

# FCC DTS REPORT

## Certification

<b>Applicant Name:</b> SAMSUNG Electronics Co., Ltd.	<b>Date of Issue:</b> August 19, 2021
<b>Address:</b> 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea	<b>Test Site/Location:</b> 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA
	<b>Report No.:</b> HCT-RF-2108-FC006

<b>FCC ID:</b>	<b>A3LSMM526B</b>
<b>APPLICANT:</b>	<b>SAMSUNG Electronics Co., Ltd.</b>
<b>Model:</b>	SM-M526B/DS
<b>EUT Type:</b>	Mobile Phone
<b>Average Output Power:</b>	802.11ax(HE20): 13.94 dBm
<b>Frequency Range:</b>	2 412 MHz ~ 2 472 MHz
<b>Modulation type:</b>	OFDMA
<b>FCC Classification:</b>	Digital Transmission System(DTS)
<b>FCC Rule Part(s):</b>	Part 15.247

Engineering Statement:

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules under normal use and maintenance.

Report No.: HCT-RF-2108-FC006

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**REVIEWED BY**



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**Report prepared by : Sang Hoon Lee**  
**Engineer of Telecommunication Testing Center**

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**Report approved by : Kwon Jeong**  
**Manager of Telecommunication Testing Center**

This test results were applied only to the test methods required by the standard.

This laboratory is not accredited for the test results marked \*.

The above Test Report is the accredited test result by (KS Q) ISO/IEC 17025 and KOLAS(Korea Laboratory Accreditation Scheme), which signed the ILAC-MRA. (HCT Accreditation No.: KT197)

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## Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-2108-FC006	August 19, 2021	- First Approval Report

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**1. EUT DESCRIPTION**

<b>Model</b>	SM-M526B/DS	
<b>Additional Model</b>	-	
<b>EUT Type</b>	Mobile Phone	
<b>Power Supply</b>	DC 3.86 V	
<b>Frequency Range</b>	2 412 MHz ~ 2 472 MHz	
<b>Max. RF Output Power SUM (MIMO Ant 1 + MIMO Ant 2)</b>	<u>Peak Power</u> (For information only)	22.39 dBm
	<u>Average Power</u>	13.94 dBm
<b>Modulation Type</b>	OFDMA	
<b>Number of Channels</b>	13 Channels	
<b>Date(s) of Tests</b>	July 26, 2021 ~ August 18, 2021	
<b>Serial number</b>	Radiated: R3CR60J8ZHX Conducted: 49aad8bca8197ece	

## **2. TEST METHODOLOGY**

FCC KDB 558074 D01 15.247 Meas Guidance v05r02 dated April 02, 2019 entitled “guidance for compliance measurements on digital transmission system, frequency hopping spread spectrum system, and hybrid system devices and the measurement procedure described in ANSI C63.10(Version : 2013) ‘the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices’.

### **EUT CONFIGURATION**

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

### **EUT EXERCISE**

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

### **GENERAL TEST PROCEDURES**

#### **Conducted Emissions**

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 6.2 of ANSI C63.10. (Version :2013) Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-peak and average detector modes.

#### **Radiated Emissions**

The EUT is placed on a turn table, which is 0.8 m above ground plane below 1 GHz. Above 1 GHz with 1.5m using absorbers between the EUT and receive antenna. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3 m away from the receiving antenna, which varied from 1 m to 4 m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes according to the requirements in Section 6.6.5 of ANSI C63.10. (Version: 2013)

### **DESCRIPTION OF TEST MODES**

The EUT has been tested under operating condition. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

### **3. INSTRUMENT CALIBRATION**

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment's, which is traceable to recognized national standards.

Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2017).

### **4. FACILITIES AND ACCREDITATIONS**

#### **FACILITIES**

The SAC(Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA. The site is constructed in conformance with the requirements of ANSI C63.4. (Version :2014) and CISPR Publication 22.

Detailed description of test facility was submitted to the Commission and accepted dated April 02, 2018 (Registration Number: KR0032).

#### **EQUIPMENT**

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers. Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

**5. ANTENNA REQUIREMENTS**

**According to FCC 47 CFR §15.203:**

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can 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.”

- (1) The antennas of this E.U.T are permanently attached.
- (2) The E.U.T Complies with the requirement of §15.203

**6. 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 indicate a 95 % level of confidence.

The measurement data shown herein meets or exceeds the  $U_{CISPR}$  measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

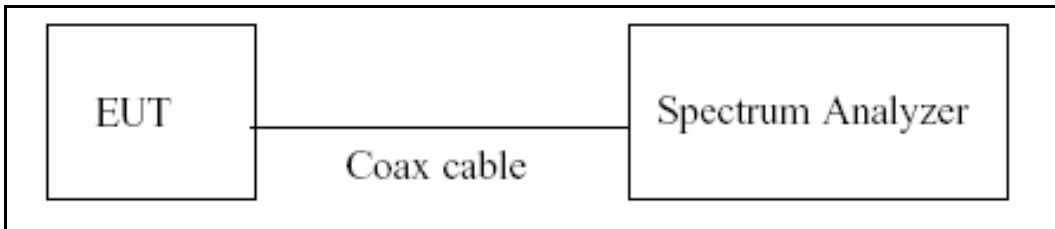
Parameter	Expanded Uncertainty (dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.82 ( Confidence level about 95 %, k=2)
Radiated Disturbance (9 kHz ~ 30 MHz)	3.40 ( Confidence level about 95 %, k=2)
Radiated Disturbance (30 MHz ~ 1 GHz)	4.80 ( Confidence level about 95 %, k=2)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.70 ( Confidence level about 95 %, k=2)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.05 ( Confidence level about 95 %, k=2)



## 7. DESCRIPTION OF TESTS

### 7.1. Duty Cycle

#### Test Configuration



#### Test Procedure

The transmitter output is connected to the Spectrum Analyzer.

We tested according to the zero-span measurement method.

The largest available value of RBW is 8 MHz and VBW is 50 MHz.

The zero-span method of measuring duty cycle shall not be used if  $T \leq 6.25$  microseconds. ( $50/6.25 = 8$ )

The zero-span method was used because all measured  $T$  data are  $> 6.25$  microseconds and both RBW and VBW are  $> 50/T$ .

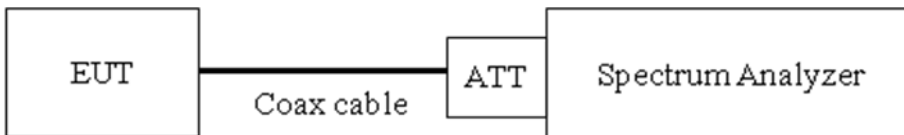
1. RBW = 8 MHz (the largest available value)
2. VBW = 8 MHz ( $\geq$  RBW)
3. SPAN = 0 Hz
4. Detector = Peak
5. Number of points in sweep  $> 100$
6. Trace mode = Clear write
7. Measure  $T_{total}$  and  $T_{on}$
8. Calculate Duty Cycle =  $T_{on}/T_{total}$  and Duty Cycle Factor =  $10\log(1/Duty\ Cycle)$

## 7.2. 6 dB Bandwidth

### Limit

The minimum permissible 6 dB bandwidth is 500 kHz.

### Test Configuration



### Test Procedure

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to (Procedure 11.8.1 in ANSI 63.10-2013)

- 1) RBW = 100 kHz
- 2) VBW  $\geq 3 \times$  RBW
- 3) Detector = Peak
- 4) Trace mode = Max Hold
- 5) Sweep = auto couple
- 6) Allow the trace to stabilize
- 7) We tested 6 dB bandwidth using the automatic bandwidth measurement capability of a spectrum analyzer. X dB is set 6 dB.

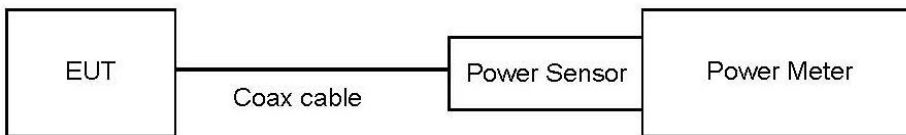
Note : We tested OBW using the automatic bandwidth measurement capability of a spectrum analyzer.

### 7.3. Output Power

#### Limit

The maximum permissible conducted output power is 1 Watt.

#### Test Configuration



#### Test Procedure

The transmitter output is connected to the Power Meter.

- Peak Power (Procedure 11.9.1.3 in ANSI 63.10-2013)  
: Measure the peak power of the transmitter.
  
- Average Power (Procedure 11.9.2.3 in ANSI 63.10-2013)
  - 1) Measure the duty cycle.
  - 2) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
  - 3) 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.

#### Sample Calculation

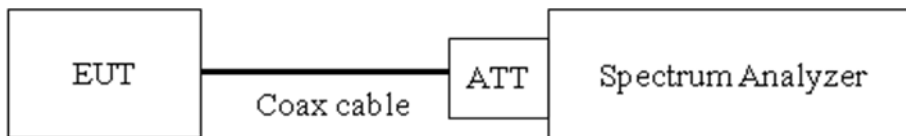
- Conducted Output Power(Peak) = Measured Level + ATT loss + Cable loss
- Conducted Output Power(Average) = Measured Level + ATT loss + Cable loss + Duty Cycle Factor

## 7.4. Power Spectral Density

### Limit

The transmitter power density average over 1-second interval shall not be greater than 8 dBm in any 3 kHz BW.

### Test Configuration



### Test Procedure

The transmitter output is connected to the Spectrum Analyzer.

We tested according to Procedure 8.4 in KDB 558074 v05r02, Procedure 11.10 in ANSI 63.10-2013.

The spectrum analyzer is set to :

- 1) Set analyzer center frequency to DTS channel center frequency.
- 2) Set span to at least 1.5 times the OBW.
- 3)  $RBW = 3 \text{ kHz} \leq RBW \leq 100 \text{ kHz}$ .
- 4)  $VBW \geq 3 \times RBW$ .
- 5) Sweep = auto couple
- 6) Detector = power averaging (rms) or sample detector (when rms not available).
- 7) Ensure that the number of measurement points in the sweep  $\geq [2 \times \text{span} / RBW]$ .
- 8) Employ trace averaging (rms) mode over a minimum of 100 traces
- 9) Use the peak marker function to determine the maximum amplitude level.
- 10) Use the peak marker function to determine the maximum amplitude level within the RBW.  
If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.
- 11) if then duty factor shall be added to adjust the result if the duty cycle is less than 98 %

### Sample Calculation

- Power Spectral Density = Measured Level + ATT loss + Cable loss

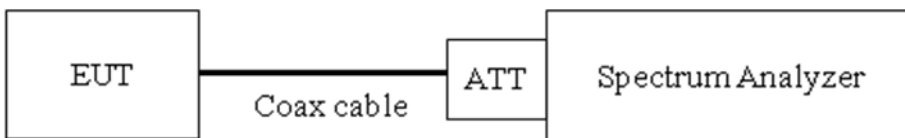
## 7.5. Conducted Band Edge(Out of Band Emissions) & Conducted Spurious Emissions

### Limit

The maximum conducted (Average) output power was used to demonstrate compliance, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz.

[ Conducted > 30 dBc ]

### Test Configuration



### Test Procedure

The transmitter output is connected to the spectrum analyzer.

