | 242T  | 61           | 2.91                         | 0.22        | 3.13                        | 11.00                             |
|         |                    | SU    | -            | 2.82                         | 0.30        | 3.12                        | 11.00                             |
| Mid     | 5 200              | 26T   | 0            | 9.72                         | 0.22        | 9.94                        | 11.00                             |
|         |                    |       | 4            | 9.28                         | 0.22        | 9.50                        | 11.00                             |
|         |                    |       | 8            | 9.34                         | 0.22        | 9.56                        | 11.00                             |
|         |                    | 52T   | 37           | 9.36                         | 0.22        | 9.58                        | 11.00                             |
|         |                    |       | 38           | 9.26                         | 0.22        | 9.48                        | 11.00                             |
|         |                    |       | 40           | 9.37                         | 0.22        | 9.59                        | 11.00                             |
|         |                    | 106T  | 53           | 6.73                         | 0.22        | 6.95                        | 11.00                             |
|         |                    |       | 54           | 6.67                         | 0.22        | 6.89                        | 11.00                             |
|         |                    | 242T  | 61           | 3.61                         | 0.22        | 3.83                        | 11.00                             |
|         |                    | SU    | -            | 3.53                         | 0.30        | 3.83                        | 11.00                             |
| High    | 5 240              | 26T   | 0            | 3.00                         | 0.22        | 3.22                        | 11.00                             |
|         |                    |       | 4            | 2.65                         | 0.22        | 2.87                        | 11.00                             |
|         |                    |       | 8            | 2.70                         | 0.22        | 2.92                        | 11.00                             |
|         |                    | 52T   | 37           | 2.57                         | 0.22        | 2.79                        | 11.00                             |
|         |                    |       | 38           | 2.65                         | 0.22        | 2.87                        | 11.00                             |
|         |                    |       | 40           | 2.24                         | 0.22        | 2.46                        | 11.00                             |
|         |                    | 106T  | 53           | 3.16                         | 0.22        | 3.38                        | 11.00                             |
|         |                    |       | 54           | 3.14                         | 0.22        | 3.36                        | 11.00                             |
|         |                    | 242T  | 61           | 3.11                         | 0.22        | 3.33                        | 11.00                             |
|         |                    | SU    | -            | 3.15                         | 0.30        | 3.45                        | 11.00                             |

**Note:**

1. Maximum PSD(dB m/MHz) = Reading (dB m/MHz) + DCF(dB)

**802.11ax HE20 SISO in the UNII-2A band**

| Channel | Frequency<br>(MHz) | Tones | RU<br>offset | Measured<br>PSD<br>(dBm/MHz) | DCF<br>(dB) | Maximum<br>PSD<br>(dBm/MHz) | Maximum<br>PSD Limit<br>(dBm/MHz) |
|---------|--------------------|-------|--------------|------------------------------|-------------|-----------------------------|-----------------------------------|
|         |                    |       |              |                              |             | Average                     |                                   |
| Low     | 5 260              | 26T   | 0            | 9.14                         | 0.22        | 9.36                        | 11.00                             |
|         |                    |       | 4            | 9.34                         | 0.22        | 9.56                        | 11.00                             |
|         |                    |       | 8            | 9.27                         | 0.22        | 9.49                        | 11.00                             |
|         |                    | 52T   | 37           | 9.17                         | 0.22        | 9.39                        | 11.00                             |
|         |                    |       | 38           | 9.52                         | 0.22        | 9.74                        | 11.00                             |
|         |                    |       | 40           | 9.29                         | 0.22        | 9.51                        | 11.00                             |
|         |                    | 106T  | 53           | 6.89                         | 0.22        | 7.11                        | 11.00                             |
|         |                    |       | 54           | 7.07                         | 0.22        | 7.29                        | 11.00                             |
|         |                    | 242T  | 61           | 3.44                         | 0.22        | 3.66                        | 11.00                             |
|         |                    | SU    | -            | 3.55                         | 0.30        | 3.85                        | 11.00                             |
| Mid     | 5 280              | 26T   | 0            | 8.75                         | 0.22        | 8.97                        | 11.00                             |
|         |                    |       | 4            | 8.46                         | 0.22        | 8.68                        | 11.00                             |
|         |                    |       | 8            | 8.61                         | 0.22        | 8.83                        | 11.00                             |
|         |                    | 52T   | 37           | 8.96                         | 0.22        | 9.18                        | 11.00                             |
|         |                    |       | 38           | 9.25                         | 0.22        | 9.47                        | 11.00                             |
|         |                    |       | 40           | 8.57                         | 0.22        | 8.79                        | 11.00                             |
|         |                    | 106T  | 53           | 6.17                         | 0.22        | 6.39                        | 11.00                             |
|         |                    |       | 54           | 6.45                         | 0.22        | 6.67                        | 11.00                             |
|         |                    | 242T  | 61           | 3.11                         | 0.22        | 3.33                        | 11.00                             |
|         |                    | SU    | -            | 3.44                         | 0.30        | 3.74                        | 11.00                             |
| High    | 5 320              | 26T   | 0            | 8.67                         | 0.22        | 8.89                        | 11.00                             |
|         |                    |       | 4            | 9.10                         | 0.22        | 9.32                        | 11.00                             |
|         |                    |       | 8            | 8.45                         | 0.22        | 8.67                        | 11.00                             |
|         |                    | 52T   | 37           | 8.54                         | 0.22        | 8.76                        | 11.00                             |
|         |                    |       | 38           | 8.60                         | 0.22        | 8.82                        | 11.00                             |
|         |                    |       | 40           | 8.59                         | 0.22        | 8.81                        | 11.00                             |
|         |                    | 106T  | 53           | 6.51                         | 0.22        | 6.73                        | 11.00                             |
|         |                    |       | 54           | 6.46                         | 0.22        | 6.68                        | 11.00                             |
|         |                    | 242T  | 61           | 3.11                         | 0.22        | 3.33                        | 11.00                             |
|         |                    | SU    | -            | 3.29                         | 0.30        | 3.59                        | 11.00                             |

**Note:**

1. Maximum PSD(dB m/MHz) = Reading (dB m/MHz) + DCF(dB)

## 802.11ax HE20 SISO in the UNII-2C band

| Channel  | Frequency<br>(MHz) | Tones | RU<br>offset | Measured<br>PSD<br>(dBm/MHz) | DCF<br>(dB) | Maximum<br>PSD<br>(dBm/MHz) | Maximum<br>PSD Limit<br>(dBm/MHz) |
|----------|--------------------|-------|--------------|------------------------------|-------------|-----------------------------|-----------------------------------|
|          |                    |       |              |                              |             | Average                     |                                   |
| Low      | 5 500              | 26T   | 0            | 8.69                         | 0.22        | 8.91                        | 11.00                             |
|          |                    |       | 4            | 8.48                         | 0.22        | 8.70                        | 11.00                             |
|          |                    |       | 8            | 8.88                         | 0.22        | 9.10                        | 11.00                             |
|          |                    | 52T   | 37           | 9.29                         | 0.22        | 9.51                        | 11.00                             |
|          |                    |       | 38           | 9.53                         | 0.22        | 9.75                        | 11.00                             |
|          |                    |       | 40           | 9.18                         | 0.22        | 9.40                        | 11.00                             |
|          |                    | 106T  | 53           | 7.12                         | 0.22        | 7.34                        | 11.00                             |
|          |                    |       | 54           | 7.04                         | 0.22        | 7.26                        | 11.00                             |
|          |                    | 242T  | 61           | 3.62                         | 0.22        | 3.84                        | 11.00                             |
|          |                    | SU    | -            | 3.51                         | 0.30        | 3.81                        | 11.00                             |
| Mid      | 5 580              | 26T   | 0            | 9.12                         | 0.22        | 9.34                        | 11.00                             |
|          |                    |       | 4            | 8.84                         | 0.22        | 9.06                        | 11.00                             |
|          |                    |       | 8            | 8.86                         | 0.22        | 9.08                        | 11.00                             |
|          |                    | 52T   | 37           | 9.42                         | 0.22        | 9.64                        | 11.00                             |
|          |                    |       | 38           | 9.54                         | 0.22        | 9.76                        | 11.00                             |
|          |                    |       | 40           | 8.88                         | 0.22        | 9.10                        | 11.00                             |
|          |                    | 106T  | 53           | 6.51                         | 0.22        | 6.73                        | 11.00                             |
|          |                    |       | 54           | 6.51                         | 0.22        | 6.73                        | 11.00                             |
|          |                    | 242T  | 61           | 3.21                         | 0.22        | 3.43                        | 11.00                             |
|          |                    | SU    | -            | 3.44                         | 0.30        | 3.74                        | 11.00                             |
| High     | 5 700              | 26T   | 0            | 10.23                        | 0.22        | 10.45                       | 11.00                             |
|          |                    |       | 4            | 9.83                         | 0.22        | 10.05                       | 11.00                             |
|          |                    |       | 8            | 9.41                         | 0.22        | 9.63                        | 11.00                             |
|          |                    | 52T   | 37           | 9.61                         | 0.22        | 9.83                        | 11.00                             |
|          |                    |       | 38           | 9.97                         | 0.22        | 10.19                       | 11.00                             |
|          |                    |       | 40           | 9.39                         | 0.22        | 9.61                        | 11.00                             |
|          |                    | 106T  | 53           | 7.05                         | 0.22        | 7.27                        | 11.00                             |
|          |                    |       | 54           | 6.58                         | 0.22        | 6.80                        | 11.00                             |
|          |                    | 242T  | 61           | 4.01                         | 0.22        | 4.23                        | 11.00                             |
|          |                    | SU    | -            | 3.66                         | 0.30        | 3.96                        | 11.00                             |
| Straddle | 5 720              | 26T   | 0            | 8.62                         | 0.22        | 8.84                        | 11.00                             |
|          |                    |       | 4            | 7.90                         | 0.22        | 8.12                        | 11.00                             |
|          |                    | 52T   | 37           | 8.28                         | 0.22        | 8.50                        | 11.00                             |
|          |                    |       | 38           | 8.46                         | 0.22        | 8.68                        | 11.00                             |
|          |                    | 106T  | 53           | 5.37                         | 0.22        | 5.59                        | 11.00                             |

**Note:**

1. Maximum PSD(dB m/MHz) = Reading (dB m/MHz) + DCF(dB)

## 802.11ax HE20 SISO in the UNII-3 band

| Channel  | Frequency<br>(MHz) | Tones | RU<br>offset | Measured<br>PSD<br>(dBm/500kHz) | DCF<br>(dB) | Maximum<br>PSD<br>(dBm/500kHz) | Maximum<br>PSD Limit<br>(dBm/500kHz) |
|----------|--------------------|-------|--------------|---------------------------------|-------------|--------------------------------|--------------------------------------|
|          |                    |       |              |                                 |             | Average                        |                                      |
| Straddle | 5 720              | 26T   | 8            | 5.22                            | 0.22        | 5.44                           | 30.00                                |
|          |                    | 52T   | 40           | 4.88                            | 0.22        | 5.10                           | 30.00                                |
| Low      | 5 745              | 26T   | 0            | 5.15                            | 0.22        | 5.37                           | 30.00                                |
|          |                    |       | 4            | 6.16                            | 0.22        | 6.38                           | 30.00                                |
|          |                    |       | 8            | 5.30                            | 0.22        | 5.52                           | 30.00                                |
|          |                    | 52T   | 37           | 3.22                            | 0.22        | 3.44                           | 30.00                                |
|          |                    |       | 38           | 3.30                            | 0.22        | 3.52                           | 30.00                                |
|          |                    |       | 40           | 3.02                            | 0.22        | 3.24                           | 30.00                                |
|          |                    | 106T  | 53           | 0.39                            | 0.22        | 0.61                           | 30.00                                |
|          |                    |       | 54           | 0.43                            | 0.22        | 0.65                           | 30.00                                |
|          |                    | 242T  | 61           | -2.90                           | 0.22        | -2.68                          | 30.00                                |
|          |                    | SU    | -            | -3.06                           | 0.30        | -2.76                          | 30.00                                |
| Mid      | 5 785              | 26T   | 0            | 4.94                            | 0.22        | 5.16                           | 30.00                                |
|          |                    |       | 4            | 5.51                            | 0.22        | 5.73                           | 30.00                                |
|          |                    |       | 8            | 4.39                            | 0.22        | 4.61                           | 30.00                                |
|          |                    | 52T   | 37           | 2.36                            | 0.22        | 2.58                           | 30.00                                |
|          |                    |       | 38           | 2.56                            | 0.22        | 2.78                           | 30.00                                |
|          |                    |       | 40           | 2.49                            | 0.22        | 2.71                           | 30.00                                |
|          |                    | 106T  | 53           | 0.17                            | 0.22        | 0.39                           | 30.00                                |
|          |                    |       | 54           | -0.28                           | 0.22        | -0.06                          | 30.00                                |
|          |                    | 242T  | 61           | -3.42                           | 0.22        | -3.20                          | 30.00                                |
|          |                    | SU    | -            | -3.47                           | 0.30        | -3.17                          | 30.00                                |
| High     | 5 825              | 26T   | 0            | 4.97                            | 0.22        | 5.19                           | 30.00                                |
|          |                    |       | 4            | 5.53                            | 0.22        | 5.75                           | 30.00                                |
|          |                    |       | 8            | 4.12                            | 0.22        | 4.34                           | 30.00                                |
|          |                    | 52T   | 37           | 2.59                            | 0.22        | 2.81                           | 30.00                                |
|          |                    |       | 38           | 2.63                            | 0.22        | 2.85                           | 30.00                                |
|          |                    |       | 40           | 2.06                            | 0.22        | 2.28                           | 30.00                                |
|          |                    | 106T  | 53           | -0.29                           | 0.22        | -0.07                          | 30.00                                |
|          |                    |       | 54           | -0.46                           | 0.22        | -0.24                          | 30.00                                |
|          |                    | 242T  | 61           | -3.77                           | 0.22        | -3.55                          | 30.00                                |
|          |                    | SU    | -            | -3.41                           | 0.30        | -3.11                          | 30.00                                |

**Note:**

1. Maximum PSD(dB m/MHz) = Reading (dB m/MHz) + DCF(dB)

**802.11ax HE20 SISO in the Straddle**

| Band    | Frequency<br>(MHz) | Tones | RU<br>offset | Measured PSD | DCF<br>(dB) | Maximum<br>PSD | Maximum<br>PSD Limit |
|---------|--------------------|-------|--------------|--------------|-------------|----------------|----------------------|
|         |                    |       |              |              |             | Average        |                      |
| UNII-2C | 5 720              | 106T  | 54           | 5.08         | 0.22        | 5.30           | 11.00                |
|         |                    | 242T  | 61           | 1.94         | 0.22        | 2.16           | 11.00                |
|         |                    | SU    | -            | 1.87         | 0.30        | 2.17           | 11.00                |
| UNII-3  |                    | 106T  | 54           | 1.87         | 0.22        | 2.09           | 30.00                |
|         |                    | 242T  | 61           | -1.61        | 0.22        | -1.39          | 30.00                |
|         |                    | SU    | -            | -1.53        | 0.30        | -1.23          | 30.00                |

**Note:**

1. Maximum PSD(dB m/MHz) = Reading (dB m/MHz) + DCF(dB)
2. The Unit of UNII-2C is (dB m / MHz) and Unit of UNII-3 is (dB m / 500 kHz)