(Procedure 11.11 in ANSI 63.10-2013)

- 1) RBW = 100 kHz
- 2) VBW  $\geq 3 \times$  RBW
- 3) Set span to encompass the spectrum to be examined
- 4) Detector = Peak
- 5) Trace Mode = Max Hold
- 6) Sweep time = auto couple
- 7) Ensure that the number of measurement points  $\geq 2 \times$  Span/RBW
- 8) Allow trace to fully stabilize.
- 9) Use peak marker function to determine the maximum amplitude level.

Measurements are made over the 30 MHz to 25 GHz range with the transmitter set to the lowest, middle, and highest channels.

**Factors for frequency**

Freq(MHz)	Factor(dB)
30	20.04
100	20.09
200	20.13
300	20.19
400	20.22
500	20.23
600	20.23
700	20.25
800	20.27
900	20.29
1000	20.31
2000	20.46
2400	20.52
2480	20.52
2500	20.52
3000	20.57
4000	20.67
5000	20.75
5150	20.77
5850	20.82
6000	20.82
7000	20.91
8000	20.98
9000	21.05
10 000	21.12
11 000	21.16
12 000	21.24
13 000	21.32
14 000	21.30
15 000	21.32
16 000	21.37
17 000	21.41
18 000	21.47
19 000	21.50
20 000	21.56
21 000	21.77
22 000	21.74
23 000	21.94
24 000	21.77
25 000	21.80

Note : 1. 2400 ~ 2500 MHz is fundamental frequency range.

2. Factor = Attenuator loss(20 dB) + Cable loss(1ea)

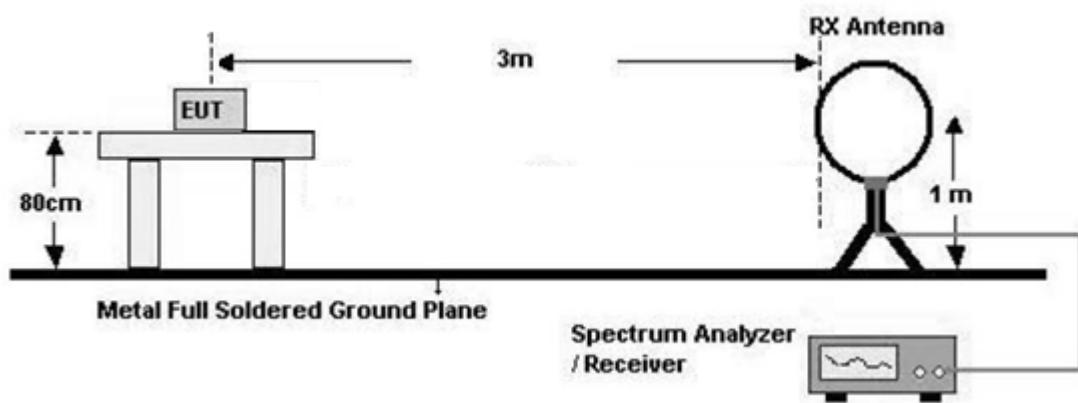
**7.6. Radiated Test**

**Limit**

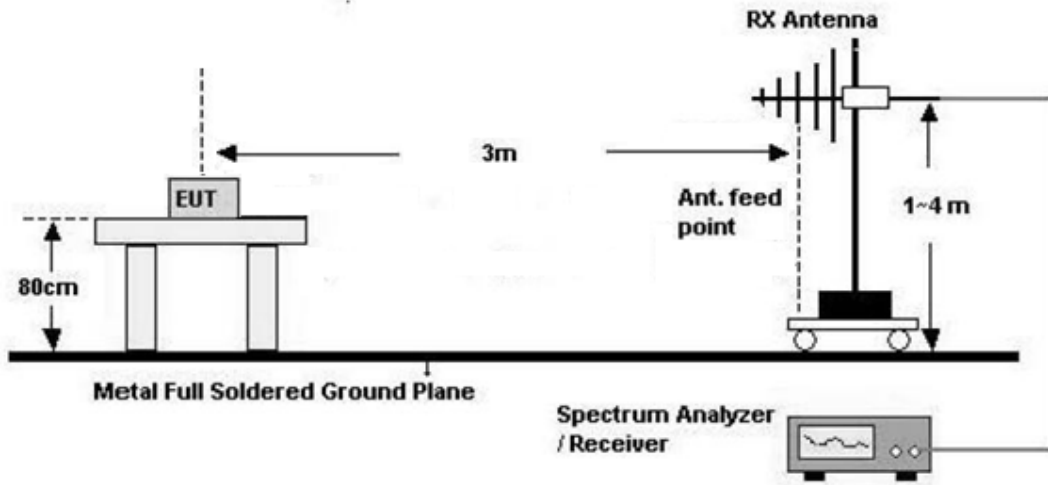
Frequency (MHz)	Field Strength ( $\mu\text{V/m}$ )	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

**Test Configuration**

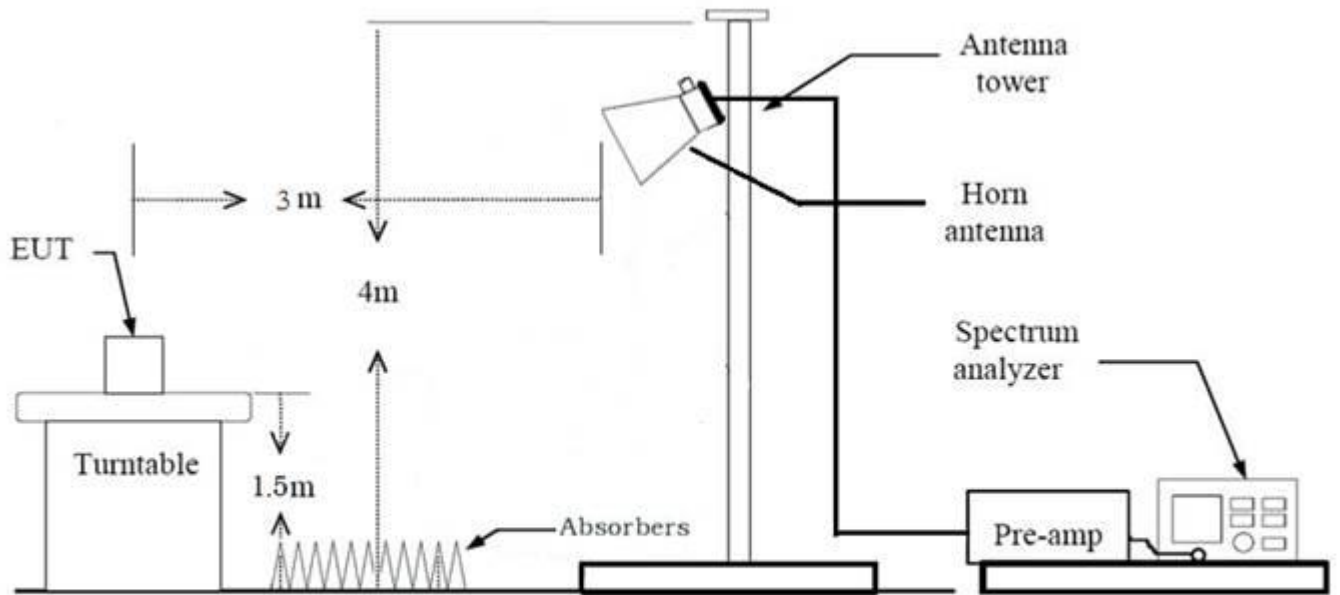
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz





**Test Procedure of Radiated spurious emissions(Below 30 MHz)**

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The loop antenna was placed at a location 3 m from the EUT
3. The EUT is placed on a turntable, which is 0.8 m above ground plane.
4. We have done x, y, z planes in EUT and horizontal and vertical polarization and Parallel to the ground plane in detecting antenna.
5. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
6. Distance Correction Factor(0.009 MHz – 0.490 MHz) =  $40\log(3\text{ m}/300\text{ m}) = - 80\text{ dB}$   
Measurement Distance : 3 m
7. Distance Correction Factor(0.490 MHz – 30 MHz) =  $40\log(3\text{ m}/30\text{ m}) = - 40\text{ dB}$   
Measurement Distance : 3 m
8. Spectrum Setting
  - Frequency Range = 9 kHz ~ 30 MHz
  - Detector = Peak
  - Trace = Max Hold
  - RBW = 9 kHz
  - VBW  $\geq 3 \times$  RBW
9. Total = Measured Level + Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F)
10. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.

**KDB 414788 OFS and Chamber Correlation Justification**

Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

OFS and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

**Test Procedure of Radiated spurious emissions(Below 1 GHz)**

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The EUT is placed on a turntable, which is 0.8 m above ground plane.
3. The Hybrid antenna was placed at a location 3 m from the EUT, which is varied from 1 m to 4 m to find out the highest emissions.
4. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
5. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
6. Spectrum Setting
  - (1) Measurement Type(Peak):
    - Measured Frequency Range : 30 MHz – 1 GHz
    - Detector = Peak
    - Trace = Max Hold
    - RBW = 100 kHz
    - VBW  $\geq$  3 x RBW
  - (2) Measurement Type(Quasi-peak):
    - Measured Frequency Range : 30 MHz – 1 GHz
    - Detector = Quasi-Peak
    - RBW = 120 kHz
- ※ In general, (1) is used mainly
7. Total = Measured Level + Antenna Factor(A.F) + Cable Loss(C.L)
8. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.

**Test Procedure of Radiated spurious emissions (Above 1 GHz)**

1. The EUT is placed on a turntable, which is 1.5 m above ground plane.
2. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
3. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
4. EUT is set 3 m away from the receiving antenna, which is varied from 1 m to 4 m to find out the highest emissions.
5. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
6. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
7. The unit was tested with its standard battery.
8. Spectrum Setting (Method 8.6 in KDB 558074 v05r02, Procedure 11.12 in ANSI 63.10-2013)
  - (1) Measurement Type(Peak):
    - Measured Frequency Range : 1 GHz – 25 GHz
    - Detector = Peak

- Trace = Max Hold
- RBW = 1 MHz
- VBW  $\geq 3 \times$  RBW

(2) Measurement Type(Average): Duty cycle  $\geq 98 \%$

- Measured Frequency Range : 1 GHz – 25 GHz
- Detector = RMS
- Averaging type = power (*i.e.*, RMS)
- RBW = 1 MHz
- VBW  $\geq 3 \times$  RBW
- Sweep time = auto.
- Trace mode = average (at least 100 traces).

(3) Measurement Type(Average): Duty cycle  $< 98 \%$ , duty cycle variations are less than  $\pm 2 \%$

- Measured Frequency Range : 1 GHz – 25 GHz
- Detector = RMS
- Averaging type = power (*i.e.*, RMS)
- RBW = 1 MHz
- VBW  $\geq 3 \times$  RBW
- Sweep time = auto.
- Trace mode = average (at least 100 traces).
- Correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle.
- Duty Cycle Factor (dB) : Please refer to the please refer to section 9.1.

9. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin  $> 20$  dB from the applicable limit) and considered that's already beyond the background noise floor.

10. Distance extrapolation factor =  $20\log$  (test distance / specific distance) (dB)

11. Total(Measurement Type : Peak)

$$= \text{Measured Level} + \text{Antenna Factor(A.F)} + \text{Cable Loss(C.L)} - \text{Amp Gain(A.G)} + \text{Distance Factor(D.F)}$$

Total(Measurement Type : Average, Duty cycle  $\geq 98 \%$ )

$$= \text{Measured Level} + \text{Antenna Factor(A.F)} + \text{Cable Loss(C.L)} - \text{Amp Gain(A.G)} + \text{Distance Factor(D.F)}$$

Total(Measurement Type : Average, Duty cycle  $< 98 \%$ )

$$= \text{Measured Level} + \text{Antenna Factor(A.F)} + \text{Cable Loss(C.L)} - \text{Amp Gain(A.G)} + \text{Distance Factor(D.F)} \\ + \text{Duty Cycle Factor}$$

**Test Procedure of Radiated Restricted Band Edge**

1. The EUT is placed on a turntable, which is 1.5 m above ground plane.
2. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
3. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
4. EUT is set 3 m away from the receiving antenna, which is varied from 1 m to 4 m to find out the highest emissions.
5. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
6. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
7. The unit was tested with its standard battery.

8. Spectrum Setting

(1) Measurement Type(Peak):

- Measured Frequency Range : 2310 MHz ~ 2390 MHz/ 2483.5 MHz ~ 2500 MHz
- Detector = Peak
- Trace = Max Hold
- RBW = 1 MHz
- VBW  $\geq$  3 x RBW

(2) Measurement Type(Average): Duty cycle  $\geq$  98 %,

- Measured Frequency Range : 2310 MHz ~ 2390 MHz/ 2483.5 MHz ~ 2500 MHz
- Detector = RMS
- Averaging type = power (*i.e.*, RMS)
- RBW = 1 MHz
- VBW  $\geq$  3 x RBW
- Sweep time = auto.
- Trace mode = average (at least 100 traces).

(3) Measurement Type(Average): Duty cycle < 98 %, duty cycle variations are less than  $\pm 2$  %

- Measured Frequency Range : 2310 MHz ~ 2390 MHz/ 2483.5 MHz ~ 2500 MHz
- Detector = RMS
- Averaging type = power (*i.e.*, RMS)
- RBW = 1 MHz
- VBW  $\geq$  3 x RBW
- Sweep time = auto.
- Trace mode = average (at least 100 traces).
- Correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle.

- Duty Cycle Factor (dB) : Please refer to the please refer to section 9.1.

9. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.

10. Distance extrapolation factor =  $20\log(\text{test distance} / \text{specific distance})$  (dB)

11. Total(Measurement Type : Peak)

= Measured Level + Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F)

Total(Measurement Type : Average, Duty cycle  $\geq$  98 %)

= Measured Level + Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F)

Total(Measurement Type : Average, Duty cycle < 98 %)

= Measured Level + Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F) + Duty Cycle Factor

**7.7. AC Power line Conducted Emissions**

**Limit**

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN).

Frequency Range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56 <sup>(a)</sup>	56 to 46 <sup>(a)</sup>
0.50 to 5	56	46
5 to 30	60	50

<sup>(a)</sup>Decreases with the logarithm of the frequency.

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

**Test Configuration**

See test photographs attached in Annex A for the actual connections between EUT and support equipment.

**Test Procedure**

1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors : Quasi Peak and Average Detector.

**Sample Calculation**

Quasi-peak(Final Result) = Measured Level + Correction Factor

**7.8. Test RU offset for Tones**

BW (MHz)	Tones (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	-	61	-

**7.9. Worst case configuration and mode**

**Conducted test**

1. All data rate of operation were investigated and the worst case results are reported.  
(Worst case : MCS0)
2. Bandedge (Conducted)  
: All Mode(Channel, Tone, RU Offset) of operation were investigated and the worst case configuration results are reported

Tone	Channel	RU Index
26	1, 2, 10, 11, 12, 13	0, 8
52	1, 2, 10, 11, 12, 13	37, 40
106	1, 2, 10, 11, 12, 13	53, 54
242	1, 2, 10, 11, 12, 13	61

**Radiated test**

1. Full RU(Resource Unit) mode and SU(Single Unit) mode have no difference in physical waveform.  
This Report has been described only Full RU(Resource Unit) mode with worst output power
2. All modes of operation were investigated and the worst case configuration results are reported.
  - Mode : Stand alone, Stand alone + External accessories(Earphone, etc)
  - Worstcase : Stand alone
3. EUT Axis
  - Radiated Spurious Emissions : Y
  - Radiated Restricted Band Edge : X
4. All data rate of operation were investigated and the worst case results are reported.  
(Worst case : MCS0)
5. All Antenna of operation were investigated and the worst case results are reported
6. All position of loop antenna were investigated and the test result is a no critical peak found at all positions.
  - Position : Horizontal, Vertical, Parallel to the ground plane



7. All mode(Tone, RU Offset) of operation were investigated and the worst case configuration results are reported

Test	Tone	RU Offset
RSE	Worst case : 242 T	Mid Edge: RU 61
	Additional Tone : 26T, 52 T, 106T,	26 T : CH 1 (RU 4), CH 6 (RU 4), CH 11 (RU 4) 52 T : CH 1 (RU 38), CH 6 (RU 38), CH 11 (RU 38) 106 T : CH 1 (RU 53), CH 6 (RU 53), CH 11 (RU 53)
Bandedge	Worst case : 26 T	Low Edge: RU 0 High Edge: RU 8
	Additional Tone : 52 T, 106 T, 242 T	Low Edge: RU 37, RU 53, RU 61 High Edge: RU 40, RU 54, RU 61

**Radiated test(DBS)**

1. Please refer to the SM-M526B/DS[DTS] Test Report.

**AC Power line Conducted Emissions**

1. Please refer to the SM-M526B/DS[DTS] Test Report.

**8. SUMMARY TEST OF RESULTS**

Test Description	FCC Part Section(s)	Test Limit	Test Condition	Test Result
6 dB Bandwidth	§15.247(a)(2)	> 500 kHz	Conducted	PASS
Conducted Maximum Output Power	§15.247(b)(3)	< 1 Watt		PASS
Power Spectral Density	§15.247(e)	< 8 dBm / 3 kHz Band		PASS
Band Edge (Out of Band Emissions)	§15.247(d)	Conducted > 30 dBc		PASS
AC Power line Conducted Emissions	§15.207	cf. Section 7.7		PASS (Note1)
Radiated Spurious Emissions	§15.247(d), 15.205, 15.209	cf. Section 7.6	Radiated	PASS
Radiated Restricted Band Edge	§15.247(d), 15.205, 15.209	cf. Section 7.6		PASS

**Note:**

1. Please refer to the SM-M526B/DS[DTS] Test Report.

## 9. TEST RESULT

### 9.1 DUTY CYCLE

Mode	Tone (T)	Data Rate	On Time (ms)	Total Time (ms)	Duty Cycle	Duty Cycle Factor (dB)
802.11ax (HE20)	26	MCS0	5.088	5.111	0.996	0.02
		MCS1	5.077	5.100	0.996	0.02
		MCS2	3.892	3.913	0.995	0.02
		MCS3	2.934	2.956	0.992	0.03
		MCS4	1.984	2.006	0.989	0.05
		MCS5	1.505	1.528	0.985	0.07
		MCS6	1.348	1.371	0.983	0.07
		MCS7	1.224	1.246	0.982	0.08
		MCS8	1.029	1.049	0.981	0.08
		MCS9	0.937	0.958	0.979	0.09
	52	MCS0	5.075	5.097	0.996	0.02
		MCS1	2.936	2.959	0.992	0.03
		MCS2	1.984	2.006	0.989	0.05
		MCS3	1.505	1.525	0.987	0.06
		MCS4	1.026	1.049	0.978	0.10
		MCS5	0.788	0.811	0.972	0.12
		MCS6	0.712	0.735	0.969	0.14
		MCS7	0.651	0.674	0.966	0.15
		MCS8	0.550	0.573	0.960	0.18
		MCS9	0.507	0.529	0.957	0.19
	106	MCS0	2.769	2.792	0.992	0.04
		MCS1	1.419	1.441	0.984	0.07
		MCS2	0.970	0.993	0.977	0.10
		MCS3	0.747	0.768	0.974	0.12
		MCS4	0.524	0.547	0.958	0.18
		MCS5	0.410	0.433	0.947	0.23
		MCS6	0.375	0.398	0.943	0.26
		MCS7	0.347	0.367	0.945	0.25
		MCS8	0.301	0.322	0.937	0.28
		MCS9	0.279	0.301	0.924	0.34

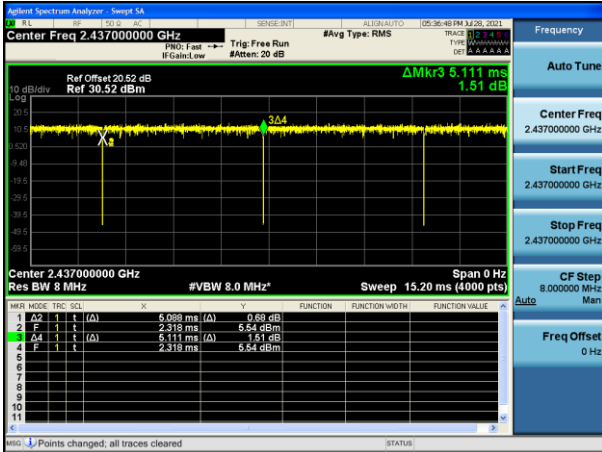
Mode	Tone (T)	Data Rate	On Time (ms)	Total Time (ms)	Duty Cycle	Duty Cycle Factor (dB)
802.11ax (HE20)	242	MCS0	1.249	1.269	0.984	0.07
		MCS1	0.661	0.681	0.970	0.13
		MCS2	0.464	0.486	0.953	0.21
		MCS3	0.370	0.390	0.948	0.23
		MCS4	0.269	0.291	0.922	0.35
		MCS5	0.220	0.241	0.916	0.38
		MCS6	0.205	0.227	0.904	0.44
		MCS7	0.190	0.213	0.893	0.49
		MCS8	0.175	0.198	0.885	0.53
		MCS9	0.165	0.185	0.890	0.50
802.11ax(SU)	BW 20	MCS0	5.435	5.468	0.994	0.03
		MCS1	5.435	5.468	0.994	0.03
		MCS2	5.435	5.468	0.994	0.03
		MCS3	5.435	5.468	0.994	0.03
		MCS4	5.435	5.468	0.994	0.03
		MCS5	5.435	5.468	0.994	0.03
		MCS6	5.435	5.468	0.994	0.03
		MCS7	5.435	5.468	0.994	0.03
		MCS8	5.435	5.468	0.994	0.03
		MCS9	5.435	5.468	0.994	0.03

**Test Plots**

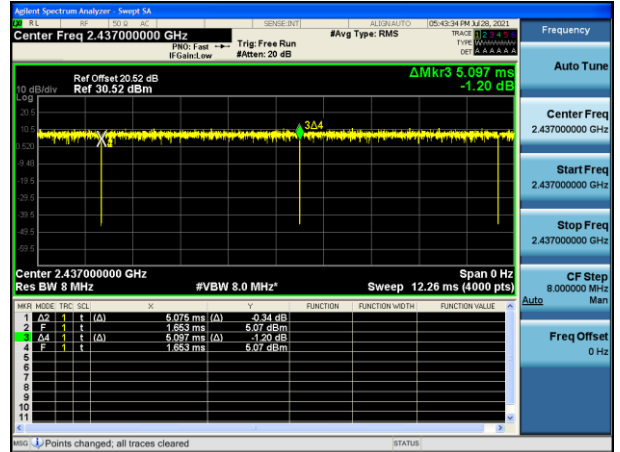
**Note:**

In order to simplify the report, attached plots were only the most lowest datarate.