**[DC 12 V]****802.11ax HE20 SISO in the UNII-1 band**

| Channel | Frequency<br>(MHz) | Tones | RU<br>offset | Measured<br>PSD<br>(dBm/MHz) | DCF<br>(dB) | Maximum<br>PSD<br>(dBm/MHz) | Maximum<br>PSD Limit<br>(dBm/MHz) |
|---------|--------------------|-------|--------------|------------------------------|-------------|-----------------------------|-----------------------------------|
|         |                    |       |              |                              |             | Average                     |                                   |
| Low     | 5 180              | 26T   | 0            | 9.10                         | 0.22        | 9.32                        | 11.00                             |
|         |                    |       | 4            | 8.71                         | 0.22        | 8.93                        | 11.00                             |
|         |                    |       | 8            | 9.13                         | 0.22        | 9.35                        | 11.00                             |
|         |                    | 52T   | 37           | 8.80                         | 0.22        | 9.02                        | 11.00                             |
|         |                    |       | 38           | 9.44                         | 0.22        | 9.66                        | 11.00                             |
|         |                    |       | 40           | 9.30                         | 0.22        | 9.52                        | 11.00                             |
|         |                    | 106T  | 53           | 6.38                         | 0.22        | 6.60                        | 11.00                             |
|         |                    |       | 54           | 6.27                         | 0.22        | 6.49                        | 11.00                             |
|         |                    | 242T  | 61           | 3.10                         | 0.22        | 3.32                        | 11.00                             |
|         |                    | SU    | -            | 2.82                         | 0.30        | 3.12                        | 11.00                             |
| Mid     | 5 200              | 26T   | 0            | 9.47                         | 0.22        | 9.69                        | 11.00                             |
|         |                    |       | 4            | 9.29                         | 0.22        | 9.51                        | 11.00                             |
|         |                    |       | 8            | 9.22                         | 0.22        | 9.44                        | 11.00                             |
|         |                    | 52T   | 37           | 9.27                         | 0.22        | 9.49                        | 11.00                             |
|         |                    |       | 38           | 9.55                         | 0.22        | 9.77                        | 11.00                             |
|         |                    |       | 40           | 9.41                         | 0.22        | 9.63                        | 11.00                             |
|         |                    | 106T  | 53           | 6.58                         | 0.22        | 6.80                        | 11.00                             |
|         |                    |       | 54           | 6.66                         | 0.22        | 6.88                        | 11.00                             |
|         |                    | 242T  | 61           | 3.11                         | 0.22        | 3.33                        | 11.00                             |
|         |                    | SU    | -            | 3.18                         | 0.30        | 3.48                        | 11.00                             |
| High    | 5 240              | 26T   | 0            | 3.22                         | 0.22        | 3.44                        | 11.00                             |
|         |                    |       | 4            | 2.50                         | 0.22        | 2.72                        | 11.00                             |
|         |                    |       | 8            | 3.01                         | 0.22        | 3.23                        | 11.00                             |
|         |                    | 52T   | 37           | 2.64                         | 0.22        | 2.86                        | 11.00                             |
|         |                    |       | 38           | 3.30                         | 0.22        | 3.52                        | 11.00                             |
|         |                    |       | 40           | 2.37                         | 0.22        | 2.59                        | 11.00                             |
|         |                    | 106T  | 53           | 3.01                         | 0.22        | 3.23                        | 11.00                             |
|         |                    |       | 54           | 3.21                         | 0.22        | 3.43                        | 11.00                             |
|         |                    | 242T  | 61           | 0.17                         | 0.22        | 0.39                        | 11.00                             |
|         |                    | SU    | -            | -0.30                        | 0.30        | 0.00                        | 11.00                             |

**Note:**

1. Maximum PSD(dB m/MHz) = Reading (dB m/MHz) + DCF(dB)

## 802.11ax HE20 SISO in the UNII-2A band

| Channel | Frequency<br>(MHz) | Tones | RU<br>offset | Measured<br>PSD<br>(dBm/MHz) | DCF<br>(dB) | Maximum<br>PSD<br>(dBm/MHz) | Maximum<br>PSD Limit<br>(dBm/MHz) |
|---------|--------------------|-------|--------------|------------------------------|-------------|-----------------------------|-----------------------------------|
|         |                    |       |              |                              |             | Average                     |                                   |
| Low     | 5 260              | 26T   | 0            | 9.36                         | 0.22        | 9.58                        | 11.00                             |
|         |                    |       | 4            | 9.16                         | 0.22        | 9.38                        | 11.00                             |
|         |                    |       | 8            | 9.41                         | 0.22        | 9.63                        | 11.00                             |
|         |                    | 52T   | 37           | 9.44                         | 0.22        | 9.66                        | 11.00                             |
|         |                    |       | 38           | 9.50                         | 0.22        | 9.72                        | 11.00                             |
|         |                    |       | 40           | 9.71                         | 0.22        | 9.93                        | 11.00                             |
|         |                    | 106T  | 53           | 6.87                         | 0.22        | 7.09                        | 11.00                             |
|         |                    |       | 54           | 6.86                         | 0.22        | 7.08                        | 11.00                             |
|         |                    | 242T  | 61           | 3.97                         | 0.22        | 4.19                        | 11.00                             |
|         |                    | SU    | -            | 3.72                         | 0.30        | 4.02                        | 11.00                             |
| Mid     | 5 280              | 26T   | 0            | 8.89                         | 0.22        | 9.11                        | 11.00                             |
|         |                    |       | 4            | 8.43                         | 0.22        | 8.65                        | 11.00                             |
|         |                    |       | 8            | 8.88                         | 0.22        | 9.10                        | 11.00                             |
|         |                    | 52T   | 37           | 8.74                         | 0.22        | 8.96                        | 11.00                             |
|         |                    |       | 38           | 8.79                         | 0.22        | 9.01                        | 11.00                             |
|         |                    |       | 40           | 8.60                         | 0.22        | 8.82                        | 11.00                             |
|         |                    | 106T  | 53           | 6.57                         | 0.22        | 6.79                        | 11.00                             |
|         |                    |       | 54           | 6.49                         | 0.22        | 6.71                        | 11.00                             |
|         |                    | 242T  | 61           | 3.02                         | 0.22        | 3.24                        | 11.00                             |
|         |                    | SU    | -            | 3.03                         | 0.30        | 3.33                        | 11.00                             |
| High    | 5 320              | 26T   | 0            | 8.46                         | 0.22        | 8.68                        | 11.00                             |
|         |                    |       | 4            | 8.29                         | 0.22        | 8.51                        | 11.00                             |
|         |                    |       | 8            | 8.66                         | 0.22        | 8.88                        | 11.00                             |
|         |                    | 52T   | 37           | 8.51                         | 0.22        | 8.73                        | 11.00                             |
|         |                    |       | 38           | 8.90                         | 0.22        | 9.12                        | 11.00                             |
|         |                    |       | 40           | 8.59                         | 0.22        | 8.81                        | 11.00                             |
|         |                    | 106T  | 53           | 6.06                         | 0.22        | 6.28                        | 11.00                             |
|         |                    |       | 54           | 5.96                         | 0.22        | 6.18                        | 11.00                             |
|         |                    | 242T  | 61           | 2.91                         | 0.22        | 3.13                        | 11.00                             |
|         |                    | SU    | -            | 2.62                         | 0.30        | 2.92                        | 11.00                             |

**Note:**

1. Maximum PSD(dB m/MHz) = Reading (dB m/MHz) + DCF(dB)

## 802.11ax HE20 SISO in the UNII-2C band

| Channel  | Frequency<br>(MHz) | Tones | RU<br>offset | Measured<br>PSD<br>(dBm/MHz) | DCF<br>(dB) | Maximum<br>PSD<br>(dBm/MHz) | Maximum<br>PSD Limit<br>(dBm/MHz) |
|----------|--------------------|-------|--------------|------------------------------|-------------|-----------------------------|-----------------------------------|
|          |                    |       |              |                              |             | Average                     |                                   |
| Low      | 5 500              | 26T   | 0            | 9.14                         | 0.22        | 9.36                        | 11.00                             |
|          |                    |       | 4            | 8.99                         | 0.22        | 9.21                        | 11.00                             |
|          |                    |       | 8            | 9.15                         | 0.22        | 9.37                        | 11.00                             |
|          |                    | 52T   | 37           | 9.31                         | 0.22        | 9.53                        | 11.00                             |
|          |                    |       | 38           | 9.85                         | 0.22        | 10.07                       | 11.00                             |
|          |                    |       | 40           | 9.56                         | 0.22        | 9.78                        | 11.00                             |
|          |                    | 106T  | 53           | 6.99                         | 0.22        | 7.21                        | 11.00                             |
|          |                    |       | 54           | 7.14                         | 0.22        | 7.36                        | 11.00                             |
|          |                    | 242T  | 61           | 3.79                         | 0.22        | 4.01                        | 11.00                             |
|          |                    | SU    | -            | 3.83                         | 0.30        | 4.13                        | 11.00                             |
| Mid      | 5 580              | 26T   | 0            | 8.91                         | 0.22        | 9.13                        | 11.00                             |
|          |                    |       | 4            | 8.68                         | 0.22        | 8.90                        | 11.00                             |
|          |                    |       | 8            | 8.67                         | 0.22        | 8.89                        | 11.00                             |
|          |                    | 52T   | 37           | 9.59                         | 0.22        | 9.81                        | 11.00                             |
|          |                    |       | 38           | 9.91                         | 0.22        | 10.13                       | 11.00                             |
|          |                    |       | 40           | 9.23                         | 0.22        | 9.45                        | 11.00                             |
|          |                    | 106T  | 53           | 6.55                         | 0.22        | 6.77                        | 11.00                             |
|          |                    |       | 54           | 6.44                         | 0.22        | 6.66                        | 11.00                             |
|          |                    | 242T  | 61           | 3.33                         | 0.22        | 3.55                        | 11.00                             |
|          |                    | SU    | -            | 3.24                         | 0.30        | 3.54                        | 11.00                             |
| High     | 5 700              | 26T   | 0            | 10.14                        | 0.22        | 10.36                       | 11.00                             |
|          |                    |       | 4            | 10.06                        | 0.22        | 10.28                       | 11.00                             |
|          |                    |       | 8            | 9.21                         | 0.22        | 9.43                        | 11.00                             |
|          |                    | 52T   | 37           | 9.77                         | 0.22        | 9.99                        | 11.00                             |
|          |                    |       | 38           | 10.28                        | 0.22        | 10.50                       | 11.00                             |
|          |                    |       | 40           | 9.23                         | 0.22        | 9.45                        | 11.00                             |
|          |                    | 106T  | 53           | 7.22                         | 0.22        | 7.44                        | 11.00                             |
|          |                    |       | 54           | 6.83                         | 0.22        | 7.05                        | 11.00                             |
|          |                    | 242T  | 61           | 3.70                         | 0.22        | 3.92                        | 11.00                             |
|          |                    | SU    | -            | 4.13                         | 0.30        | 4.43                        | 11.00                             |
| Straddle | 5 720              | 26T   | 0            | 8.61                         | 0.22        | 8.83                        | 11.00                             |
|          |                    |       | 4            | 7.94                         | 0.22        | 8.16                        | 11.00                             |
|          |                    | 52T   | 37           | 8.28                         | 0.22        | 8.50                        | 11.00                             |
|          |                    |       | 38           | 8.40                         | 0.22        | 8.62                        | 11.00                             |
|          |                    | 106T  | 53           | 5.40                         | 0.22        | 5.62                        | 11.00                             |

**Note:**

1. Maximum PSD(dB m/MHz) = Reading (dB m/MHz) + DCF(dB)

**802.11ax HE20 SISO in the UNII-3 band**

| Channel  | Frequency<br>(MHz) | Tones | RU<br>offset | Measured<br>PSD<br>(dBm/500kHz) | DCF<br>(dB) | Maximum<br>PSD<br>(dBm/500kHz) | Maximum<br>PSD Limit<br>(dBm/500kHz) |
|----------|--------------------|-------|--------------|---------------------------------|-------------|--------------------------------|--------------------------------------|
|          |                    |       |              |                                 |             | Average                        |                                      |
| Straddle | 5 720              | 26T   | 8            | 5.11                            | 0.22        | 5.33                           | 30.00                                |
|          |                    | 52T   | 40           | 4.75                            | 0.22        | 4.97                           | 30.00                                |
| Low      | 5 745              | 26T   | 0            | 5.59                            | 0.22        | 5.81                           | 30.00                                |
|          |                    |       | 4            | 6.06                            | 0.22        | 6.28                           | 30.00                                |
|          |                    |       | 8            | 5.74                            | 0.22        | 5.96                           | 30.00                                |
|          |                    | 52T   | 37           | 3.30                            | 0.22        | 3.52                           | 30.00                                |
|          |                    |       | 38           | 3.53                            | 0.22        | 3.75                           | 30.00                                |
|          |                    |       | 40           | 3.18                            | 0.22        | 3.40                           | 30.00                                |
|          |                    | 106T  | 53           | 0.58                            | 0.22        | 0.80                           | 30.00                                |
|          |                    |       | 54           | 0.83                            | 0.22        | 1.05                           | 30.00                                |
|          |                    | 242T  | 61           | -2.94                           | 0.22        | -2.72                          | 30.00                                |
|          |                    | SU    | -            | -2.93                           | 0.30        | -2.63                          | 30.00                                |
| Mid      | 5 785              | 26T   | 0            | 5.43                            | 0.22        | 5.65                           | 30.00                                |
|          |                    |       | 4            | 5.27                            | 0.22        | 5.49                           | 30.00                                |
|          |                    |       | 8            | 5.11                            | 0.22        | 5.33                           | 30.00                                |
|          |                    | 52T   | 37           | 3.07                            | 0.22        | 3.29                           | 30.00                                |
|          |                    |       | 38           | 2.68                            | 0.22        | 2.90                           | 30.00                                |
|          |                    |       | 40           | 2.39                            | 0.22        | 2.61                           | 30.00                                |
|          |                    | 106T  | 53           | 0.30                            | 0.22        | 0.52                           | 30.00                                |
|          |                    |       | 54           | -0.25                           | 0.22        | -0.03                          | 30.00                                |
|          |                    | 242T  | 61           | -3.53                           | 0.22        | -3.31                          | 30.00                                |
|          |                    | SU    | -            | -3.62                           | 0.30        | -3.32                          | 30.00                                |
| High     | 5 825              | 26T   | 0            | 5.45                            | 0.22        | 5.67                           | 30.00                                |
|          |                    |       | 4            | 5.42                            | 0.22        | 5.64                           | 30.00                                |
|          |                    |       | 8            | 4.53                            | 0.22        | 4.75                           | 30.00                                |
|          |                    | 52T   | 37           | 2.68                            | 0.22        | 2.90                           | 30.00                                |
|          |                    |       | 38           | 2.88                            | 0.22        | 3.10                           | 30.00                                |
|          |                    |       | 40           | 2.31                            | 0.22        | 2.53                           | 30.00                                |
|          |                    | 106T  | 53           | 0.16                            | 0.22        | 0.38                           | 30.00                                |
|          |                    |       | 54           | -0.33                           | 0.22        | -0.11                          | 30.00                                |
|          |                    | 242T  | 61           | -3.49                           | 0.22        | -3.27                          | 30.00                                |
|          |                    | SU    | -            | -3.37                           | 0.30        | -3.07                          | 30.00                                |

**Note:**

1. Maximum PSD(dB m/MHz) = Reading (dB m/MHz) + DCF(dB)

**802.11ax HE20 SISO in the Straddle**

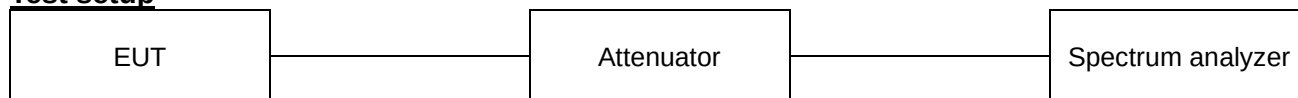
| Band    | Frequency<br>(MHz) | Tones | RU<br>offset | Measured PSD | DCF<br>(dB) | Maximum<br>PSD | Maximum<br>PSD Limit |
|---------|--------------------|-------|--------------|--------------|-------------|----------------|----------------------|
|         |                    |       |              |              |             | Average        |                      |
| UNII-2C | 5 720              | 106T  | 54           | 5.14         | 0.22        | 5.36           | 11.00                |
|         |                    | 242T  | 61           | 1.96         | 0.22        | 2.18           | 11.00                |
|         |                    | SU    | -            | 1.83         | 0.30        | 2.13           | 11.00                |
| UNII-3  |                    | 106T  | 54           | 1.91         | 0.22        | 2.13           | 30.00                |
|         |                    | 242T  | 61           | -1.61        | 0.22        | -1.39          | 30.00                |
|         |                    | SU    | -            | -1.61        | 0.30        | -1.31          | 30.00                |

**Note:**

1. Maximum PSD(dB m/MHz) = Reading (dB m/MHz) + DCF(dB)
2. The Unit of UNII-2C is (dB m / MHz) and Unit of UNII-3 is (dB m / 500 kHz)

### 7.3. 26 dB Bandwidth & 99% Bandwidth

#### Test setup



#### Limit

N/A

#### Test procedure

ANSI C63.10-2013 Section 12.4

KDB 789033 D02 v02r01 - Section C.1 (26dBbandwidth)

KDB 789033 D02 v02r01 - Section D (99% bandwidth)

#### Test settings

##### 1. 26 dB Bandwidth

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

##### 2. 99% Occupied Bandwidth

- Set center frequency to the nominal EUT channel center frequency.
- Set span = 1.5 times to 5.0 times the OBW.
- Set RBW = 1% to 5% of the OBW
- Set VBW  $\geq 3 \times$  RBW
- Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
- Use the 99% power bandwidth function of the instrument (if available).
- If the instrument does not have a 99% power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

#### Note:

- Please refer to Appendix A for plots
- Straddle channels: For 99% Bandwidth, measured 99% occupied bandwidth is separated as below.
  - For UNII-2C = 5 725 MHz – T1 (Measured frequency on the marker table)
  - For UNII 3 = T2 (Measured frequency on the marker table) - 5 725 MHz