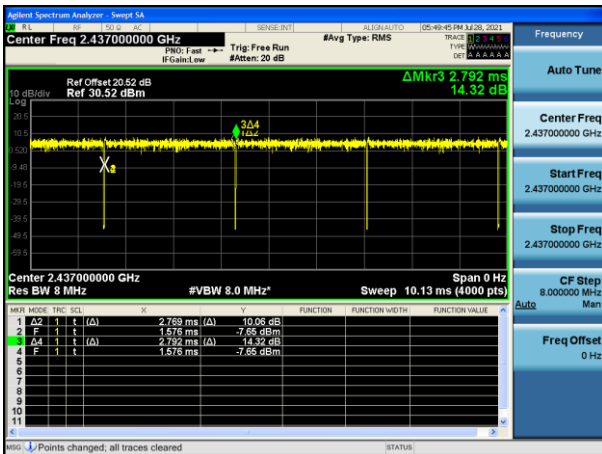
**26 Tone MCS0**



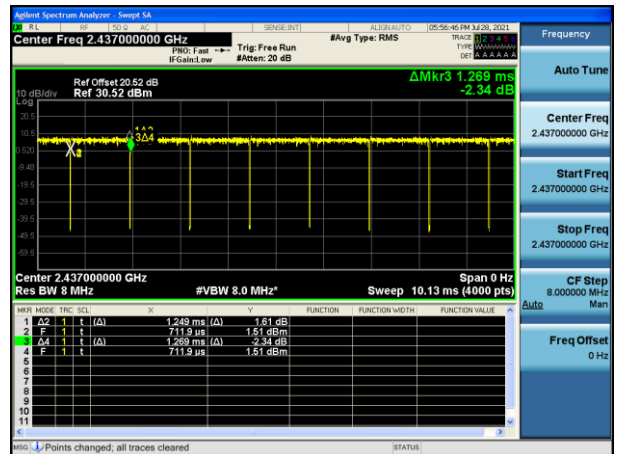
**52 Tone MCS0**



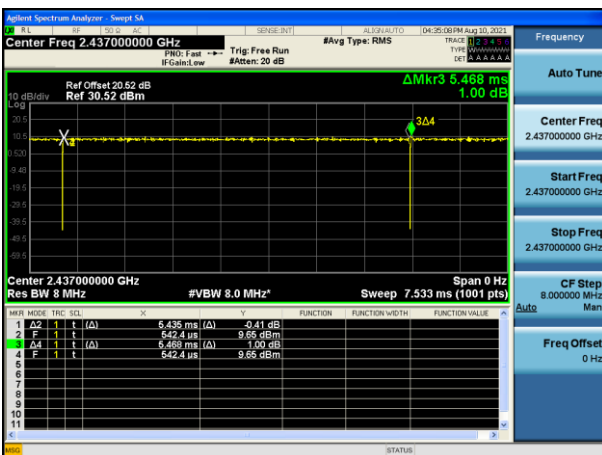
**106 Tone MCS0**



**242 Tone MCS0**



**SU MCS0**



**9.2 6 dB BANDWIDTH**

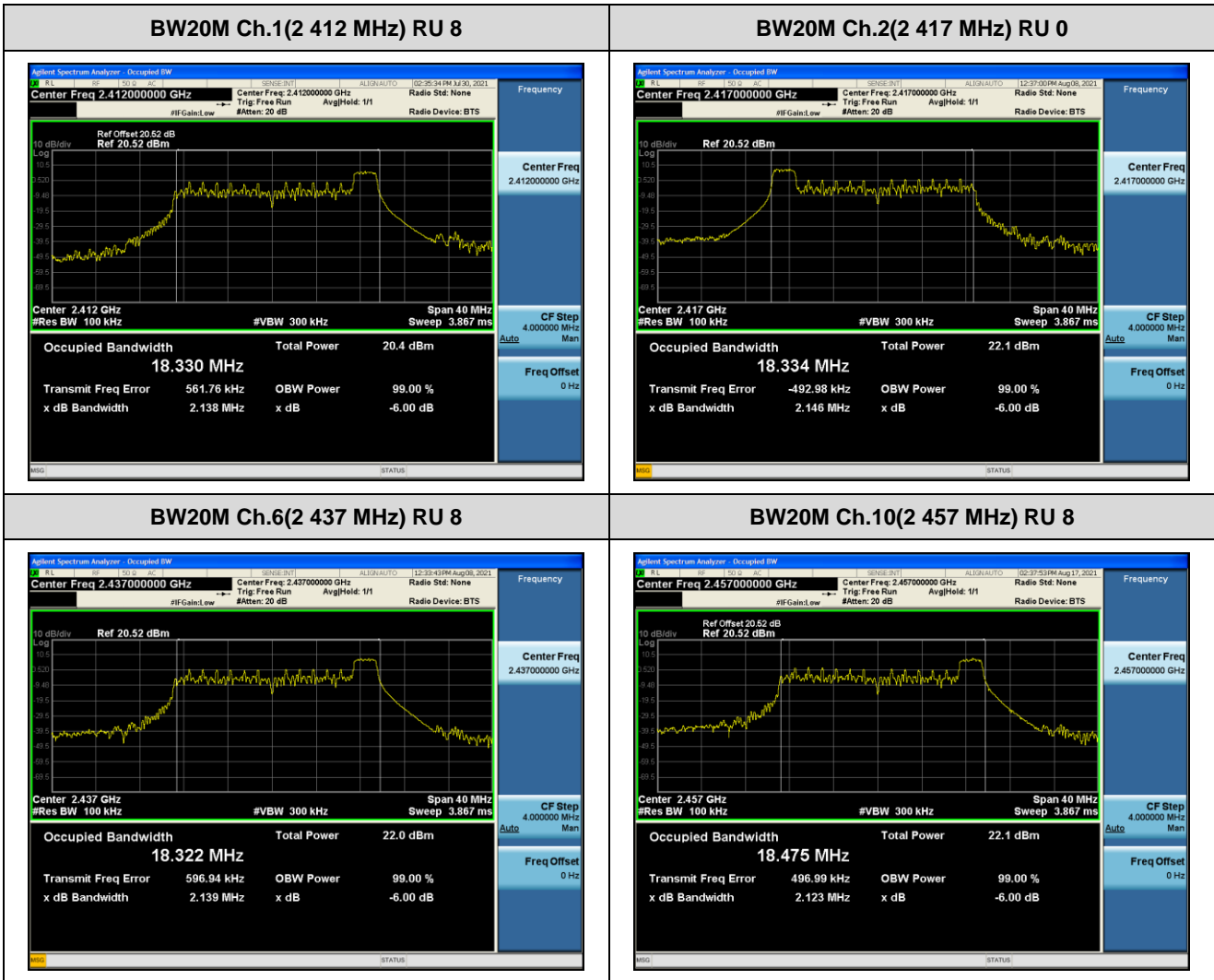
BW	Frequency [MHz]	Channel No.	RU Index	6 dB BW (MHz)				
				26 T	52 T	106 T	242 T	SU
HE20	2 412	1	Low	2.151	17.11	18.13	-	-
			Mid	2.707	15.13	-	19.10	19.12
			High	2.138	17.08	17.15	-	-
	2 417	2	Low	2.146	17.13	17.77	-	-
			Mid	2.701	15.14	-	19.06	19.06
			High	2.156	17.06	17.17	-	-
	2 437	6	Low	2.141	17.13	17.74	-	-
			Mid	2.706	15.12	-	19.07	19.07
			High	2.139	17.08	17.74	-	-
	2 457	10	Low	2.149	17.08	17.16	-	-
			Mid	2.692	15.11	-	19.02	19.02
			High	2.123	17.11	17.33	-	-
	2 462	11	Low	2.149	17.11	17.19	-	-
			Mid	2.709	15.12	-	19.09	19.10
			High	2.132	17.09	17.17	-	-
	2 467	12	Low	2.134	17.09	17.17	-	-
			Mid	2.701	15.13	-	19.02	19.03
			High	2.143	17.09	17.17	-	-
	2 472	13	Low	2.113	17.11	17.16	-	-
			Mid	2.707	15.13	-	18.99	18.99
			High	2.150	17.09	17.32	-	-

# Limit : > 500 kHz

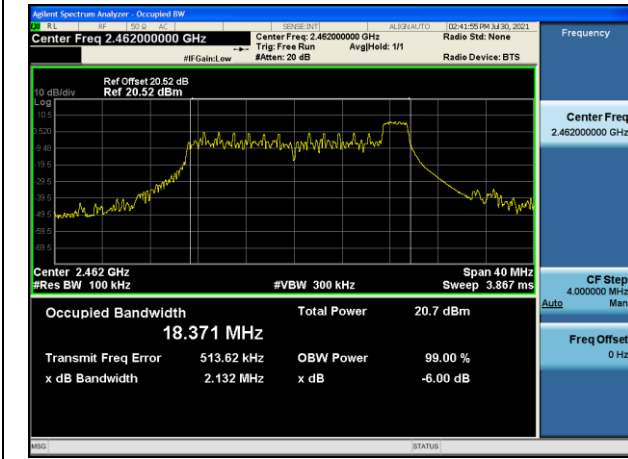
**Test Plots**

**Note:**

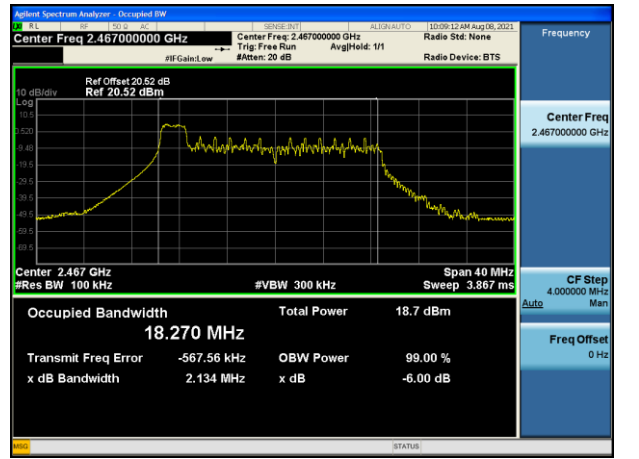
In order to simplify the report, attached plots were only the most narrow 6 dB BW channel.