**Test results****[DC 5 V]**

| Band   | Mode | Frequency<br>(MHz) | Tones | RU<br>offset | 26 dB bandwidth (MHz) | 99% bandwidth (MHz) |
|--------|------|--------------------|-------|--------------|-----------------------|---------------------|
| UNII-1 | HE20 | 5 180              | 26T   | 0            | 19.68                 | 18.23               |
|        |      |                    |       | 4            | 18.03                 | 16.73               |
|        |      |                    |       | 8            | 20.93                 | 18.18               |
|        |      |                    | 52T   | 37           | 19.33                 | 17.98               |
|        |      |                    |       | 38           | 18.08                 | 16.88               |
|        |      |                    |       | 40           | 20.23                 | 18.13               |
|        |      |                    | 106T  | 53           | 19.88                 | 17.73               |
|        |      |                    |       | 54           | 20.18                 | 17.98               |
|        |      |                    | 242T  | 61           | 20.78                 | 18.83               |
|        |      |                    | SU    | -            | 20.73                 | 18.88               |
|        |      | 5 200              | 26T   | 0            | 19.53                 | 18.23               |
|        |      |                    |       | 4            | 18.03                 | 16.73               |
|        |      |                    |       | 8            | 20.48                 | 18.23               |
|        |      |                    | 52T   | 37           | 19.68                 | 18.13               |
|        |      |                    |       | 38           | 18.33                 | 16.53               |
|        |      |                    |       | 40           | 20.13                 | 18.13               |
|        |      |                    | 106T  | 53           | 20.33                 | 18.03               |
|        |      |                    |       | 54           | 20.38                 | 18.03               |
|        |      |                    | 242T  | 61           | 20.88                 | 18.88               |
|        |      |                    | SU    | -            | 20.18                 | 18.88               |
|        |      | 5 240              | 26T   | 0            | 19.78                 | 18.23               |
|        |      |                    |       | 4            | 18.18                 | 16.28               |
|        |      |                    |       | 8            | 20.78                 | 18.43               |
|        |      |                    | 52T   | 37           | 19.58                 | 18.03               |
|        |      |                    |       | 38           | 18.18                 | 16.73               |
|        |      |                    |       | 40           | 20.13                 | 18.03               |
|        |      |                    | 106T  | 53           | 19.53                 | 17.98               |
|        |      |                    |       | 54           | 20.33                 | 18.03               |
|        |      |                    | 242T  | 61           | 21.18                 | 18.83               |
|        |      |                    | SU    | -            | 20.58                 | 18.83               |

| Band    | Mode | Frequency (MHz) | Tones | RU offset | 26 dB bandwidth (MHz) | 99% bandwidth (MHz) |
|---------|------|-----------------|-------|-----------|-----------------------|---------------------|
| UNII-2A | HE20 | 5 260           | 26T   | 0         | 19.78                 | 18.28               |
|         |      |                 |       | 4         | 18.08                 | 16.83               |
|         |      |                 |       | 8         | 20.83                 | 18.43               |
|         |      |                 | 52T   | 37        | 19.68                 | 18.03               |
|         |      |                 |       | 38        | 18.33                 | 16.78               |
|         |      |                 |       | 40        | 20.08                 | 18.03               |
|         |      |                 | 106T  | 53        | 19.93                 | 17.98               |
|         |      |                 |       | 54        | 20.48                 | 18.03               |
|         |      |                 | 242T  | 61        | 21.23                 | 18.83               |
|         |      |                 | SU    | -         | 20.83                 | 18.88               |
|         |      | 5 280           | 26T   | 0         | 19.73                 | 18.28               |
|         |      |                 |       | 4         | 18.08                 | 16.63               |
|         |      |                 |       | 8         | 20.78                 | 18.43               |
|         |      |                 | 52T   | 37        | 19.53                 | 18.03               |
|         |      |                 |       | 38        | 18.28                 | 16.53               |
|         |      |                 |       | 40        | 20.23                 | 18.13               |
|         |      |                 | 106T  | 53        | 19.63                 | 17.98               |
|         |      |                 |       | 54        | 19.98                 | 18.08               |
|         |      |                 | 242T  | 61        | 21.38                 | 18.88               |
|         |      |                 | SU    | -         | 20.93                 | 18.88               |
|         |      | 5 320           | 26T   | 0         | 19.73                 | 18.28               |
|         |      |                 |       | 4         | 18.08                 | 16.78               |
|         |      |                 |       | 8         | 20.73                 | 18.33               |
|         |      |                 | 52T   | 37        | 19.88                 | 18.03               |
|         |      |                 |       | 38        | 18.28                 | 16.78               |
|         |      |                 |       | 40        | 20.08                 | 18.08               |
|         |      |                 | 106T  | 53        | 20.43                 | 17.93               |
|         |      |                 |       | 54        | 20.38                 | 17.98               |
|         |      |                 | 242T  | 61        | 21.13                 | 18.83               |
|         |      |                 | SU    | -         | 20.83                 | 18.83               |

| Band    | Mode | Frequency (MHz) | Tones | RU offset | 26 dB bandwidth (MHz) | 99% bandwidth (MHz) |
|---------|------|-----------------|-------|-----------|-----------------------|---------------------|
| UNII-2C | HE20 | 5 500           | 26T   | 0         | 19.73                 | 18.28               |
|         |      |                 |       | 4         | 18.18                 | 16.58               |
|         |      |                 |       | 8         | 20.78                 | 18.43               |
|         |      |                 | 52T   | 37        | 19.58                 | 18.03               |
|         |      |                 |       | 38        | 18.18                 | 16.83               |
|         |      |                 |       | 40        | 20.03                 | 18.08               |
|         |      |                 | 106T  | 53        | 20.43                 | 18.03               |
|         |      |                 |       | 54        | 20.73                 | 18.03               |
|         |      |                 | 242T  | 61        | 20.98                 | 18.83               |
|         |      |                 | SU    | -         | 20.78                 | 18.83               |
|         |      | 5 600           | 26T   | 0         | 19.68                 | 18.23               |
|         |      |                 |       | 4         | 18.13                 | 16.48               |
|         |      |                 |       | 8         | 20.58                 | 18.38               |
|         |      |                 | 52T   | 37        | 19.63                 | 17.83               |
|         |      |                 |       | 38        | 18.38                 | 16.78               |
|         |      |                 |       | 40        | 20.18                 | 17.93               |
|         |      |                 | 106T  | 53        | 19.83                 | 17.93               |
|         |      |                 |       | 54        | 20.88                 | 18.03               |
|         |      |                 | 242T  | 61        | 21.18                 | 18.88               |
|         |      |                 | SU    | -         | 20.53                 | 18.88               |
|         |      | 5 700           | 26T   | 0         | 19.48                 | 18.18               |
|         |      |                 |       | 4         | 18.08                 | 16.73               |
|         |      |                 |       | 8         | 20.78                 | 18.38               |
|         |      |                 | 52T   | 37        | 19.48                 | 17.88               |
|         |      |                 |       | 38        | 17.83                 | 16.83               |
|         |      |                 |       | 40        | 20.03                 | 18.08               |
|         |      |                 | 106T  | 53        | 19.88                 | 17.83               |
|         |      |                 |       | 54        | 20.88                 | 18.03               |
|         |      |                 | 242T  | 61        | 21.13                 | 18.88               |
|         |      |                 | SU    | -         | 20.83                 | 18.88               |

| Band    | Mode | Frequency (MHz)   | Tones | RU offset | 26 dB bandwidth (MHz) | 99% bandwidth (MHz) |
|---------|------|-------------------|-------|-----------|-----------------------|---------------------|
| UNII-2C | HE20 | Straddle<br>5 720 | 26T   | 0         | 15.19                 | 18.03               |
|         |      |                   |       | 4         | 14.09                 | 16.63               |
|         |      |                   | 52T   | 37        | 15.09                 | 17.98               |
|         |      |                   |       | 38        | 14.24                 | 16.78               |
|         |      |                   | 106T  | 53        | 15.14                 | 17.98               |
|         |      |                   |       | 54*       | 5.64                  | 18.03               |
|         |      |                   | 242T  | 61*       | 5.74                  | 18.88               |
|         |      |                   | SU    | -*        | 5.64                  | 18.88               |

\* RU Allocation included in the straddle band

**[DC 12 V]**

| Band   | Mode | Frequency<br>(MHz) | Tones | RU<br>offset | 26 dB bandwidth (MHz) | 99% bandwidth (MHz) |
|--------|------|--------------------|-------|--------------|-----------------------|---------------------|
| UNII-1 | HE20 | 5 180              | 26T   | 0            | 19.83                 | 18.18               |
|        |      |                    |       | 4            | 18.18                 | 16.58               |
|        |      |                    |       | 8            | 20.28                 | 18.33               |
|        |      |                    | 52T   | 37           | 19.73                 | 17.88               |
|        |      |                    |       | 38           | 18.28                 | 16.73               |
|        |      |                    |       | 40           | 20.28                 | 17.98               |
|        |      |                    | 106T  | 53           | 19.88                 | 18.03               |
|        |      |                    |       | 54           | 20.03                 | 17.98               |
|        |      |                    | 242T  | 61           | 21.03                 | 18.88               |
|        |      |                    | SU    | -            | 20.38                 | 18.83               |
|        |      | 5 200              | 26T   | 0            | 19.63                 | 18.23               |
|        |      |                    |       | 4            | 18.08                 | 16.58               |
|        |      |                    |       | 8            | 20.68                 | 18.28               |
|        |      |                    | 52T   | 37           | 19.53                 | 18.08               |
|        |      |                    |       | 38           | 18.18                 | 16.78               |
|        |      |                    |       | 40           | 20.33                 | 18.03               |
|        |      |                    | 106T  | 53           | 19.88                 | 17.78               |
|        |      |                    |       | 54           | 19.83                 | 17.73               |
|        |      |                    | 242T  | 61           | 21.38                 | 18.88               |
|        |      |                    | SU    | -            | 20.78                 | 18.88               |
|        |      | 5 240              | 26T   | 0            | 19.78                 | 18.18               |
|        |      |                    |       | 4            | 18.23                 | 16.78               |
|        |      |                    |       | 8            | 20.88                 | 18.38               |
|        |      |                    | 52T   | 37           | 19.73                 | 18.03               |
|        |      |                    |       | 38           | 18.28                 | 16.83               |
|        |      |                    |       | 40           | 20.03                 | 18.08               |
|        |      |                    | 106T  | 53           | 19.83                 | 18.03               |
|        |      |                    |       | 54           | 20.33                 | 17.78               |
|        |      |                    | 242T  | 61           | 21.08                 | 18.83               |
|        |      |                    | SU    | -            | 20.83                 | 18.83               |

| Band    | Mode | Frequency (MHz) | Tones | RU offset | 26 dB bandwidth (MHz) | 99% bandwidth (MHz) |
|---------|------|-----------------|-------|-----------|-----------------------|---------------------|
| UNII-2A | HE20 | 5 260           | 26T   | 0         | 19.73                 | 18.23               |
|         |      |                 |       | 4         | 18.08                 | 16.63               |
|         |      |                 |       | 8         | 20.68                 | 18.43               |
|         |      |                 | 52T   | 37        | 19.88                 | 17.98               |
|         |      |                 |       | 38        | 18.33                 | 16.88               |
|         |      |                 |       | 40        | 20.13                 | 18.08               |
|         |      |                 | 106T  | 53        | 20.38                 | 18.03               |
|         |      |                 |       | 54        | 20.53                 | 17.93               |
|         |      |                 | 242T  | 61        | 21.28                 | 18.88               |
|         |      |                 | SU    | -         | 20.88                 | 18.88               |
|         |      | 5 280           | 26T   | 0         | 19.83                 | 18.28               |
|         |      |                 |       | 4         | 18.13                 | 16.68               |
|         |      |                 |       | 8         | 20.88                 | 18.38               |
|         |      |                 | 52T   | 37        | 19.73                 | 17.98               |
|         |      |                 |       | 38        | 18.33                 | 16.78               |
|         |      |                 |       | 40        | 20.08                 | 18.08               |
|         |      |                 | 106T  | 53        | 19.83                 | 17.98               |
|         |      |                 |       | 54        | 20.48                 | 18.03               |
|         |      |                 | 242T  | 61        | 21.23                 | 18.83               |
|         |      |                 | SU    | -         | 20.88                 | 18.88               |
|         |      | 5 320           | 26T   | 0         | 19.78                 | 18.18               |
|         |      |                 |       | 4         | 18.13                 | 16.48               |
|         |      |                 |       | 8         | 20.83                 | 18.38               |
|         |      |                 | 52T   | 37        | 19.83                 | 18.03               |
|         |      |                 |       | 38        | 18.33                 | 16.78               |
|         |      |                 |       | 40        | 20.13                 | 17.98               |
|         |      |                 | 106T  | 53        | 19.78                 | 18.03               |
|         |      |                 |       | 54        | 20.38                 | 18.03               |
|         |      |                 | 242T  | 61        | 21.23                 | 18.83               |
|         |      |                 | SU    | -         | 20.83                 | 18.83               |

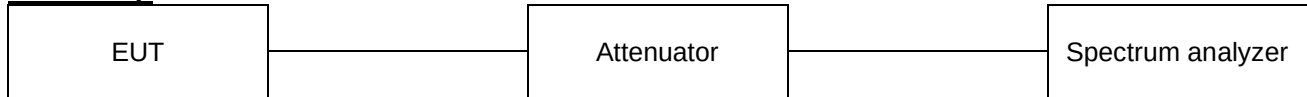
| Band    | Mode | Frequency (MHz) | Tones | RU offset | 26 dB bandwidth (MHz) | 99% bandwidth (MHz) |
|---------|------|-----------------|-------|-----------|-----------------------|---------------------|
| UNII-2C | HE20 | 5 500           | 26T   | 0         | 19.73                 | 18.23               |
|         |      |                 |       | 4         | 18.18                 | 16.83               |
|         |      |                 |       | 8         | 20.53                 | 18.28               |
|         |      |                 | 52T   | 37        | 19.73                 | 18.08               |
|         |      |                 |       | 38        | 18.28                 | 16.63               |
|         |      |                 |       | 40        | 20.33                 | 17.98               |
|         |      |                 | 106T  | 53        | 19.98                 | 18.03               |
|         |      |                 |       | 54        | 20.38                 | 17.98               |
|         |      |                 | 242T  | 61        | 21.13                 | 18.88               |
|         |      |                 | SU    | -         | 20.83                 | 18.88               |
|         |      | 5 600           | 26T   | 0         | 19.58                 | 18.23               |
|         |      |                 |       | 4         | 18.18                 | 16.78               |
|         |      |                 |       | 8         | 20.53                 | 18.48               |
|         |      |                 | 52T   | 37        | 19.78                 | 17.98               |
|         |      |                 |       | 38        | 18.23                 | 16.83               |
|         |      |                 |       | 40        | 19.98                 | 18.08               |
|         |      |                 | 106T  | 53        | 19.88                 | 17.98               |
|         |      |                 |       | 54        | 20.53                 | 18.08               |
|         |      |                 | 242T  | 61        | 21.43                 | 18.88               |
|         |      |                 | SU    | -         | 20.93                 | 18.88               |
|         |      | 5 700           | 26T   | 0         | 19.63                 | 18.13               |
|         |      |                 |       | 4         | 18.18                 | 16.68               |
|         |      |                 |       | 8         | 20.73                 | 18.38               |
|         |      |                 | 52T   | 37        | 19.68                 | 17.88               |
|         |      |                 |       | 38        | 18.28                 | 16.73               |
|         |      |                 |       | 40        | 20.33                 | 18.08               |
|         |      |                 | 106T  | 53        | 19.93                 | 17.88               |
|         |      |                 |       | 54        | 20.98                 | 18.08               |
|         |      |                 | 242T  | 61        | 21.03                 | 18.83               |
|         |      |                 | SU    | -         | 20.73                 | 18.83               |

| Band    | Mode | Frequency (MHz)   | Tones | RU offset | 26 dB bandwidth (MHz) | 99% bandwidth (MHz) |
|---------|------|-------------------|-------|-----------|-----------------------|---------------------|
| UNII-2C | HE20 | Straddle<br>5 720 | 26T   | 0         | 15.19                 | 18.03               |
|         |      |                   |       | 4         | 14.09                 | 16.63               |
|         |      |                   | 52T   | 37        | 15.09                 | 17.98               |
|         |      |                   |       | 38        | 14.24                 | 16.78               |
|         |      |                   | 106T  | 53        | 15.14                 | 17.98               |
|         |      |                   |       | 54*       | 5.64                  | 18.03               |
|         |      |                   | 242T  | 61*       | 5.74                  | 18.88               |
|         |      |                   | SU    | -*        | 5.64                  | 18.88               |

\* RU Allocation included in the straddle band

## 7.4. 6 dB Bandwidth & 99% Bandwidth

### Test setup



### Limit

According to §15.407(e), Within the 5.725-5.850 GHz and 5.850-5.895 GHz bands, the minimum 6 dB bandwidth of U-NII devices shall be at least 500kHz.

### Test procedure

ANSI C63.10-2013 Section 6.9.2

KDB 789033 D02 v02r01 - Section C.2

### Test settings

Minimum Emission Bandwidth for the band 5.725–5.85 GHz and 5.850–5.895 GHz.

Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 kHz for the band 5.725–5.85 GHz and 5.850-5.895 GHz band. The following procedure shall be used for measuring this Bandwidth:

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW)  $\geq 3$  RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

### Note:

1. For the 6dB Bandwidth, it was tested at the RU allocation with lowest tones number for each bandwidth
2. \* RU Allocation included in the straddle band
3. Straddle channels: For 99% Bandwidth, measured 99% occupied bandwidth is separated as below.
  - For UNII-2C = 5 725 MHz – T1 (Measured frequency on the marker table)
  - For UNII 3 = T2 (Measured frequency on the marker table) - 5 725 MHz
4. Please refer to Appendix A for plots

**Test results****[DC 5 V]**

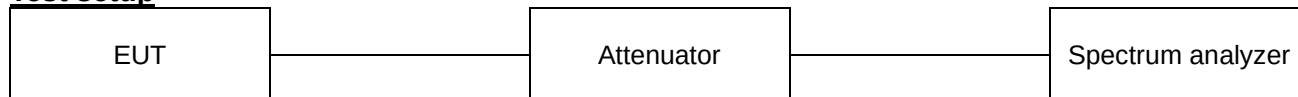
| Band   | Mode | Frequency (MHz)     | Tones | RU offset | 6 dB bandwidth (MHz) | 99% bandwidth (MHz) |
|--------|------|---------------------|-------|-----------|----------------------|---------------------|
| UNII-3 | HE20 | Straddle 5 720      | 26T   | 8         | 4.44                 | 18.28               |
|        |      |                     | 52T   | 40        | 4.44                 | 18.13               |
|        |      |                     | 106T  | 54*       | 4.49                 | 4.49                |
|        |      |                     | 242T  | 61*       | 4.44                 | 4.39                |
|        |      |                     | SU    | -*        | 4.39                 | 4.39                |
|        |      | 5 745               | 26T   | 0         | 2.10                 | 18.23               |
|        |      | 5 785               | 26T   | 0         | 2.10                 | 18.18               |
|        |      | 5 825               | 26T   | 0         | 2.10                 | 18.18               |
|        |      | Minimum Bandwidth   |       |           | 2.10                 | 4.39                |
|        |      | Minimum Limit (MHz) |       |           | 0.5                  | -                   |

**[DC 12 V]**

| Band   | Mode | Frequency (MHz)     | Tones | RU offset | 6 dB bandwidth (MHz) | 99% bandwidth (MHz) |
|--------|------|---------------------|-------|-----------|----------------------|---------------------|
| UNII-3 | HE20 | Straddle 5 720      | 26T   | 8         | 4.44                 | 18.28               |
|        |      |                     | 52T   | 40        | 4.44                 | 18.13               |
|        |      |                     | 106T  | 54*       | 4.49                 | 4.49                |
|        |      |                     | 242T  | 61*       | 4.44                 | 4.39                |
|        |      |                     | SU    | -*        | 4.39                 | 4.39                |
|        |      | 5 745               | 26T   | 0         | 2.10                 | 18.23               |
|        |      | 5 785               | 26T   | 0         | 2.10                 | 18.23               |
|        |      | 5 825               | 26T   | 0         | 2.10                 | 18.18               |
|        |      | Minimum Bandwidth   |       |           | 2.10                 | 4.39                |
|        |      | Minimum Limit (MHz) |       |           | 0.5                  | -                   |

## 7.5. Frequency stability

### Test setup



### Limit

According to §15.407(g),

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

According to RSS-GEN(6.11),

For licence-exempt devices, the following conditions apply:

- (a) at the temperatures of -20°C (-4°F), +20°C (+68°F) and +50°C (+122°F), and at the manufacturer's rated supply voltage
- (b) at the temperature of +20°C (+68°F) and at  $\pm 15\%$  of the manufacturer's rated supply voltage

If the frequency stability limits are only met within a temperature range that is smaller than the range specified in (a) for licensed or licence-exempt devices, the frequency stability requirement will be deemed to be met if the transmitter is automatically prevented from operating outside this smaller temperature range and if the published operating characteristics for the equipment are revised to reflect this restricted temperature range.

If the device contains both licence and licence-exempt transmitter modules, the device's frequency stability shall be measured under the most stringent condition specified in the applicable RSS of the transmitter module.

In addition, if an unmodulated carrier is not available, the method used to measure frequency stability shall be described in the test report.

According to RSS-GEN(8.11),

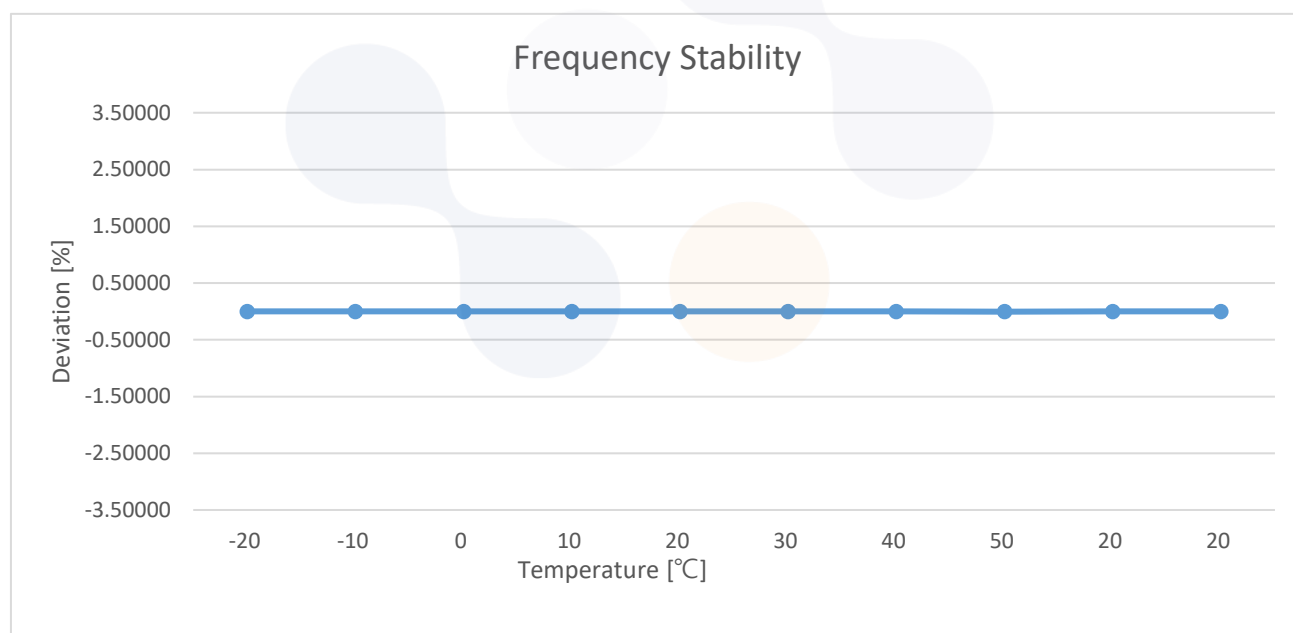
If the frequency stability of the licence-exempt radio apparatus is not specified in the applicable RSS, the fundamental emissions of the radio apparatus should be kept within at least the central 80% of its permitted operating frequency band in order to minimize the possibility of out-of-band operation. In addition, its occupied bandwidth shall be entirely outside the restricted bands and the prohibited TV bands of 54-72 MHz, 76-88 MHz, 174-216 MHz, and 470-602 MHz, unless otherwise indicated.

### Test procedure

ANSI C63.10-2013 - Section 6.8.1

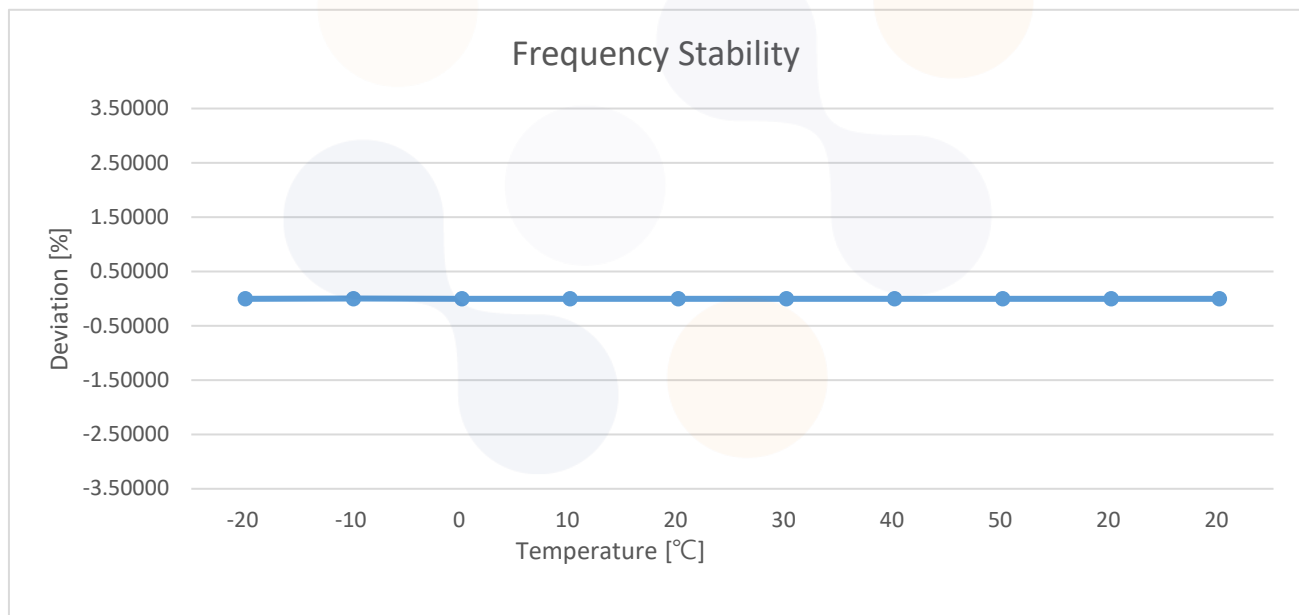
**Test results****[DC 5 V]**Test band : UNII-1Frequency (Hz) : 5 180 000 000

| Voltage (%) | Power (V) | Temp. (°C) | Frequency (Hz) | Frequency error (Hz) | Deviation |           |
|-------------|-----------|------------|----------------|----------------------|-----------|-----------|
|             |           |            |                |                      | (ppm)     | (%)       |
| 100%        | 5.00      | -20        | 5 180 004 800  | 4 800                | 0.93      | 0.000 09  |
|             |           | -10        | 5 180 012 190  | 12 190               | 2.35      | 0.000 24  |
|             |           | 0          | 5 179 998 600  | -1 400               | -0.27     | -0.000 03 |
|             |           | +10        | 5 179 986 610  | -13 390              | -2.58     | -0.000 26 |
|             |           | +20        | 5 179 975 820  | -24 180              | -4.67     | -0.000 47 |
|             |           | +30        | 5 179 958 840  | -41 160              | -7.95     | -0.000 80 |
|             |           | +40        | 5 179 956 040  | -43 960              | -8.49     | -0.000 85 |
|             |           | +50        | 5 179 947 850  | -52 150              | -10.07    | -0.001 01 |
| 85%         | 4.25      | +20        | 5 179 973 230  | -26 770              | -5.17     | -0.000 52 |
| 115%        | 5.75      | +20        | 5 179 971 630  | -28 370              | -5.48     | -0.000 55 |



Test band : UNII-2AFrequency (Hz) : 5 260 000 000

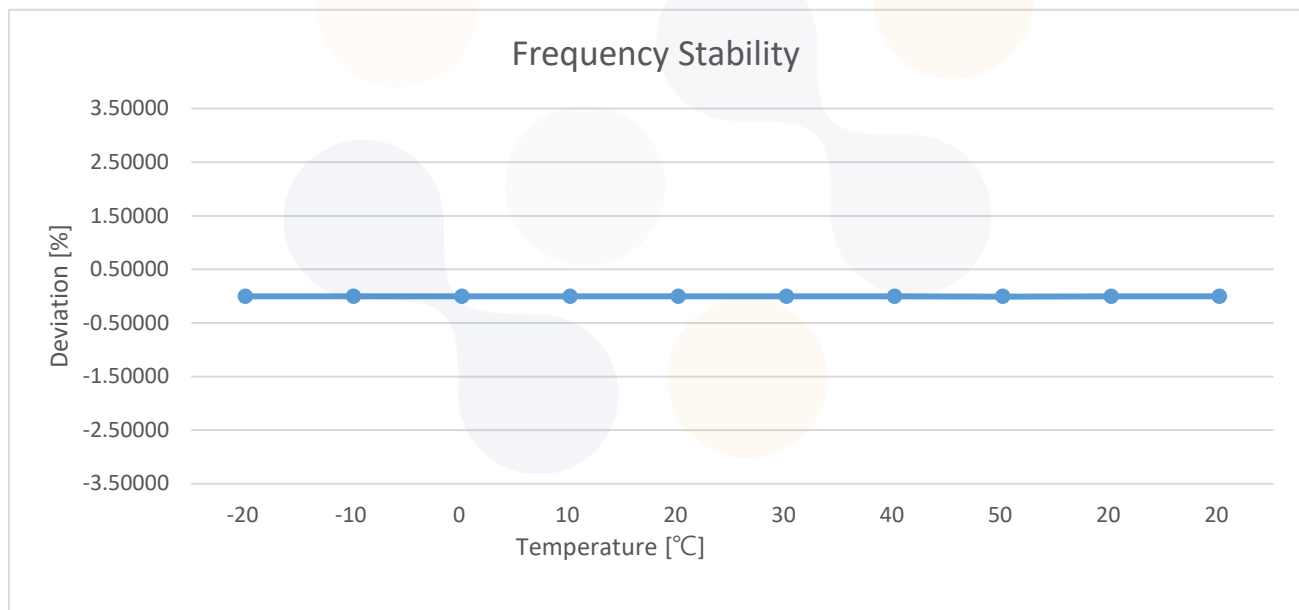
| Voltage (%) | Power (V) | Temp. (°C) | Frequency (Hz) | Frequency error (Hz) | Deviation |           |
|-------------|-----------|------------|----------------|----------------------|-----------|-----------|
|             |           |            |                |                      | (ppm)     | (%)       |
| 100%        | 5.00      | -20        | 5 260 009 790  | 9 790                | 1.86      | 0.000 19  |
|             |           | -10        | 5 260 011 590  | 11 590               | 2.20      | 0.000 22  |
|             |           | 0          | 5 260 008 590  | 8 590                | 1.63      | 0.000 16  |
|             |           | +10        | 5 259 983 020  | -16 980              | -3.23     | -0.000 32 |
|             |           | +20        | 5 259 973 830  | -26 170              | -4.98     | -0.000 50 |
|             |           | +30        | 5 259 955 240  | -44 760              | -8.51     | -0.000 85 |
|             |           | +40        | 5 259 949 450  | -50 550              | -9.61     | -0.000 96 |
|             |           | +50        | 5 259 945 250  | -54 750              | -10.41    | -0.001 04 |
| 85%         | 4.25      | +20        | 5 259 970 830  | -29 170              | -5.55     | -0.000 56 |
| 115%        | 5.75      | +20        | 5 259 969 830  | -30 170              | -5.74     | -0.000 57 |