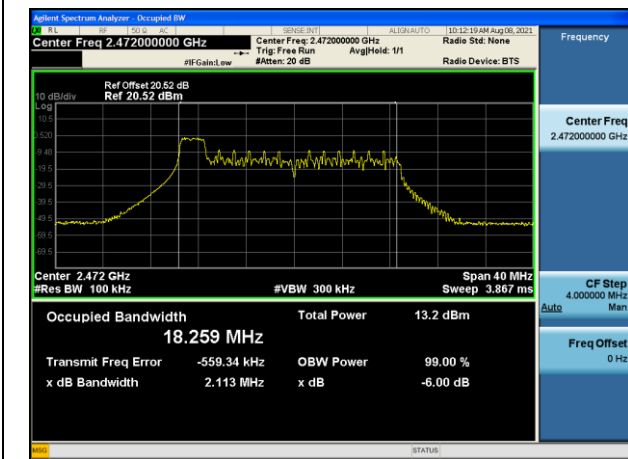
**BW20M Ch.11(2 462 MHz) RU 8**



**BW20M Ch.12(2 467 MHz) RU 0**



**BW20M Ch.13(2 472 MHz) RU 0**





### 9.3 OUTPUT POWER

**Power Level Setting**

802.11ax Mode	Frequency [MHz]	Channel No.	26 T	52T	106T	242 T	SU
Low	2 412	1	13	13	13	13.5	13.5
	2 417	2	15	15	15	15	15
Mid	2 437	6	15	15	15	15	15
	2 457	10	15	15	15	15	15
High	2 462	11	13	13	13	13.5	13.5
	2 467	12	11	11	11	11	11
	2 472	13	6	6	6	7	7

**Peak Power**

1. Power Meter offset Loss = Attenuator loss(20 dB) + Cable loss

BW	Frequency [MHz]	Channel No.	RU Index	Total Peak Power (dBm)				
				26 T	52 T	106 T	242 T	SU
HE20	2 412	1	Low	19.67	19.49	18.86	-	-
			Mid	19.67	19.27	-	18.19	18.12
			High	20.25	19.84	19.24	-	-
	2 417	2	Low	21.52	21.31	20.74	-	-
			Mid	21.33	21.04	-	19.49	19.51
			High	22.16	21.74	21.13	-	-
	2 437	6	Low	21.19	20.99	20.47	-	-
			Mid	21.07	20.76	-	19.08	19.12
			High	21.37	21.05	20.44	-	-
	2 457	10	Low	22.39	22.22	21.45	-	-
			Mid	21.54	21.48	-	19.65	19.59
			High	21.69	21.08	20.80	-	-
	2 462	11	Low	21.01	20.77	19.92	-	-
			Mid	20.00	20.05	-	18.74	18.62
			High	19.85	19.68	19.38	-	-
	2 467	12	Low	18.22	17.43	17.05	-	-
			Mid	17.39	16.88	-	15.96	15.79
			High	17.51	16.71	16.92	-	-
	2 472	13	Low	12.66	11.88	11.26	-	-
			Mid	11.96	11.37	-	10.34	10.37
			High	11.97	11.61	10.50	-	-

# Limit : 30 dBm

**Average Power**

1. Power Meter offset Loss = Attenuator loss(20 dB) + Cable loss

BW	Frequency [MHz]	Channel No.	RU Index	Total Average Power (dBm)				
				26 T	52 T	106 T	242 T	SU
HE20	2 412	1	Low	10.68	10.67	10.73	-	-
			Mid	10.79	10.78	-	11.50	11.45
			High	11.69	11.51	11.23	-	-
	2 417	2	Low	12.58	12.50	12.50	-	-
			Mid	12.50	12.41	-	12.83	12.80
			High	13.56	13.34	13.14	-	-
	2 437	6	Low	12.28	12.27	12.29	-	-
			Mid	12.35	12.31	-	12.67	12.60
			High	12.62	12.66	12.57	-	-
	2 457	10	Low	13.94	13.77	13.57	-	-
			Mid	12.81	13.24	-	13.02	13.03
			High	12.37	12.38	12.49	-	-
	2 462	11	Low	12.51	12.26	11.97	-	-
			Mid	11.17	11.63	-	12.09	12.00
			High	11.03	10.96	11.00	-	-
	2 467	12	Low	9.84	9.36	9.38	-	-
			Mid	8.81	8.79	-	9.12	9.08
			High	8.82	8.50	8.15	-	-
	2 472	13	Low	4.28	3.77	3.52	-	-
			Mid	3.23	3.28	-	3.65	3.65
			High	3.31	3.50	2.51	-	-

# Limit : 30 dBm

### 9.4 POWER SPECTRAL DENSITY

**Note :**

1. Spectrum Measured Levels are not plot data.

The PSD results in plot is already including the actual values of loss for the attenuator and cable combination.

2. Spectrum offset Loss = Attenuator loss(20 dB) + Cable loss

3. Total PSD = Measured Level + Duty Cycle Factor

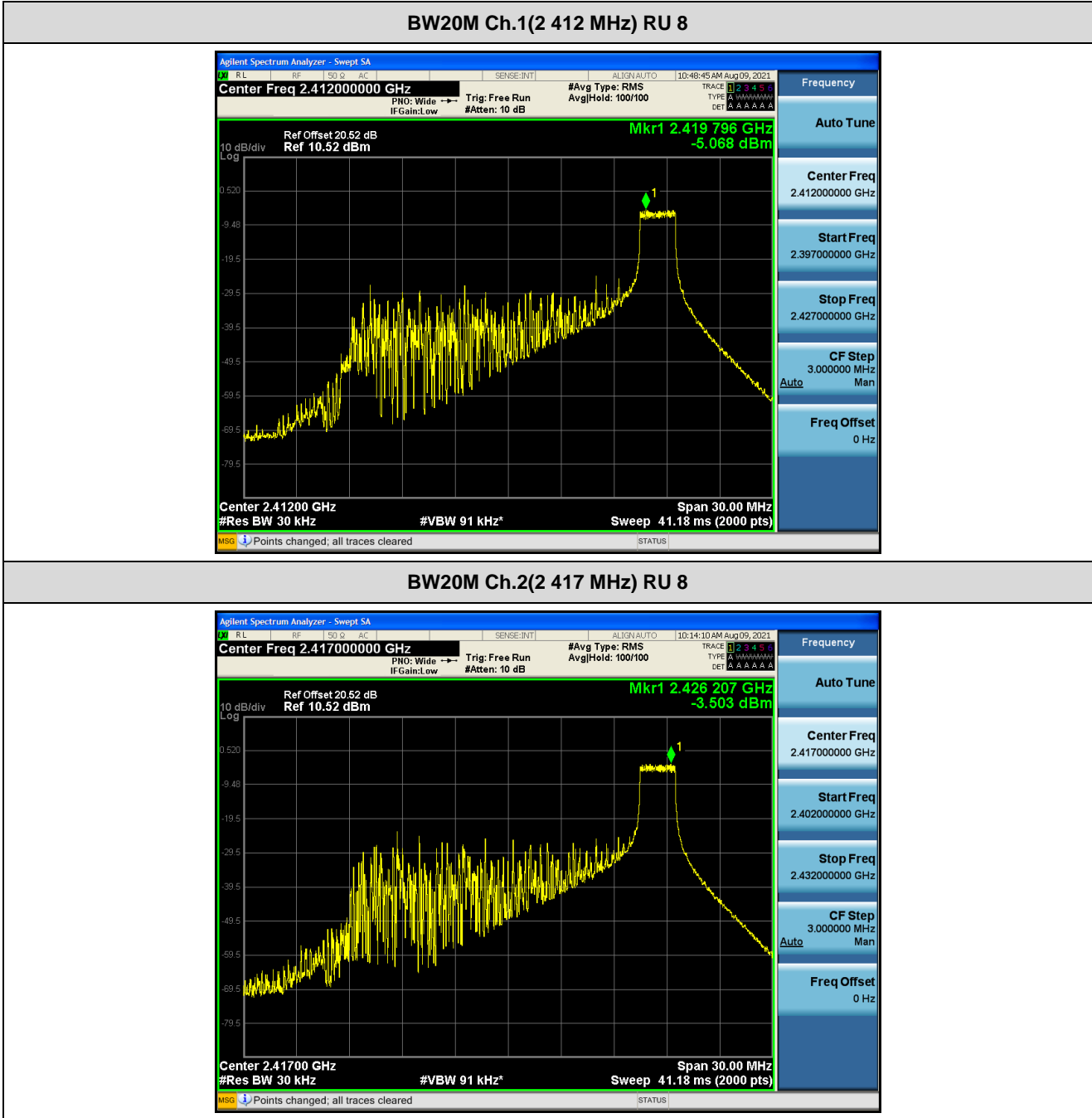
BW	Frequency [MHz]	Channel No.	RU Index	Total PSD (dBm)				
				26 T	52 T	106 T	242 T	SU
HE20	2 412	1	Low	-5.956	-8.956	-11.58	-	-
			Mid	-5.896	-9.005	-	-14.24	-14.14
			High	-5.049	-8.204	-11.07	-	-
	2 417	2	Low	-4.438	-7.341	-10.41	-	-
			Mid	-3.753	-7.467	-	-12.59	-12.32
			High	-3.484	-6.598	-9.26	-	-
	2 437	6	Low	-4.478	-7.515	-10.26	-	-
			Mid	-4.566	-7.578	-	-13.22	-12.79
			High	-4.204	-7.250	-9.92	-	-
	2 457	10	Low	-3.048	-5.817	-8.78	-	-
			Mid	-4.010	-6.523	-	-12.32	-12.50
			High	-4.437	-7.475	-10.11	-	-
	2 462	11	Low	-4.101	-7.092	-10.11	-	-
			Mid	-5.326	-7.691	-	-13.50	-13.63
			High	-5.811	-8.693	-11.47	-	-
	2 467	12	Low	-7.506	-10.50	-13.28	-	-
			Mid	-8.577	-10.86	-	-16.76	-16.50
			High	-8.267	-11.31	-13.70	-	-
	2 472	13	Low	-12.88	-16.02	-19.30	-	-
			Mid	-14.02	-16.65	-	-21.81	-22.01
			High	-13.95	-16.82	-20.17	-	-