Test band : UNII-2C

Frequency (Hz) : 5 500 000 000

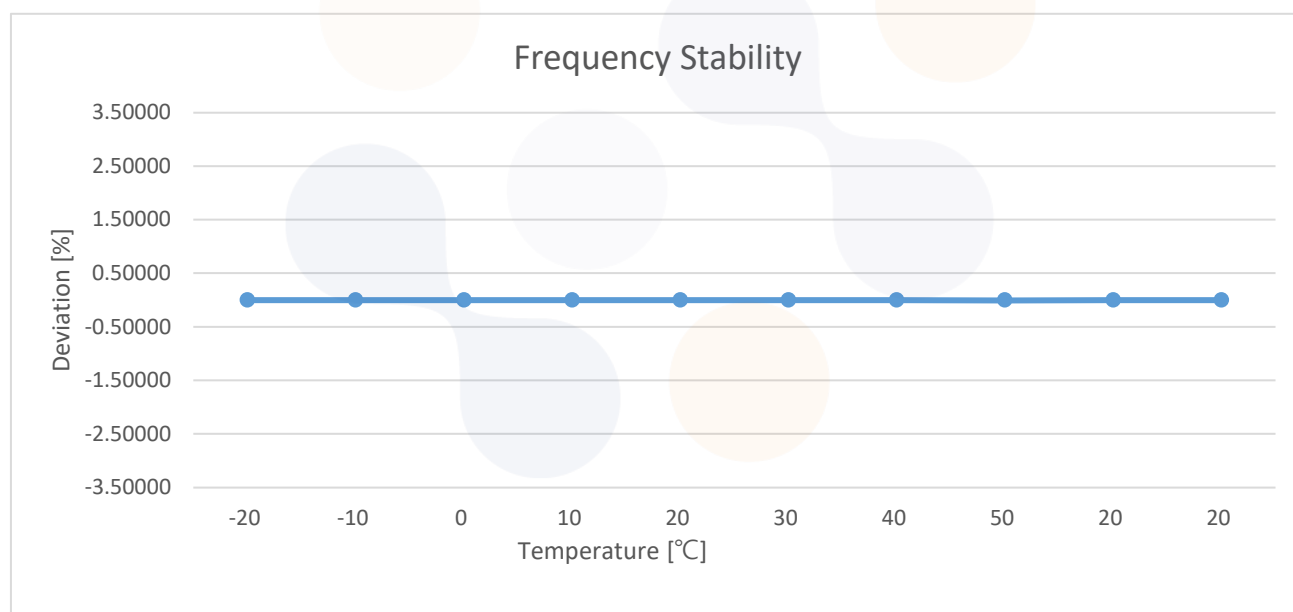
| Voltage (%) | Power (V) | Temp. (°C) | Frequency (Hz) | Frequency error (Hz) | Deviation |           |
|-------------|-----------|------------|----------------|----------------------|-----------|-----------|
|             |           |            |                |                      | (ppm)     | (%)       |
| 100%        | 5.00      | -20        | 5 500 015 380  | 15 380               | 2.80      | 0.000 28  |
|             |           | -10        | 5 500 012 590  | 12 590               | 2.29      | 0.000 23  |
|             |           | 0          | 5 500 006 790  | 6 790                | 1.23      | 0.000 12  |
|             |           | +10        | 5 499 979 620  | -20 380              | -3.71     | -0.000 37 |
|             |           | +20        | 5 499 970 430  | -29 570              | -5.38     | -0.000 54 |
|             |           | +30        | 5 499 952 650  | -47 350              | -8.61     | -0.000 86 |
|             |           | +40        | 5 499 947 650  | -52 350              | -9.52     | -0.000 95 |
|             |           | +50        | 5 499 942 860  | -57 140              | -10.39    | -0.001 04 |
| 85%         | 4.25      | +20        | 5 499 968 230  | -31 770              | -5.78     | -0.000 58 |
| 115%        | 5.75      | +20        | 5 499 967 230  | -32 770              | -5.96     | -0.000 60 |



Test band : UNII-3

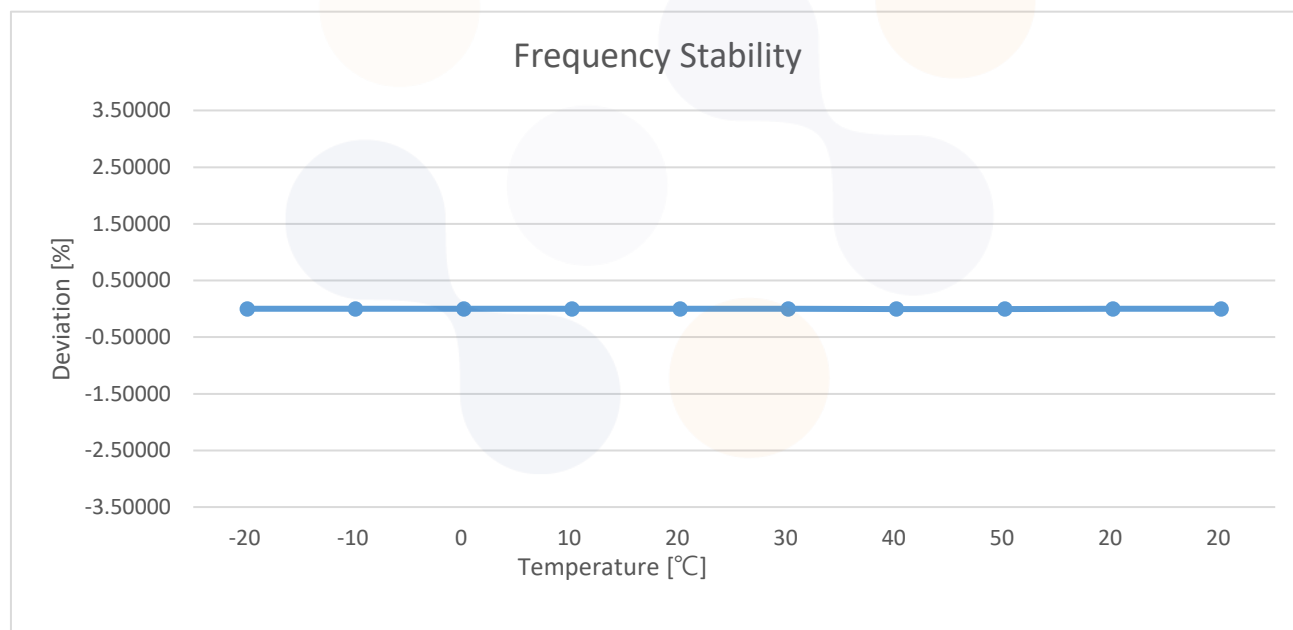
Frequency (Hz) : 5 745 000 000

| Voltage (%) | Power (V) | Temp. (°C) | Frequency (Hz) | Frequency error (Hz) | Deviation |           |
|-------------|-----------|------------|----------------|----------------------|-----------|-----------|
|             |           |            |                |                      | (ppm)     | (%)       |
| 100%        | 5.00      | -20        | 5 745 014 590  | 14 590               | 2.54      | 0.000 25  |
|             |           | -10        | 5 745 012 190  | 12 190               | 2.12      | 0.000 21  |
|             |           | 0          | 5 745 003 600  | 3 600                | 0.63      | 0.000 06  |
|             |           | +10        | 5 744 976 020  | -23 980              | -4.17     | -0.000 42 |
|             |           | +20        | 5 744 969 230  | -30 770              | -5.36     | -0.000 54 |
|             |           | +30        | 5 744 948 250  | -51 750              | -9.01     | -0.000 90 |
|             |           | +40        | 5 744 944 660  | -55 340              | -9.63     | -0.000 96 |
|             |           | +50        | 5 744 940 260  | -59 740              | -10.40    | -0.001 04 |
| 85%         | 4.25      | +20        | 5 744 967 030  | -32 970              | -5.74     | -0.000 57 |
| 115%        | 5.75      | +20        | 5 744 966 030  | -33 970              | -5.91     | -0.000 59 |



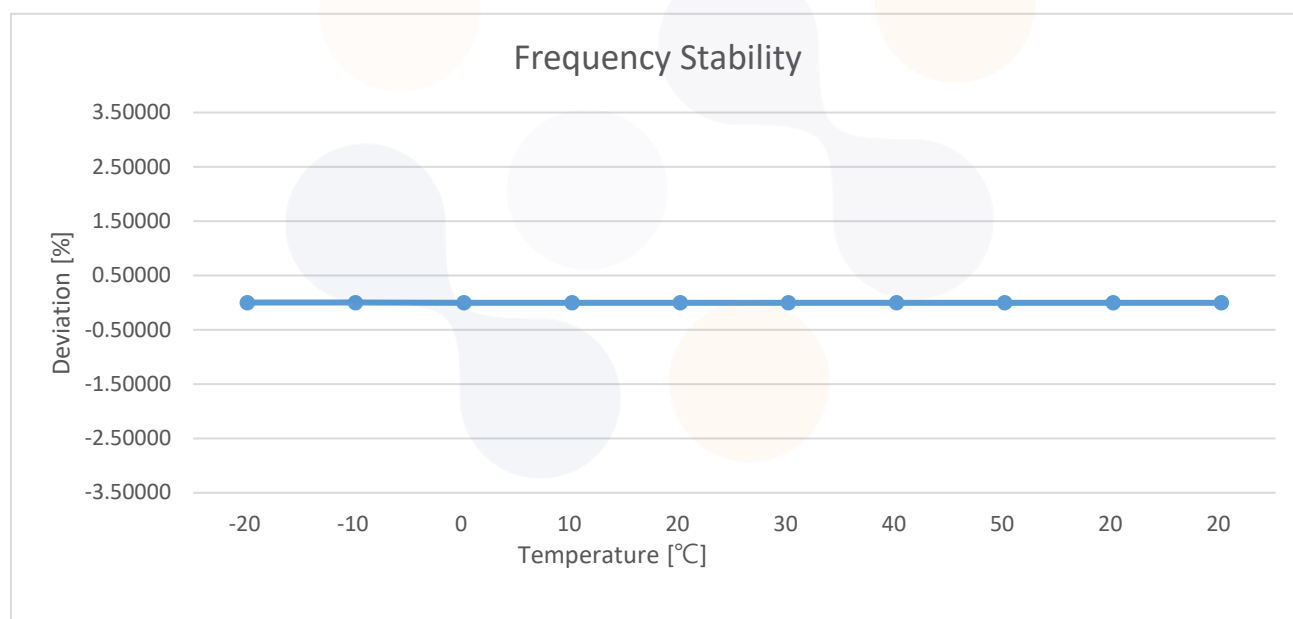
**[DC 12 V]**Test band : UNII-1Frequency (Hz) : 5 180 000 000

| Voltage (%) | Power (V) | Temp. (°C) | Frequency (Hz) | Frequency error (Hz) | Deviation |           |
|-------------|-----------|------------|----------------|----------------------|-----------|-----------|
|             |           |            |                |                      | (ppm)     | (%)       |
| 100%        | 12.00     | -20        | 5 180 007 990  | 7 990                | 1.54      | 0.000 15  |
|             |           | -10        | 5 180 011 990  | 11 990               | 2.31      | 0.000 23  |
|             |           | 0          | 5 180 008 390  | 8 390                | 1.62      | 0.000 16  |
|             |           | +10        | 5 179 994 610  | -5 390               | -1.04     | -0.000 10 |
|             |           | +20        | 5 179 985 410  | -14 590              | -2.82     | -0.000 28 |
|             |           | +30        | 5 179 966 430  | -33 570              | -6.48     | -0.000 65 |
|             |           | +40        | 5 179 951 250  | -48 750              | -9.41     | -0.000 94 |
|             |           | +50        | 5 179 946 850  | -53 150              | -10.26    | -0.001 03 |
| 85%         | 10.20     | +20        | 5 179 982 420  | -17 580              | -3.39     | -0.000 34 |
| 115%        | 13.80     | +20        | 5 179 980 420  | -19 580              | -3.78     | -0.000 38 |



Test band : UNII-2AFrequency (Hz) : 5 260 000 000

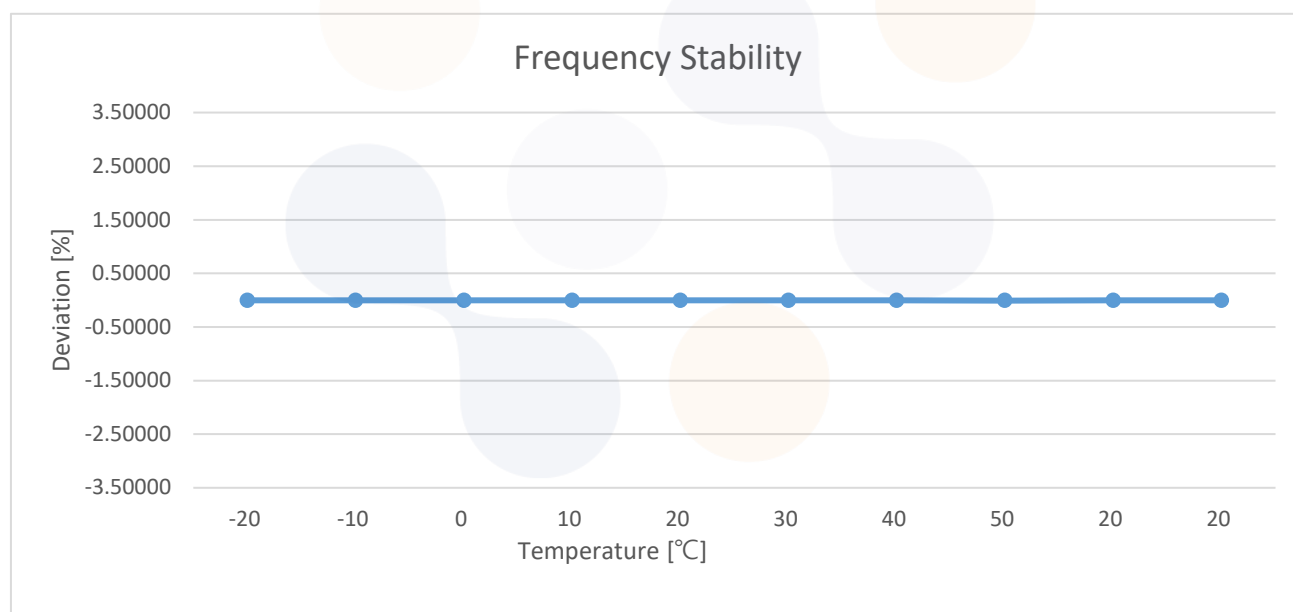
| Voltage (%) | Power (V) | Temp. (°C) | Frequency (Hz) | Frequency error (Hz) | Deviation |           |
|-------------|-----------|------------|----------------|----------------------|-----------|-----------|
|             |           |            |                |                      | (ppm)     | (%)       |
| 100%        | 12.00     | -20        | 5 260 010 990  | 10 990               | 2.09      | 0.000 21  |
|             |           | -10        | 5 260 011 590  | 11 590               | 2.20      | 0.000 22  |
|             |           | 0          | 5 260 003 400  | 3 400                | 0.65      | 0.000 07  |
|             |           | +10        | 5 259 992 210  | -7 790               | -1.48     | -0.000 15 |
|             |           | +20        | 5 259 978 220  | -21 780              | -4.14     | -0.000 41 |
|             |           | +30        | 5 259 959 640  | -40 360              | -7.67     | -0.000 77 |
|             |           | +40        | 5 259 951 650  | -48 350              | -9.19     | -0.000 92 |
|             |           | +50        | 5 259 945 250  | -54 750              | -10.41    | -0.001 04 |
| 85%         | 10.20     | +20        | 5 259 977 020  | -22 980              | -4.37     | -0.000 44 |
| 115%        | 13.80     | +20        | 5 259 975 620  | -24 380              | -4.64     | -0.000 46 |



Test band : UNII-2C

Frequency (Hz) : 5 500 000 000

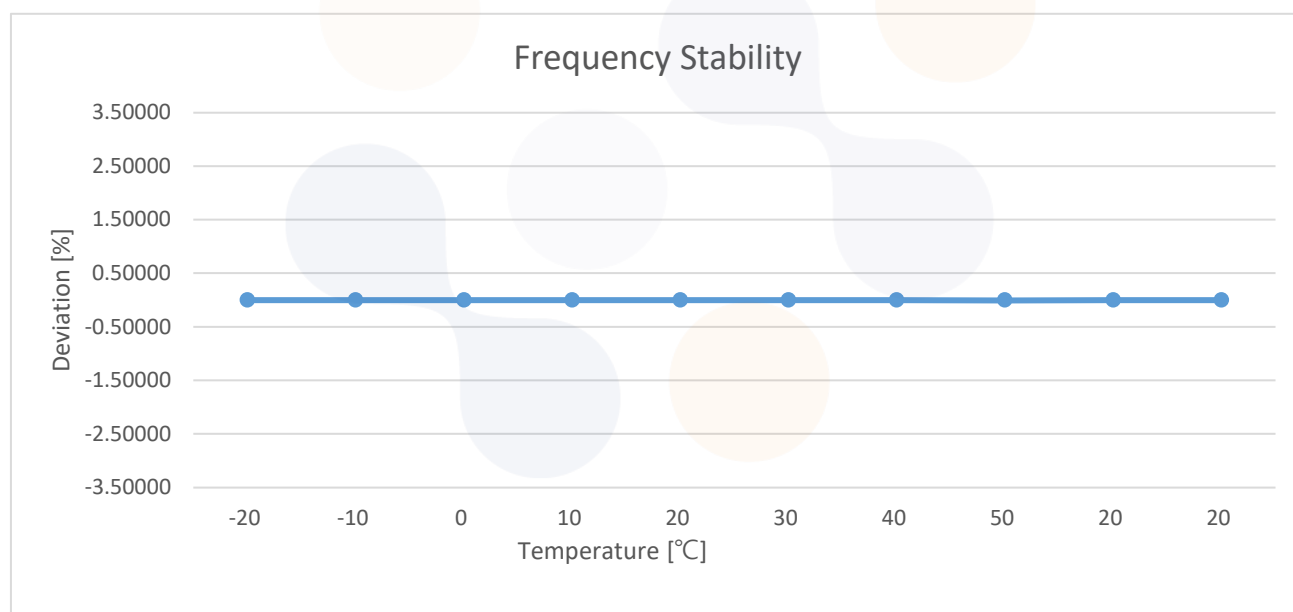
| Voltage (%) | Power (V) | Temp. (°C) | Frequency (Hz) | Frequency error (Hz) | Deviation |           |
|-------------|-----------|------------|----------------|----------------------|-----------|-----------|
|             |           |            |                |                      | (ppm)     | (%)       |
| 100%        | 12.00     | -20        | 5 500 014 190  | 14 190               | 2.58      | 0.000 26  |
|             |           | -10        | 5 500 012 590  | 12 590               | 2.29      | 0.000 23  |
|             |           | 0          | 5 500 002 800  | 2 800                | 0.51      | 0.000 05  |
|             |           | +10        | 5 499 988 010  | -11 990              | -2.18     | -0.000 22 |
|             |           | +20        | 5 499 971 430  | -28 570              | -5.19     | -0.000 52 |
|             |           | +30        | 5 499 955 240  | -44 760              | -8.14     | -0.000 81 |
|             |           | +40        | 5 499 948 050  | -51 950              | -9.45     | -0.000 95 |
|             |           | +50        | 5 499 944 060  | -55 940              | -10.17    | -0.001 02 |
| 85%         | 10.20     | +20        | 5 499 970 430  | -29 570              | -5.38     | -0.000 54 |
| 115%        | 13.80     | +20        | 5 499 969 230  | -30 770              | -5.59     | -0.000 56 |



Test band : UNII-3

Frequency (Hz) : 5 745 000 000

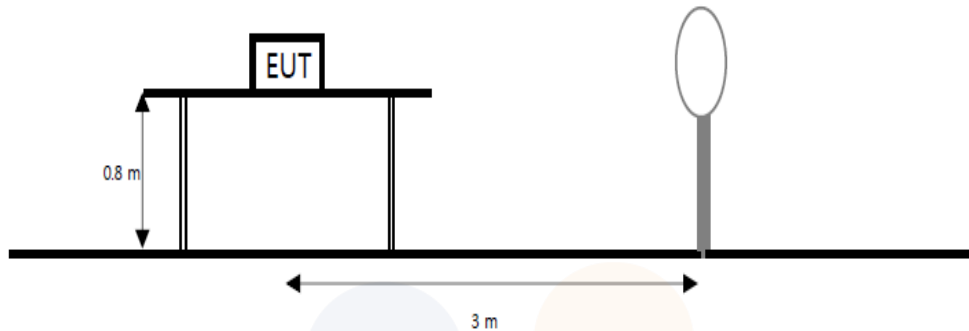
| Voltage (%) | Power (V) | Temp. (°C) | Frequency (Hz) | Frequency error (Hz) | Deviation |           |
|-------------|-----------|------------|----------------|----------------------|-----------|-----------|
|             |           |            |                |                      | (ppm)     | (%)       |
| 100%        | 12.00     | -20        | 5 745 014 990  | 14 990               | 2.61      | 0.000 26  |
|             |           | -10        | 5 745 012 790  | 12 790               | 2.23      | 0.000 22  |
|             |           | 0          | 5 745 002 400  | 2 400                | 0.42      | 0.000 04  |
|             |           | +10        | 5 744 982 420  | -17 580              | -3.06     | -0.000 31 |
|             |           | +20        | 5 744 966 830  | -33 170              | -5.77     | -0.000 58 |
|             |           | +30        | 5 744 953 050  | -46 950              | -8.17     | -0.000 82 |
|             |           | +40        | 5 744 945 050  | -54 950              | -9.56     | -0.000 96 |
|             |           | +50        | 5 744 940 660  | -59 340              | -10.33    | -0.001 03 |
| 85%         | 10.20     | +20        | 5 744 966 230  | -33 770              | -5.88     | -0.000 59 |
| 115%        | 13.80     | +20        | 5 744 965 830  | -34 170              | -5.95     | -0.000 60 |



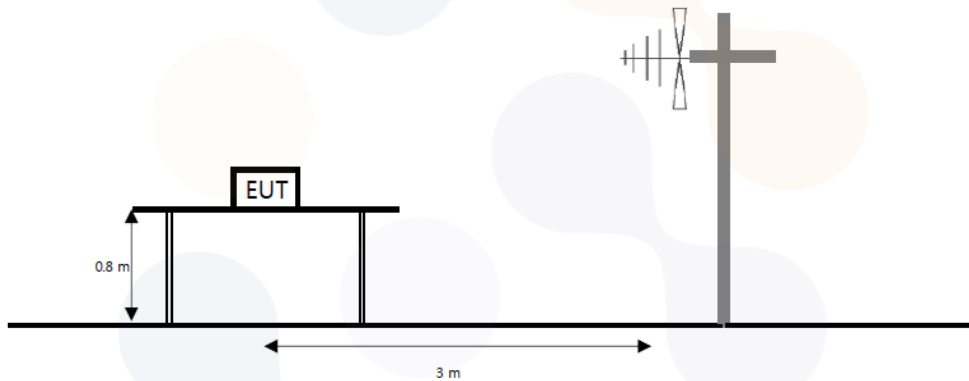
## 7.6. Spurious Emission, Band Edge and Restricted bands

### Test setup

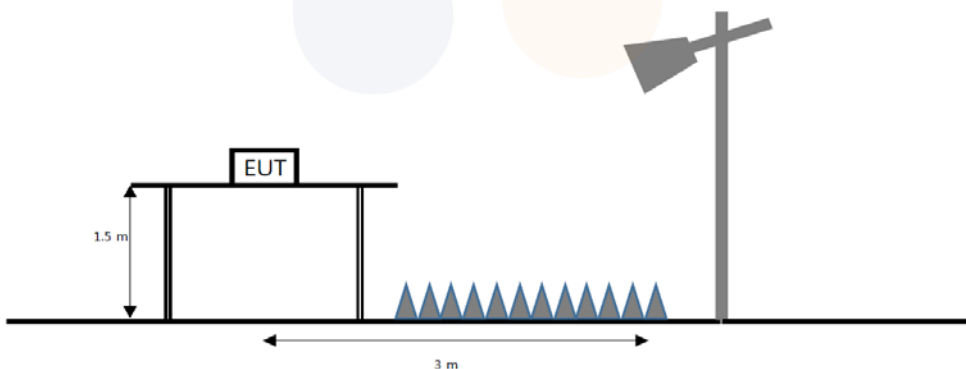
The diagram below shows the test setup that is utilized to make the measurements for emission from 9 kHz to 30 MHz Emissions



The diagram below shows the test setup that is utilized to make the measurements for emission from 30 MHz to 1 GHz emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission from 1 GHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz emissions, whichever is lower.



## Limit

### FCC

According to section 15.209(a) except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

| Frequency (MHz) | Field strength ( $\mu\text{V}/\text{m}$ ) | Measurement distance (m) |
|-----------------|-------------------------------------------|--------------------------|
| 0.009 - 0.490   | 2 400/F(kHz)                              | 300                      |
| 0.490 - 1.705   | 24 000/F(kHz)                             | 30                       |
| 1.705 - 30      | 30                                        | 30                       |
| 30 - 88         | 100**                                     | 3                        |
| 88 - 216        | 150**                                     | 3                        |
| 216 - 960       | 200**                                     | 3                        |
| Above 960       | 500                                       | 3                        |

\*\*Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54–72 MHz, 76–88 MHz, 174–216 MHz or 470–806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., Section 15.231 and 15.241.

According to section 15.205(a) and (b) only spurious emissions are permitted in any of the frequency bands listed below:

| MHz                   | MHz                   | MHz               | GHz           |
|-----------------------|-----------------------|-------------------|---------------|
| 0.009 - 0.110         | 16.42 - 16.423        | 399.9 - 410       | 4.5 - 5.15    |
| 0.495 - 0.505         | 16.694 75 - 16.695 25 | 608 - 614         | 5.35 - 5.46   |
| 2.173 5 - 2.190 5     | 16.804 25 - 16.804 75 | 960 - 1 240       | 7.25 - 7.75   |
| 4.125 - 4.128         | 25.5 - 25.67          | 1 300 - 1 427     | 8.025 - 8.5   |
| 4.177 25 - 4.177 75   | 37.5 - 38.25          | 1 435 - 1 626.5   | 9.0 - 9.2     |
| 4.207 25 - 4.207 75   | 73 - 74.6             | 1 645.5 - 1 646.5 | 9.3 - 9.5     |
| 6.215 - 6.218         | 74.8 - 75.2           | 1 660 - 1 710     | 10.6 - 12.7   |
| 6.267 75 - 6.268 25   | 108 - 121.94          | 1 718.8 - 1 722.2 | 13.25 - 13.4  |
| 6.311 75 - 6.312 25   | 123 - 138             | 2 200 - 2 300     | 14.47 - 14.5  |
| 8.291 - 8.294         | 149.9 - 150.05        | 2 310 - 2 390     | 15.35 - 16.2  |
| 8.362 - 8.366         | 156.524 75 - 156.525  | 2 483.5 - 2 500   | 17.7 - 21.4   |
| 8.376 25 - 8.386 75   | 25                    | 2 690 - 2 900     | 22.01 - 23.12 |
| 8.414 25 - 8.414 75   | 156.7 - 156.9         | 3 260 - 3 267     | 23.6 - 24.0   |
| 12.29 - 12.293        | 162.012 5 - 167.17    | 3 332 - 3 339     | 31.2 - 31.8   |
| 12.519 75 - 12.520 25 | 167.72 - 173.2        | 3 345.8 - 3 358   | 36.43 - 36.5  |
| 12.576 75 - 12.577 25 | 240 - 285             | 3 600 - 4 400     | Above 38.6    |
| 13.36 - 13.41         | 322 - 335.4           |                   |               |

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in section 15.209. At frequencies equal to or less than 1 000 MHz, compliance with the limits in section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1 000 MHz, compliance with the emission limits in section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in section 15.35 apply to these measurements.

According to section 15.407(b), undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz

For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

**IC**

According to RSS-247(5.5), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

According to RSS-Gen(8.9), Except where otherwise indicated in the applicable RSS, radiated emissions shall comply with the field strength limits shown in table 5 and table 6. Additionally, the level of any transmitter unwanted emission shall not exceed the level of the transmitter's fundamental emission.

**Table 5- General field strength limits at frequencies above 30 MHz**

| Frequency(MHz) | Field strength<br>( $\mu\text{V}/\text{m}$ at 3 m) |
|----------------|----------------------------------------------------|
| 30 to 88       | 100                                                |
| 88 to 216      | 150                                                |
| 216 to 960     | 200                                                |
| Above 960      | 500                                                |

**Table 6- General field strength limits at frequencies below 30 MHz**

| Frequency                 | Magnetic field strength (H-Field)<br>( $\mu\text{A}/\text{m}$ ) | Measurement<br>distance(m) |
|---------------------------|-----------------------------------------------------------------|----------------------------|
| 9 – 490 kHz <sup>1)</sup> | 6.37/F (F in kHz)                                               | 300                        |
| 490 – 1705 kHz            | 63.7/F (F in kHz)                                               | 30                         |
| 1.705 - 30 MHz            | 0.08                                                            | 30                         |

According to RSS-Gen(8.10), Restricted frequency bands, identified in table 7, are designated primarily for safety-of-life services (distress calling and certain aeronautical activities), certain satellite downlinks, radio astronomy and some government uses. Except where otherwise indicated, the following conditions related to the restricted frequency bands apply:

- The transmit frequency, including fundamental components of modulation, of licence-exempt radio apparatus shall not fall within the restricted frequency bands listed in table 7 except for apparatus compliant with RSS-287, Emergency Position Indicating Radio Beacons (EPIRB), Emergency Locator Transmitters (ELT), Personal Locator Beacons (PLB), and Maritime Survivor Locator Devices (MSLD).
- Unwanted emissions that fall into restricted frequency bands listed in table 7 shall comply with the limits specified in table 5 and table 6.
- Unwanted emissions that do not fall within the restricted frequency bands listed in table 7 shall comply either with the limits specified in the applicable RSS or with those specified in table 5 and table 6.

Table 7- Restricted frequency bands\*

| MHz                 | MHz                   | GHz           |
|---------------------|-----------------------|---------------|
| 0.090 - 0.110       | 149.9 - 150.05        | 9.0 - 9.2     |
| 0.495 - 0.505       | 156.52475 - 156.52525 | 9.3 - 9.5     |
| 2.1735 - 2.1905     | 156.7 - 156.9         | 10.6 - 12.7   |
| 3.020 - 3.026       | 162.0125 - 167.17     | 13.25 - 13.4  |
| 4.125 - 4.128       | 167.72 - 173.2        | 14.47 - 14.5  |
| 4.17725 - 4.17775   | 240 - 285             | 15.35 - 16.2  |
| 4.20725 - 4.20775   | 322 - 335.4           | 17.7 - 21.4   |
| 5.677 - 5.683       | 399.9 - 410           | 22.01 - 23.12 |
| 6.215 - 6.218       | 608 - 614             | 23.6 - 24.0   |
| 6.26775 - 6.26825   | 960 - 1427            | 31.2 - 31.8   |
| 6.31175 - 6.31225   | 1435 - 1626.5         | 36.43 - 36.5  |
| 8.291 - 8.294       | 1645.5 - 1646.5       | Above 38.6    |
| 8.362 - 8.366       | 1660 - 1710           |               |
| 8.37625 - 8.38675   | 1718.8 - 1722.2       |               |
| 8.41425 - 8.41475   | 2200 - 2300           |               |
| 12.29 - 12.293      | 2310 - 2390           |               |
| 12.51975 - 12.52025 | 2483.5 - 2500         |               |
| 12.57675 - 12.57725 | 2655 - 2900           |               |
| 13.36 - 13.41       | 3260 - 3267           |               |
| 16.42 - 16.423      | 3332 - 3339           |               |
| 16.69475 - 16.69525 | 3345.8 - 3358         |               |
| 16.80425 - 16.80475 | 3500 - 4400           |               |
| 25.5 - 25.67        | 4500 - 5150           |               |
| 37.5 - 38.25        | 5350 - 5460           |               |
| 73 - 74.6           | 7250 - 7750           |               |
| 74.8 - 75.2         | 8025 - 8500           |               |
| 108 - 138           | --                    |               |

\* Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

**Test procedure**

ANSI C63.10-2013 Section 12.7.7.2, 12.7.5, 12.7.6  
KDB 789033 D02 v02r01 – Section G

**Test settings****Peak field strength measurements**

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = as specified in table
3. VBW  $\geq$  (3 $\times$ RBW)
4. Detector = peak
5. Sweep time = auto
6. Trace mode = max hold
7. Allow sweeps to continue until the trace stabilizes

Table. RBW as a function of frequency

| Frequency           | RBW                |
|---------------------|--------------------|
| 9 kHz to 150 kHz    | 200 Hz to 300 Hz   |
| 0.15 MHz to 30 MHz  | 9 kHz to 10 kHz    |
| 30 MHz to 1 000 MHz | 100 kHz to 120 kHz |
| > 1 000 MHz         | 1 MHz              |

## Average field strength measurements

### Trace averaging with continuous EUT transmission at full power

If the EUT can be configured or modified to transmit continuously ( $D \geq 98\%$ ), then the average emission levels shall be measured using the following method (with EUT transmitting continuously):

1. RBW = 1 MHz (unless otherwise specified).
2. VBW  $\geq (3 \times \text{RBW})$ .
3. Detector = RMS (power averaging), if  $[\text{span} / (\# \text{ of points in sweep})] \leq (\text{RBW} / 2)$ . Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.
4. Averaging type = power (i.e., rms):
  - 1) As an alternative, the detector and averaging type may be set for linear voltage averaging.
  - 2) Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.
5. Sweep time = auto.
6. Perform a trace average of at least 100 traces.

### Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction

If continuous transmission of the EUT ( $D \geq 98\%$ ) cannot be achieved and the duty cycle is constant (duty cycle variations are less than  $\pm 2\%$ ), then the following procedure shall be used:

1. The EUT shall be configured to operate at the maximum achievable duty cycle.
2. Measure the duty cycle D of the transmitter output signal as described in 11.6.
3. RBW = 1 MHz (unless otherwise specified).
4. VBW  $\geq [3 \times \text{RBW}]$ .
5. Detector = RMS (power averaging), if  $[\text{span} / (\# \text{ of points in sweep})] \leq (\text{RBW} / 2)$ . Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.
6. Averaging type = power (i.e., rms):
  - 1) As an alternative, the detector and averaging type may be set for linear voltage averaging.
  - 2) Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.
7. Sweep time = auto.
8. Perform a trace average of at least 100 traces.
9. A correction factor shall be added to the measurement results prior to comparing with the emission limit to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:
  - 1) If power averaging (rms) mode was used in step f), then the applicable correction factor is  $[10 \log (1 / D)]$ , where D is the duty cycle.
  - 2) If linear voltage averaging mode was used in step f), then the applicable correction factor is  $[20 \log (1 / D)]$ , where D is the duty cycle.
  - 3) If a specific emission is demonstrated to be continuous ( $D \geq 98\%$ ) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission.