# Limit : 8 dBm / 3 kHz

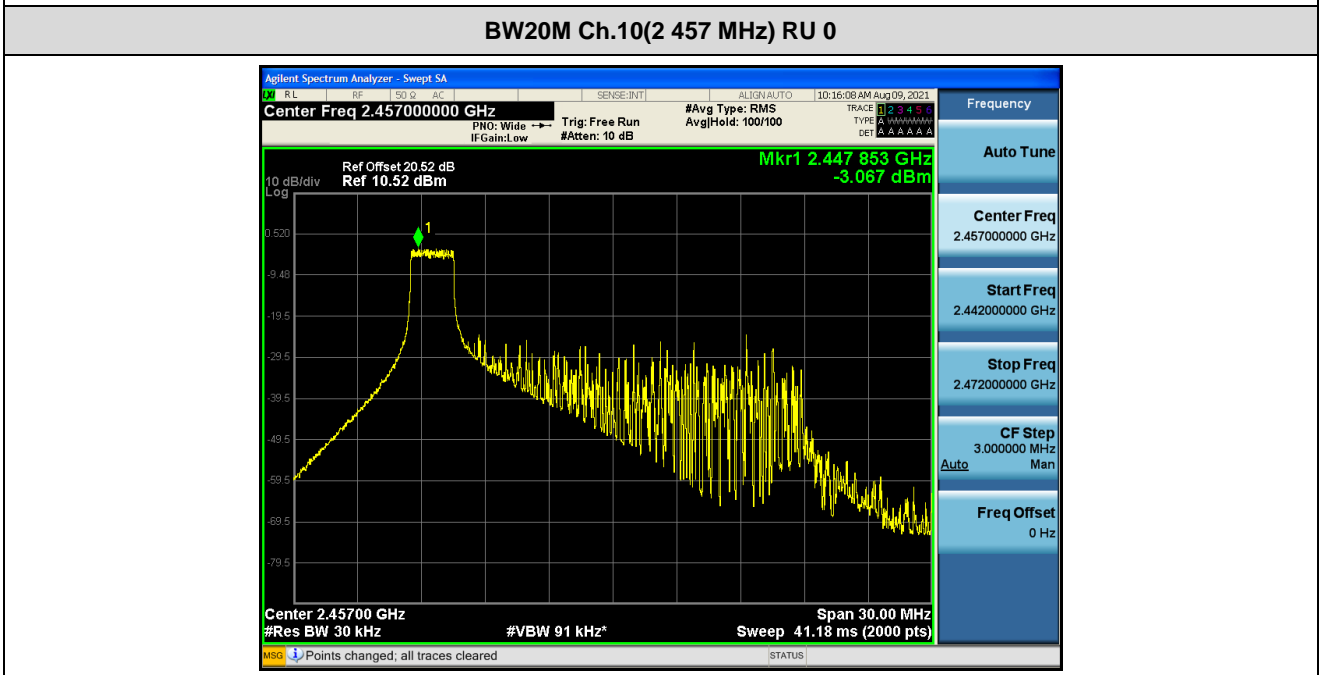
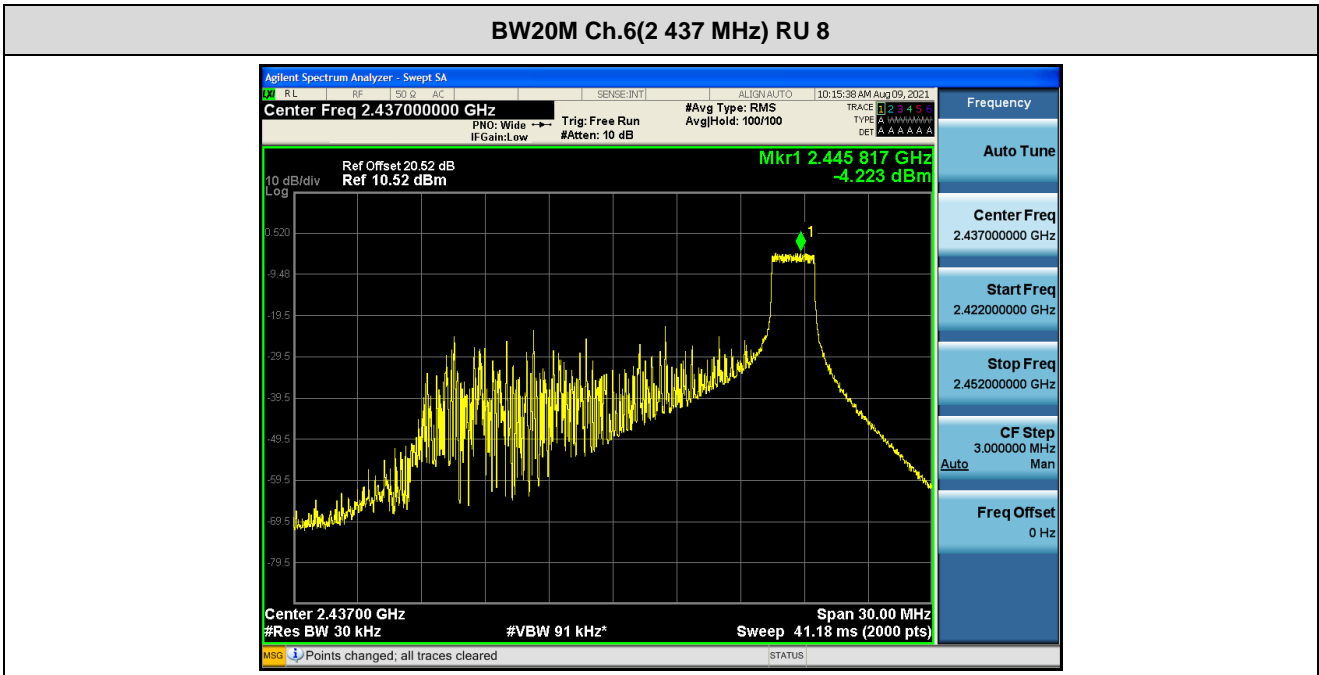
**Test Plots**

**Note:**

1. In order to simplify the report, attached plots were only the worst case PSD channel.
2. Total PSD(dBm) = Measured Level + Duty Cycle Factor



Frequency [MHz]	Measured PSD (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
2 412	-5.068	0.019	-5.049
2 417	-3.503	0.019	-3.484

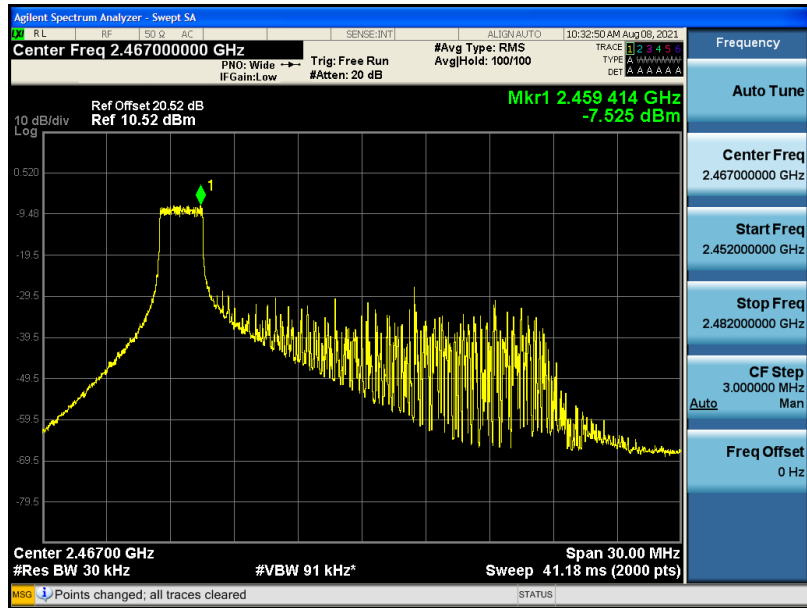


Frequency [MHz]	Measured PSD (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
2 437	-4.223	0.019	-4.204
2 457	-3.067	0.019	-3.048

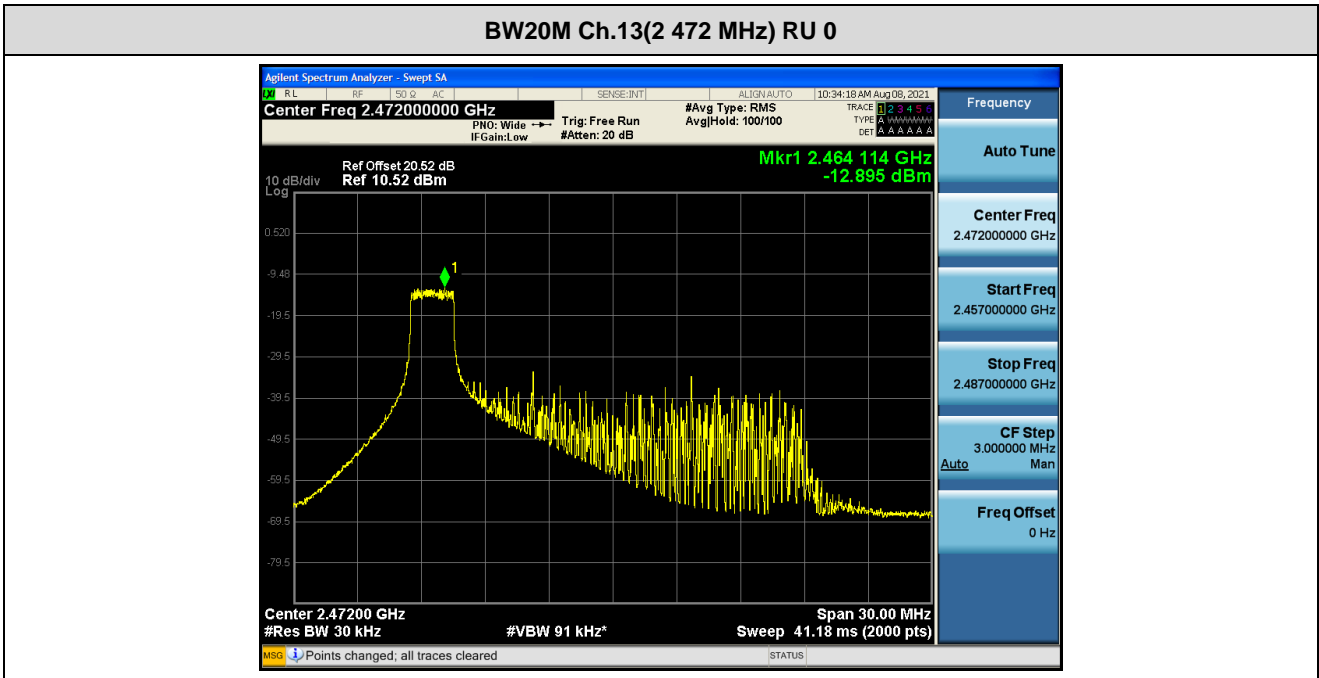
**BW20M Ch.11(2 462 MHz) RU 0**



**BW20M Ch.12(2 467 MHz) RU 0**



Frequency [MHz]	Measured PSD (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
2 462	-4.120	0.019	-4.101
2 467	-7.525	0.019	-7.506



Frequency [MHz]	Measured PSD (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
2 472	-12.895	0.019	-12.876



**9.5 BAND EDGE/ CONDUCTED SPURIOUS EMISSIONS**

**Band Edge**

BW	Frequency [MHz]	Channel No.	RU Index	Measured Position	Result (dB)		
					26 T	52 T	106 T
HE20	2412	1	Low	Lowest Bandedge	35.025	34.457	32.642
	2417	2	Low	Lowest Bandedge	44.970	40.587	36.894
	2457	10	High	Highest Bandedge	55.060	51.977	46.782
	2462	11	High	Highest Bandedge	53.918	53.356	55.860
	2467	12	High	Highest Bandedge	55.622	56.001	42.265
	2472	13	High	Highest Bandedge	31.717	31.795	33.566