## Band edge measurements

### Integration Method

For maximum emissions measurements, follow the procedures described in II.G.5., "Procedures for unwanted maximum Emissions Measurements above 1000 MHz. Except for the following changes:

1. Set RBW = 100 kHz
2. Set VBW  $\geq 3 \times$  RBW
3. Perform a band-power integration across the 1 MHz bandwidth in which the band edge emission level is to be measured. CAUTION: you must ensure that the spectrum analyzer or EMI receiver is set for peak detection and max-hold for this measurement.

For average emissions measurements, follow the procedures described in II.G.6., "Procedures for average unwanted Emissions Measurements above 1000 MHz. Except for the following changes:

1. Set RBW = 100 kHz
2. Set VBW  $\geq 3 \times$  RBW
3. Perform a band-power integration across the 1 MHz bandwidth in which the band edge emission level is to be measured.

### Notes:

1.  $f < 30$  MHz, extrapolation factor of 40 dB/decade of distance.  $F_d = 40\log(D_m/D_s)$

$f \geq 30$  MHz, extrapolation factor of 20 dB/decade of distance.  $F_d = 20\log(D_m/D_s)$

Where:

$F_d$  = Distance factor in dB

$D_m$  = Measurement distance in meters

$D_s$  = Specification distance in meters

2. Factors(dB) = Antenna factor(dB/m) + Cable loss(dB) + or Amp. gain(dB) + or  $F_d$ (dB)
3. The worst-case emissions are reported however emissions whose levels were not within 20 dB of respective limits were not reported.
4. Average test would be performed if the peak result were greater than the average limit.
5. <sup>1)</sup> means restricted band.
6. Above 1 GHz the worst results between two antenna polarizations (H and V) were documented in the test report.
7. Below 30 MHz frequency range, In order to search for the worst result, all orientations about parallel, perpendicular, and ground-parallel were investigated then reported. when the emission level was higher than 20 dB of the limit, then the following statement shall be made: "No spurious emissions were detected within 20 dB of the limit."
8. For above 1 GHz pre-scan to detect harmonic and spurious emissions, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 kHz for peak measurements.
9. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω. For example, the measurement frequency X kHz resulted in a level of Y dBμV/m, which is equivalent to  $Y - 51.5 = Z$  dBμA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to be 15.209(a) limit.
10. Measurement configuration for 11ax RU allocations
  - 1) For the radiated band-edge test, it was tested at 11ax RU allocations near the band edge.
    - The target power of 20 MHz RU tone is the same or higher than other bandwidth (40/80 MHz), Therefore, it was tested as a representative at 20 MHz bandwidth and additional full tone cases were tested for the remaining bandwidth.
  - 2) The pre-scan was performed for all modes, and then only the RU allocation with actual highest output power considering each bandwidth was reported as a representative.

**Test results (Above 1 000 MHz)****[DC 5 V]****UNII-1 SISO Restricted Band edge (Lowest Channel)****802.11ax HE20 SU mode Lowest Channel (5 180 MHz)**

| Frequency              | Pol.  | Reading  | Ant. Factor | Amp. + Cable | DCF  | Result     | Limit      | Margin |
|------------------------|-------|----------|-------------|--------------|------|------------|------------|--------|
| (MHz)                  | (V/H) | (dB(μV)) | (dB)        | (dB)         | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| <b>Peak data</b>       |       |          |             |              |      |            |            |        |
| 5 149.82 <sup>1)</sup> | H     | 48.95    | 34.22       | -24.13       | -    | 59.04      | 74.00      | 14.96  |
| <b>Average Data</b>    |       |          |             |              |      |            |            |        |
| 5 149.82 <sup>1)</sup> | H     | 33.99    | 34.22       | -24.13       | 0.30 | 44.38      | 54.00      | 9.62   |

**802.11ax HE20 RU mode (26T / RU offset 0) Lowest Channel (5 180 MHz)**

| Frequency              | Pol.  | Reading  | Ant. Factor | Amp.+Cable | DCF  | Result     | Limit      | Margin |
|------------------------|-------|----------|-------------|------------|------|------------|------------|--------|
| (MHz)                  | (V/H) | (dB(μV)) | (dB)        | (dB)       | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| <b>Peak data</b>       |       |          |             |            |      |            |            |        |
| 5 140.12 <sup>1)</sup> | H     | 52.01    | 34.21       | -24.12     | -    | 62.10      | 74.00      | 11.90  |
| <b>Average Data</b>    |       |          |             |            |      |            |            |        |
| 5 140.12 <sup>1)</sup> | H     | 32.49    | 34.21       | -24.12     | 0.22 | 42.80      | 54.00      | 11.20  |

**802.11ax HE20 RU mode (52T / RU offset 37) Lowest Channel (5 180 MHz)**

| Frequency              | Pol.  | Reading  | Ant. Factor | Amp.+Cable | DCF  | Result     | Limit      | Margin |
|------------------------|-------|----------|-------------|------------|------|------------|------------|--------|
| (MHz)                  | (V/H) | (dB(μV)) | (dB)        | (dB)       | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| <b>Peak data</b>       |       |          |             |            |      |            |            |        |
| 5 141.07 <sup>1)</sup> | H     | 55.87    | 34.21       | -24.12     | -    | 65.96      | 74.00      | 8.04   |
| <b>Average Data</b>    |       |          |             |            |      |            |            |        |
| 5 141.07 <sup>1)</sup> | H     | 34.06    | 34.21       | -24.12     | 0.22 | 44.37      | 54.00      | 9.63   |

**802.11ax HE20 RU mode (106T / RU offset 53) Lowest Channel (5 180 MHz)**

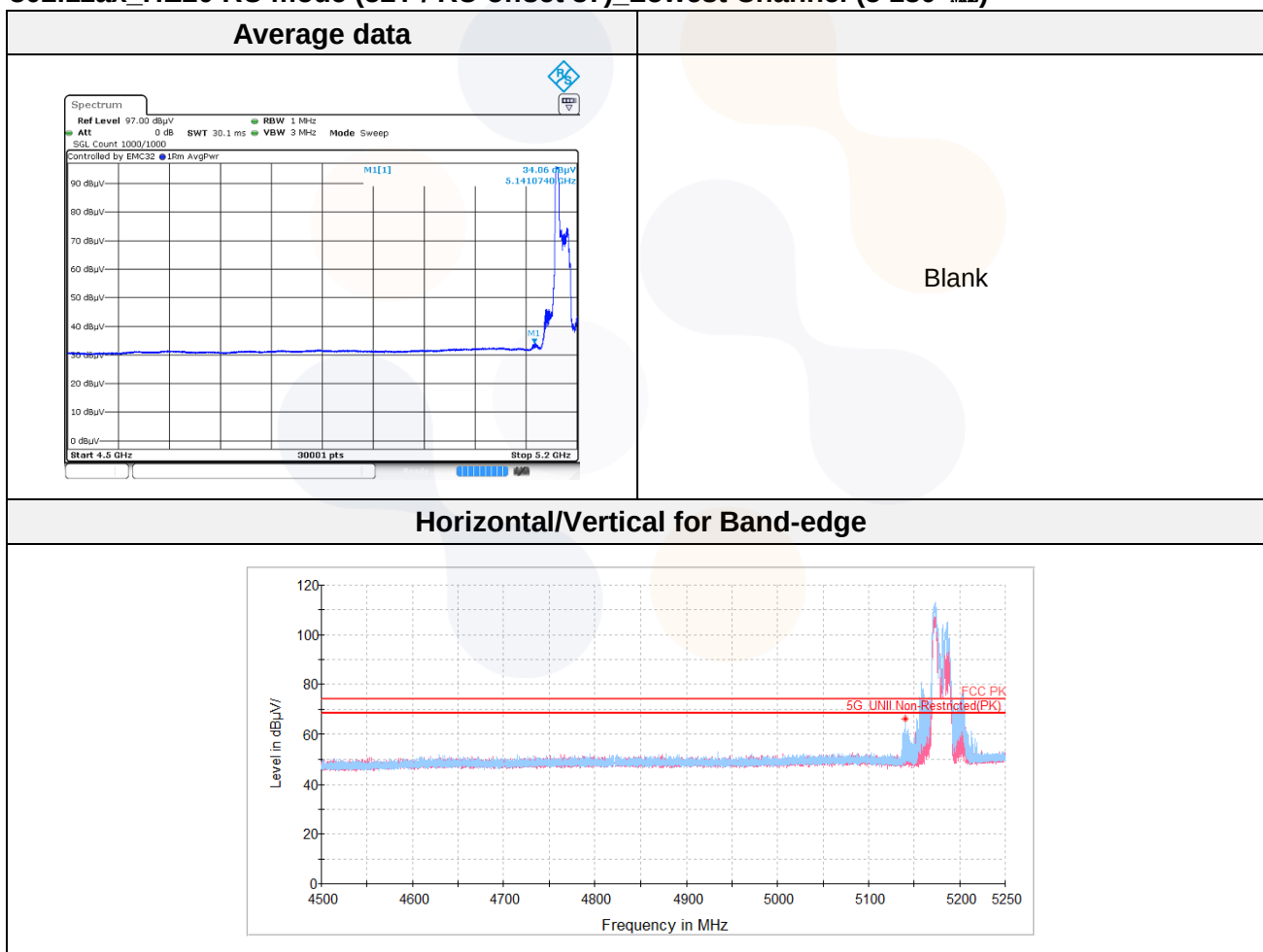
| Frequency              | Pol.  | Reading  | Ant. Factor | Amp.+Cable | DCF  | Result     | Limit      | Margin |
|------------------------|-------|----------|-------------|------------|------|------------|------------|--------|
| (MHz)                  | (V/H) | (dB(μV)) | (dB)        | (dB)       | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| <b>Peak data</b>       |       |          |             |            |      |            |            |        |
| 5 149.82 <sup>1)</sup> | H     | 49.83    | 34.22       | -24.13     | -    | 59.92      | 74.00      | 14.08  |
| <b>Average Data</b>    |       |          |             |            |      |            |            |        |
| 5 149.82 <sup>1)</sup> | H     | 34.03    | 34.22       | -24.13     | 0.22 | 44.34      | 54.00      | 9.66   |

**802.11ax\_HE20 RU mode (242T / RU offset 61)\_Lowest Channel (5 180 MHz)**

| Frequency              | Pol.  | Reading  | Ant. Factor | Amp.+Cable | DCF  | Result     | Limit      | Margin |
|------------------------|-------|----------|-------------|------------|------|------------|------------|--------|
| (MHz)                  | (V/H) | (dB(μV)) | (dB)        | (dB)       | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| <b>Peak data</b>       |       |          |             |            |      |            |            |        |
| 5 149.75 <sup>1)</sup> | H     | 49.06    | 34.22       | -24.13     | -    | 59.15      | 74.00      | 14.85  |
| <b>Average Data</b>    |       |          |             |            |      |            |            |        |
| 5 149.75 <sup>1)</sup> | H     | 34.45    | 34.22       | -24.13     | 0.22 | 44.76      | 54.00      | 9.24   |

**Plot of Band edge**

In order to simplify the report, attached plots were only the lowest margin condition

**802.11ax\_HE20 RU mode (52T / RU offset 37)\_Lowest Channel (5 180 MHz)**

## UNII-2A SISO Restricted Band edge (Highest Channel)

### 802.11ax\_HE20 SU mode\_Highest Channel (5 320 MHz)

| Frequency              | Pol.  | Reading  | Ant. Factor | Amp. + Cable | DCF  | Result     | Limit      | Margin |
|------------------------|-------|----------|-------------|--------------|------|------------|------------|--------|
| (MHz)                  | (V/H) | (dB(μV)) | (dB)        | (dB)         | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| Peak data              |       |          |             |              |      |            |            |        |
| 5 350.00 <sup>1)</sup> | H     | 51.52    | 34.38       | -23.35       | -    | 62.55      | 74.00      | 11.45  |
| Average Data           |       |          |             |              |      |            |            |        |
| 5 350.00 <sup>1)</sup> | H     | 34.56    | 34.38       | -23.35       | 0.30 | 45.89      | 54.00      | 8.11   |

### 802.11ax\_HE20 RU mode (26T / RU offset 8)\_Highest Channel (5 320 MHz)

| Frequency              | Pol.  | Reading  | Ant. Factor | Amp.+Cable | DCF  | Result     | Limit      | Margin |
|------------------------|-------|----------|-------------|------------|------|------------|------------|--------|
| (MHz)                  | (V/H) | (dB(μV)) | (dB)        | (dB)       | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| Peak data              |       |          |             |            |      |            |            |        |
| 5 350.10 <sup>1)</sup> | H     | 54.38    | 34.38       | -23.35     | -    | 65.41      | 74.00      | 8.59   |
| Average Data           |       |          |             |            |      |            |            |        |
| 5 350.10 <sup>1)</sup> | H     | 32.25    | 34.38       | -23.35     | 0.22 | 43.50      | 54.00      | 10.50  |

### 802.11ax\_HE20 RU mode (52T / RU offset 40)\_Highest Channel (5 320 MHz)

| Frequency              | Pol.  | Reading  | Ant. Factor | Amp.+Cable | DCF  | Result     | Limit      | Margin |
|------------------------|-------|----------|-------------|------------|------|------------|------------|--------|
| (MHz)                  | (V/H) | (dB(μV)) | (dB)        | (dB)       | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| Peak data              |       |          |             |            |      |            |            |        |
| 5 353.20 <sup>1)</sup> | H     | 49.22    | 34.38       | -23.38     | -    | 60.22      | 74.00      | 13.78  |
| Average Data           |       |          |             |            |      |            |            |        |
| 5 353.20 <sup>1)</sup> | H     | 32.93    | 34.38       | -23.38     | 0.22 | 44.15      | 54.00      | 9.85   |

### 802.11ax\_HE20 RU mode (106T / RU offset 54)\_Highest Channel (5 320 MHz)

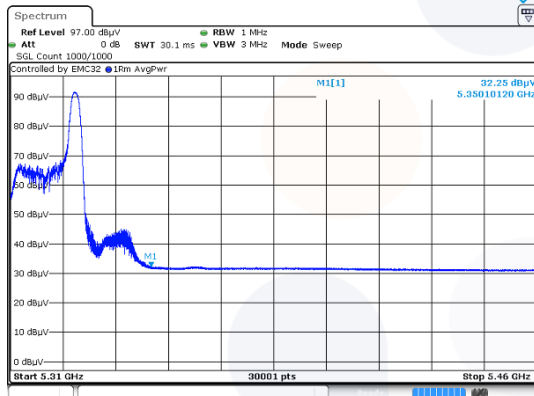
| Frequency              | Pol.  | Reading  | Ant. Factor | Amp.+Cable | DCF  | Result     | Limit      | Margin |
|------------------------|-------|----------|-------------|------------|------|------------|------------|--------|
| (MHz)                  | (V/H) | (dB(μV)) | (dB)        | (dB)       | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| Peak data              |       |          |             |            |      |            |            |        |
| 5 350.58 <sup>1)</sup> | H     | 44.19    | 34.38       | -23.36     | -    | 55.21      | 74.00      | 18.79  |
| Average Data           |       |          |             |            |      |            |            |        |
| 5 350.58 <sup>1)</sup> | H     | 33.41    | 34.38       | -23.36     | 0.22 | 44.65      | 54.00      | 9.35   |

**802.11ax\_HE20 RU mode (242T / RU offset 61)\_Highest Channel (5 320 MHz)**

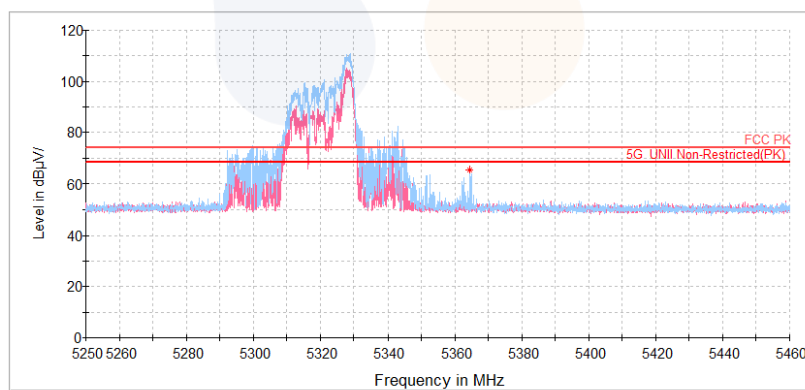
| Frequency              | Pol.  | Reading  | Ant. Factor | Amp.+Cable | DCF  | Result     | Limit      | Margin |
|------------------------|-------|----------|-------------|------------|------|------------|------------|--------|
| (MHz)                  | (V/H) | (dB(μV)) | (dB)        | (dB)       | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| <b>Peak data</b>       |       |          |             |            |      |            |            |        |
| 5 350.31 <sup>1)</sup> | H     | 48.75    | 34.38       | -23.36     | -    | 59.77      | 74.00      | 14.23  |
| <b>Average Data</b>    |       |          |             |            |      |            |            |        |
| 5 350.31 <sup>1)</sup> | H     | 34.83    | 34.38       | -23.36     | 0.22 | 46.07      | 54.00      | 7.93   |