# Limit : 30 dBc

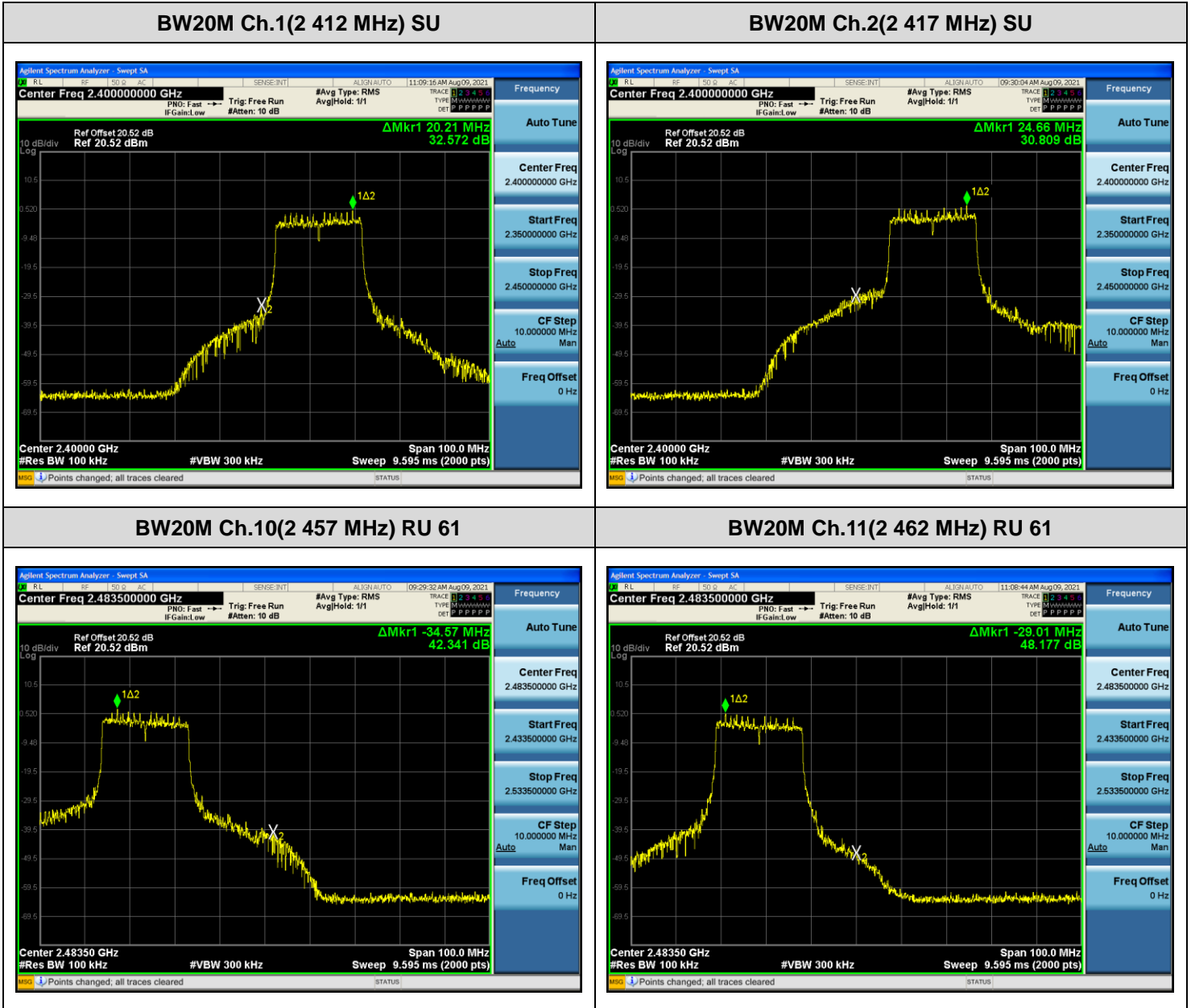
BW	Frequency [MHz]	Channel No.	RU Index	Measured Position	Result (dB)	
					242 T	SU
HE20	2412	1	Mid	Lowest Bandedge	32.836	32.572
	2417	2		Lowest Bandedge	35.946	30.809
	2457	10		Highest Bandedge	42.341	44.924
	2462	11		Highest Bandedge	48.177	48.191
	2467	12		Highest Bandedge	41.076	41.213
	2472	13		Highest Bandedge	34.865	35.007

# Limit : 30 dBc

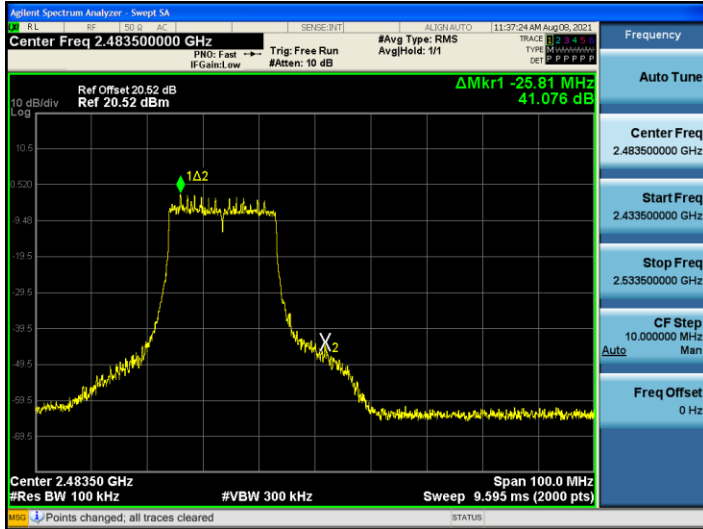
**Test Plots**

**Note:**

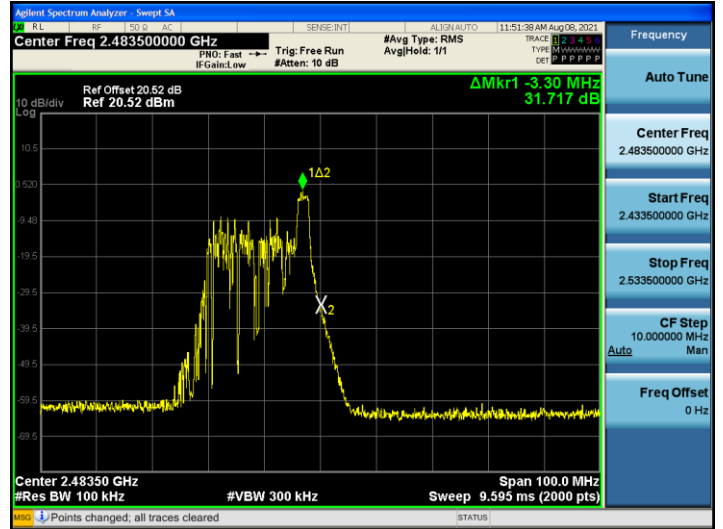
In order to simplify the report, attached plots were only the worst case.



**BW20M Ch.12(2 467 MHz) RU 61**



**BW20M Ch.13(2 472 MHz) RU 8**



**Conducted Spurious Emissions**

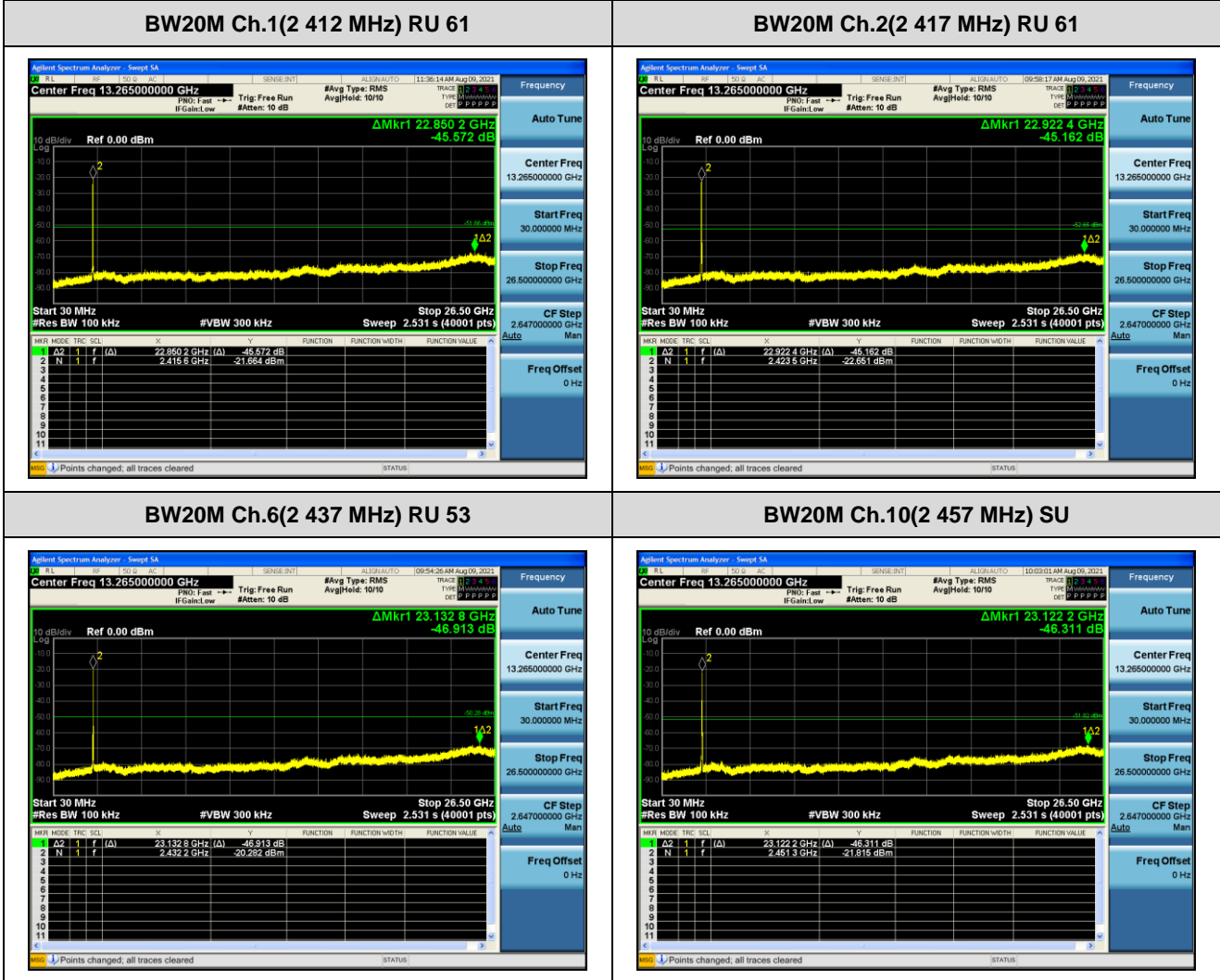
BW	Frequency [MHz]	Channel No.	RU Index	Result (dBm)				
				26 T	52 T	106 T	242 T	SU
HE20	2 412	1	Low	50.900	49.297	46.607	-	-
			Mid	52.301	48.890	-	45.572	45.597
			High	52.415	50.142	47.874	-	-
	2 417	2	Low	53.799	50.322	48.125	-	-
			Mid	54.003	51.417	-	45.162	47.392
			High	53.499	51.837	49.976	-	-
	2 437	6	Low	51.714	50.129	46.913	-	-
			Mid	51.497	50.609	-	47.584	47.956
			High	52.844	51.275	46.915	-	-
	2 457	10	Low	54.293	52.744	48.734	-	-
			Mid	55.246	50.921	-	46.488	46.311
			High	54.016	50.302	49.047	-	-
	2 462	11	Low	54.649	49.380	48.842	-	-
			Mid	53.901	51.623	-	47.165	46.022
			High	52.215	50.067	47.152	-	-
	2 467	12	Low	50.788	47.733	44.971	-	-
			Mid	48.773	46.744	-	41.329	40.847
			High	48.310	46.892	45.281	-	-
2 472	13	Low	44.114	41.595	39.062	-	-	
		Mid	42.215	41.555	-	36.513	38.789	
		High	43.914	41.643	39.125	-	-	