**Plot of Band edge**

In order to simplify the report, attached plots were only the lowest margin condition

**802.11ax\_HE20 RU mode (26T / RU offset 8)\_Highest Channel (5 320 MHz)****Average data**

Blank

**Horizontal/Vertical for Band-edge**

## UNII-2C SISO Restricted Band edge (Lowest Channel)

### 802.11ax\_HE20 SU mode\_Lowest Channel (5 500 MHz)

| Frequency<br>(MHz)     | Pol.<br>(V/H) | Reading<br>(dB( $\mu$ V)) | Ant. Factor<br>(dB) | Amp.+Cable<br>(dB) | DCF<br>(dB) | Result<br>(dB( $\mu$ V/m)) | Limit<br>(dB( $\mu$ V/m)) | Margin<br>(dB) |
|------------------------|---------------|---------------------------|---------------------|--------------------|-------------|----------------------------|---------------------------|----------------|
| Peak data              |               |                           |                     |                    |             |                            |                           |                |
| 5 459.93 <sup>1)</sup> | H             | 44.53                     | 34.47               | -23.26             | -           | 55.74                      | 74.00                     | 18.26          |
| Average Data           |               |                           |                     |                    |             |                            |                           |                |
| 5 459.93 <sup>1)</sup> | H             | 33.86                     | 34.47               | -23.26             | 0.30        | 45.37                      | 54.00                     | 8.63           |

### 802.11ax\_HE20 RU mode (26T / RU offset 0)\_Lowest Channel (5 500 MHz)

| Frequency<br>(MHz)     | Pol.<br>(V/H) | Reading<br>(dB( $\mu$ V)) | Ant. Factor<br>(dB) | Amp.+Cable<br>(dB) | DCF<br>(dB) | Result<br>(dB( $\mu$ V/m)) | Limit<br>(dB( $\mu$ V/m)) | Margin<br>(dB) |
|------------------------|---------------|---------------------------|---------------------|--------------------|-------------|----------------------------|---------------------------|----------------|
| Peak data              |               |                           |                     |                    |             |                            |                           |                |
| 5 459.70 <sup>1)</sup> | H             | 52.43                     | 34.47               | -23.27             | -           | 63.63                      | 74.00                     | 10.37          |
| Average Data           |               |                           |                     |                    |             |                            |                           |                |
| 5 459.70 <sup>1)</sup> | H             | 33.39                     | 34.47               | -23.27             | 0.22        | 44.81                      | 54.00                     | 9.19           |

### 802.11ax\_HE20 RU mode (52T / RU offset 37)\_Lowest Channel (5 500 MHz)

| Frequency<br>(MHz)     | Pol.<br>(V/H) | Reading<br>(dB( $\mu$ V)) | Ant. Factor<br>(dB) | Amp.+Cable<br>(dB) | DCF<br>(dB) | Result<br>(dB( $\mu$ V/m)) | Limit<br>(dB( $\mu$ V/m)) | Margin<br>(dB) |
|------------------------|---------------|---------------------------|---------------------|--------------------|-------------|----------------------------|---------------------------|----------------|
| Peak data              |               |                           |                     |                    |             |                            |                           |                |
| 5 459.93 <sup>1)</sup> | H             | 51.81                     | 34.47               | -23.26             | -           | 63.02                      | 74.00                     | 10.98          |
| Average Data           |               |                           |                     |                    |             |                            |                           |                |
| 5 459.93 <sup>1)</sup> | H             | 33.89                     | 34.47               | -23.26             | 0.22        | 45.32                      | 54.00                     | 8.68           |

### 802.11ax\_HE20 RU mode (106T / RU offset 53)\_Lowest Channel (5 500 MHz)

| Frequency<br>(MHz)     | Pol.<br>(V/H) | Reading<br>(dB( $\mu$ V)) | Ant. Factor<br>(dB) | Amp.+Cable<br>(dB) | DCF<br>(dB) | Result<br>(dB( $\mu$ V/m)) | Limit<br>(dB( $\mu$ V/m)) | Margin<br>(dB) |
|------------------------|---------------|---------------------------|---------------------|--------------------|-------------|----------------------------|---------------------------|----------------|
| Peak data              |               |                           |                     |                    |             |                            |                           |                |
| 5 457.96 <sup>1)</sup> | H             | 43.43                     | 34.47               | -23.28             | -           | 54.62                      | 74.00                     | 19.38          |
| Average Data           |               |                           |                     |                    |             |                            |                           |                |
| 5 457.96 <sup>1)</sup> | H             | 33.19                     | 34.47               | -23.28             | 0.22        | 44.60                      | 54.00                     | 9.40           |

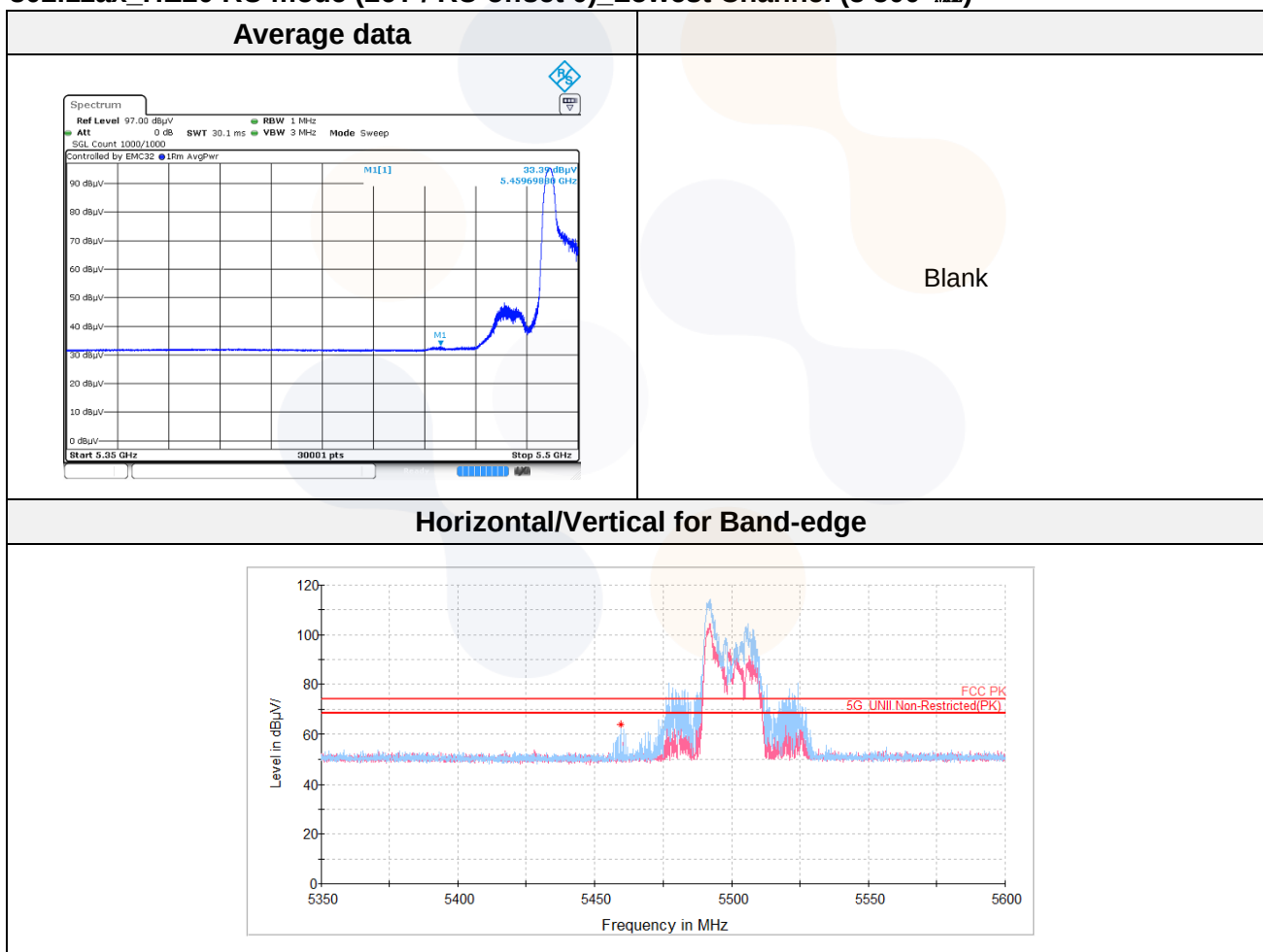
### 802.11ax\_HE20 RU mode (242T / RU offset 61)\_Lowest Channel (5 500 MHz)

| Frequency              | Pol.  | Reading  | Ant. Factor | Amp.+Cable | DCF  | Result     | Limit      | Margin |
|------------------------|-------|----------|-------------|------------|------|------------|------------|--------|
| (MHz)                  | (V/H) | (dB(μV)) | (dB)        | (dB)       | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| <b>Peak data</b>       |       |          |             |            |      |            |            |        |
| 5 459.89 <sup>1)</sup> | H     | 42.86    | 34.47       | -23.26     | -    | 54.07      | 74.00      | 19.93  |
| <b>Average Data</b>    |       |          |             |            |      |            |            |        |
| 5 459.89 <sup>1)</sup> | H     | 33.93    | 34.47       | -23.26     | 0.22 | 45.36      | 54.00      | 8.64   |

### Plot of Band edge

In order to simplify the report, attached plots were only the lowest margin condition

### 802.11ax\_HE20 RU mode (26T / RU offset 0)\_Lowest Channel (5 500 MHz)



## UNII-2C SISO Restricted Band edge (Highest Channel)

### 802.11ax\_HE20 SU mode\_Highest Channel (5 700 MHz)

| Frequency | Pol.  | Reading  | Ant. Factor | Amp. + Cable | DCF  | Result     | Limit      | Margin |
|-----------|-------|----------|-------------|--------------|------|------------|------------|--------|
| (MHz)     | (V/H) | (dB(μV)) | (dB)        | (dB)         | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| Peak data |       |          |             |              |      |            |            |        |
| 5 728.20  | H     | 52.24    | 34.87       | -23.13       | -    | 63.98      | 68.20      | 4.22   |

### 802.11ax\_HE20 RU mode (26T / RU offset 8)\_Highest Channel (5 700 MHz)

| Frequency | Pol.  | Reading  | Ant. Factor | Amp. + Cable | DCF  | Result     | Limit      | Margin |
|-----------|-------|----------|-------------|--------------|------|------------|------------|--------|
| (MHz)     | (V/H) | (dB(μV)) | (dB)        | (dB)         | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| Peak data |       |          |             |              |      |            |            |        |
| 5 728.39  | H     | 54.49    | 34.87       | -23.12       | -    | 66.24      | 68.20      | 1.96   |

### 802.11ax\_HE20 RU mode (52T / RU offset 40)\_Highest Channel (5 700 MHz)

| Frequency | Pol.  | Reading  | Ant. Factor | Amp. + Cable | DCF  | Result     | Limit      | Margin |
|-----------|-------|----------|-------------|--------------|------|------------|------------|--------|
| (MHz)     | (V/H) | (dB(μV)) | (dB)        | (dB)         | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| Peak data |       |          |             |              |      |            |            |        |
| 5 726.36  | H     | 52.97    | 34.86       | -23.14       | -    | 64.69      | 68.20      | 3.51   |

### 802.11ax\_HE20 RU mode (106T / RU offset 54)\_Highest Channel (5 700 MHz)

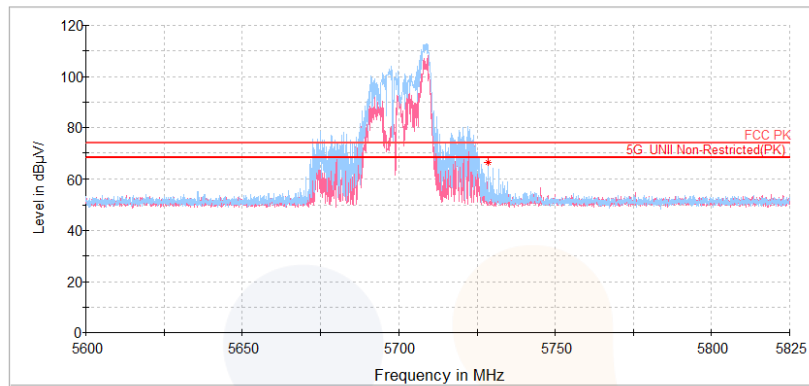
| Frequency | Pol.  | Reading  | Ant. Factor | Amp. + Cable | DCF  | Result     | Limit      | Margin |
|-----------|-------|----------|-------------|--------------|------|------------|------------|--------|
| (MHz)     | (V/H) | (dB(μV)) | (dB)        | (dB)         | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| Peak data |       |          |             |              |      |            |            |        |
| 5 725.01  | H     | 52.26    | 34.86       | -23.14       | -    | 63.98      | 68.20      | 4.22   |

### 802.11ax\_HE20 RU mode (242T / RU offset 61)\_Highest Channel (5 700 MHz)

| Frequency | Pol.  | Reading  | Ant. Factor | Amp.+Cable | DCF  | Result     | Limit      | Margin |
|-----------|-------|----------|-------------|------------|------|------------|------------|--------|
| (MHz)     | (V/H) | (dB(μV)) | (dB)        | (dB)       | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| Peak data |       |          |             |            |      |            |            |        |
| 5 726.22  | H     | 53.44    | 34.86       | -23.14     | -    | 65.16      | 68.20      | 3.04   |

**Plot of Band edge**

In order to simplify the report, attached plots were only the lowest margin condition

**802.11ax\_HE20 RU mode (26T / RU offset 8)\_Highest Channel (5 700 MHz)****Horizontal/Vertical for Band-edge**

**UNII-3 SISO Restricted Band edge (Lowest Channel)****802.11ax\_HE20 SU mode\_Lowest Channel (5 745 MHz)**

| Frequency | Pol.  | Reading  | Ant. Factor | Amp. + Cable | DCF  | Result     | Limit      | Margin |
|-----------|-------|----------|-------------|--------------|------|------------|------------|--------|
| (MHz)     | (V/H) | (dB(μV)) | (dB)        | (dB)         | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| Peak data |       |          |             |              |      |            |            |        |
| 5 724.48  | H     | 58.47    | 34.86       | -23.15       | -    | 70.18      | 121.02     | 50.84  |

**802.11ax\_HE20 RU mode (26T / RU offset 0)\_Lowest Channel (5 745 MHz)**

| Frequency | Pol.  | Reading  | Ant. Factor | Amp. + Cable | DCF  | Result     | Limit      | Margin |
|-----------|-------|----------|-------------|--------------|------|------------|------------|--------|
| (MHz)     | (V/H) | (dB(μV)) | (dB)        | (dB)         | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| Peak data |       |          |             |              |      |            |            |        |
| 5 722.82  | H     | 65.22    | 34.86       | -23.15       | -    | 76.93      | 117.22     | 40.28  |

**802.11ax\_HE20 RU mode (52T / RU offset 37)\_Lowest Channel (5 745 MHz)**

| Frequency | Pol.  | Reading  | Ant. Factor | Amp. + Cable | DCF  | Result     | Limit      | Margin |
|-----------|-------|----------|-------------|--------------|------|------------|------------|--------|
| (MHz)     | (V/H) | (dB(μV)) | (dB)        | (dB)         | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| Peak data |       |          |             |              |      |            |            |        |
| 5 724.03  | H     | 62.09    | 34.86       | -23.15       | -    | 73.80      | 119.99     | 46.18  |

**802.11ax\_HE20 RU mode (106T / RU offset 53)\_Lowest Channel (5 745 MHz)**

| Frequency | Pol.  | Reading  | Ant. Factor | Amp. + Cable | DCF  | Result     | Limit      | Margin |
|-----------|-------|----------|-------------|--------------|------|------------|------------|--------|
| (MHz)     | (V/H) | (dB(μV)) | (dB)        | (dB)         | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| Peak data |       |          |             |              |      |            |            |        |
| 5 724.50  | H     | 54.40    | 34.86       | -23.15       | -    | 66.11      | 121.05     | 54.94  |

**802.11ax\_HE20 RU mode (242T / RU offset 61)\_Lowest Channel (5 745 MHz)**

| Frequency | Pol.  | Reading  | Ant. Factor | Amp. + Cable | DCF  | Result     | Limit      | Margin |
|-----------|-------|----------|-------------|--------------|------|------------|------------|--------|
| (MHz)     | (V/H) | (dB(μV)) | (dB)        | (dB)         | (dB) | (dB(μV/m)) | (dB(μV/m)) | (dB)   |
| Peak data |       |          |             |              |      |            |            |        |
| 5 722.44  | H     | 61.97    | 34.86       | -23.16       | -    | 73.67      | 116.37     | 42.70  |

### Plot of Band edge

In order to simplify the report, attached plots were only the lowest margin condition

802.11ax\_HE20 RU mode (26T / RU offset 0)\_Lowest Channel (5 745 MHz)

#### Horizontal/Vertical for Band-edge