# Limit : 30 dBc

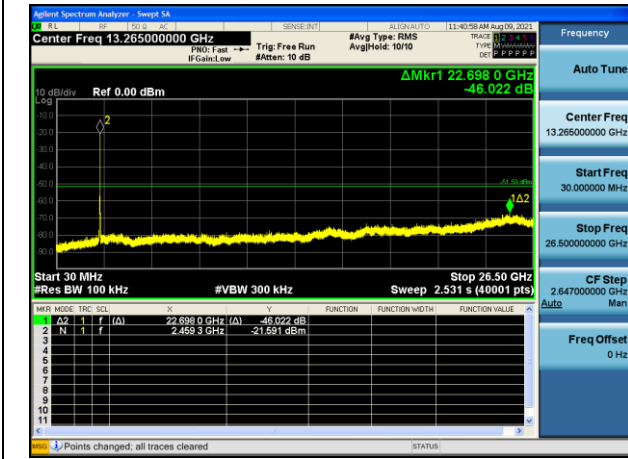
**Test Plots**

**Note:**

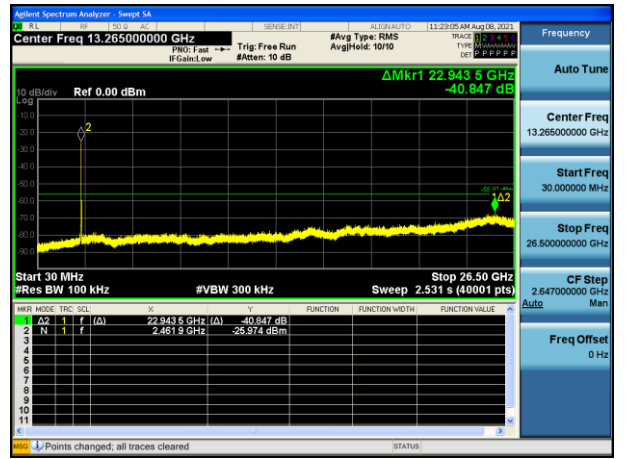
In order to simplify the report, attached plots were only the worst case.



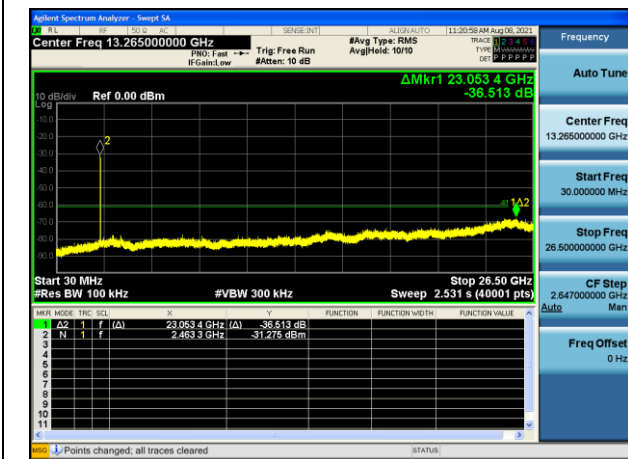
**BW20M Ch.11(2 462 MHz) SU**



**BW20M Ch.12(2 467 MHz) SU**



**BW20M Ch.13(2 472 MHz) RU 61**



**9.6 RADIATED SPURIOUS EMISSIONS**

**Frequency Range : 9 kHz – 30 MHz**

Frequency	Measured Level	A.F+C.L+D.F	Ant. POL	Total	Limit	Margin
[MHz]	[dBµV/m]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]
No Critical peaks found						

**Note:**

1. The measured level of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
2. Distance extrapolation factor =  $40\log(\text{specific distance} / \text{test distance})$  (dB)
3. Limit line = specific Limits (dBµV) + Distance extrapolation factor

**Frequency Range : Below 1 GHz**

Frequency	Measured Level	A.F+C.L	Ant. POL	Total	Limit	Margin
[MHz]	[dBµV/m]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]
No Critical peaks found						

**Note:**

1. Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Quasi peak detector mode.

**Frequency Range : Above 1 GHz**

**1. 26 Tone**

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2412
Channel No.	01 Ch
RU offset	4

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F.+C.L.-A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4824	40.89	0.00	5.27	V	46.16	73.98	27.82	PK
4824	28.64	0.02	5.27	V	33.93	53.98	20.05	AV
7236	37.26	0.00	12.86	V	50.12	73.98	23.86	PK
7236	25.58	0.02	12.86	V	38.46	53.98	15.52	AV
4824	45.33	0.00	5.27	H	50.60	73.98	23.38	PK
4824	30.07	0.02	5.27	H	35.36	53.98	18.62	AV
7236	38.02	0.00	12.86	H	50.88	73.98	23.10	PK
7236	25.68	0.02	12.86	H	38.56	53.98	15.42	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2437
Channel No.	06 Ch
RU offset	4

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F.+C.L.-A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4874	45.02	0.00	5.43	V	50.45	73.98	23.53	PK
4874	30.13	0.02	5.43	V	35.58	53.98	18.40	AV
7311	37.38	0.00	12.90	V	50.28	73.98	23.70	PK
7311	25.24	0.02	12.90	V	38.16	53.98	15.82	AV
4874	45.81	0.00	5.43	H	51.24	73.98	22.74	PK
4874	30.47	0.02	5.43	H	35.92	53.98	18.06	AV
7311	37.83	0.00	12.90	H	50.73	73.98	23.25	PK
7311	25.57	0.02	12.90	H	38.49	53.98	15.49	AV



Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2462  
 Channel No.: 11 Ch  
 RU offset: 4

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F.+C.L.-A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4924	42.16	0.00	5.94	V	48.10	73.98	25.88	PK
4924	29.24	0.02	5.94	V	35.20	53.98	18.78	AV
7386	38.01	0.00	12.66	V	50.67	73.98	23.31	PK
7386	25.65	0.02	12.66	V	38.33	53.98	15.65	AV
4924	42.39	0.00	5.94	H	48.33	73.98	25.65	PK
4924	29.47	0.02	5.94	H	35.43	53.98	18.55	AV
7386	38.20	0.00	12.66	H	50.86	73.98	23.12	PK
7386	25.71	0.02	12.66	H	38.39	53.98	15.59	AV

**2. 52 Tone**

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2412
Channel No.	01 Ch
RU offset	38

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F.+C.L.-A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4824	43.97	0.00	5.27	V	49.24	73.98	24.74	PK
4824	29.77	0.02	5.27	V	35.06	53.98	18.92	AV
7236	37.06	0.00	12.86	V	49.92	73.98	24.06	PK
7236	25.49	0.02	12.86	V	38.37	53.98	15.61	AV
4824	44.16	0.00	5.27	H	49.43	73.98	24.55	PK
4824	29.86	0.02	5.27	H	35.15	53.98	18.83	AV
7236	37.33	0.00	12.86	H	50.19	73.98	23.79	PK
7236	25.51	0.02	12.86	H	38.39	53.98	15.59	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2437
Channel No.	06 Ch
RU offset	38

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F.+C.L.-A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4874	43.52	0.00	5.43	V	48.95	73.98	25.03	PK
4874	29.87	0.02	5.43	V	35.32	53.98	18.66	AV
7311	37.26	0.00	12.90	V	50.16	73.98	23.82	PK
7311	25.48	0.02	12.90	V	38.40	53.98	15.58	AV
4874	43.93	0.00	5.43	H	49.36	73.98	24.62	PK
4874	29.93	0.02	5.43	H	35.38	53.98	18.60	AV
7311	37.39	0.00	12.90	H	50.29	73.98	23.69	PK
7311	25.52	0.02	12.90	H	38.44	53.98	15.54	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2462
Channel No.	11 Ch
RU offset	38

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F.+C.L.-A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4924	41.22	0.00	5.94	V	47.16	73.98	26.82	PK
4924	29.03	0.02	5.94	V	34.99	53.98	18.99	AV
7386	38.28	0.00	12.66	V	50.94	73.98	23.04	PK
7386	25.78	0.02	12.66	V	38.46	53.98	15.52	AV
4924	42.07	0.00	5.94	H	48.01	73.98	25.97	PK
4924	29.15	0.02	5.94	H	35.11	53.98	18.87	AV
7386	38.57	0.00	12.66	H	51.23	73.98	22.75	PK
7386	25.93	0.02	12.66	H	38.61	53.98	15.37	AV

**3. 106 Tone**

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2412
Channel No.	01 Ch
RU offset	53

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F.+C.L.-A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4824	42.92	0.00	5.27	V	48.19	73.98	25.79	PK
4824	29.22	0.04	5.27	V	34.53	53.98	19.45	AV
7236	37.64	0.00	12.86	V	50.50	73.98	23.48	PK
7236	25.51	0.04	12.86	V	38.41	53.98	15.57	AV
4824	43.77	0.00	5.27	H	49.04	73.98	24.94	PK
4824	29.25	0.04	5.27	H	34.56	53.98	19.42	AV
7236	38.06	0.00	12.86	H	50.92	73.98	23.06	PK
7236	25.68	0.04	12.86	H	38.58	53.98	15.40	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2437
Channel No.	06 Ch
RU offset	53

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F.+C.L.-A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4874	41.79	0.00	5.43	V	47.22	73.98	26.76	PK
4874	29.14	0.04	5.43	V	34.61	53.98	19.37	AV
7311	37.28	0.00	12.90	V	50.18	73.98	23.80	PK
7311	25.41	0.04	12.90	V	38.35	53.98	15.63	AV
4874	41.98	0.00	5.43	H	47.41	73.98	26.57	PK
4874	29.30	0.04	5.43	H	34.77	53.98	19.21	AV
7311	37.53	0.00	12.90	H	50.43	73.98	23.55	PK
7311	25.57	0.04	12.90	H	38.51	53.98	15.47	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2462
Channel No.	11 Ch
RU offset	53

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F.+C.L.-A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4924	41.02	0.00	5.94	V	46.96	73.98	27.02	PK
4924	28.75	0.04	5.94	V	34.73	53.98	19.25	AV
7386	37.98	0.00	12.66	V	50.64	73.98	23.34	PK
7386	25.80	0.04	12.66	V	38.50	53.98	15.48	AV
4924	41.50	0.00	5.94	H	47.44	73.98	26.54	PK
4924	28.94	0.04	5.94	H	34.92	53.98	19.06	AV
7386	38.59	0.00	12.66	H	51.25	73.98	22.73	PK
7386	25.91	0.04	12.66	H	38.61	53.98	15.37	AV

**2. 242 Tone**

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2412
Channel No.	01 Ch
RU offset	61

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F.+C.L.-A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4824	40.22	0.00	5.27	V	45.49	73.98	28.49	PK
4824	29.06	0.07	5.27	V	34.40	53.98	19.58	AV
7236	37.02	0.00	12.86	V	49.88	73.98	24.10	PK
7236	25.48	0.07	12.86	V	38.41	53.98	15.57	AV
4824	41.30	0.00	5.27	H	46.57	73.98	27.41	PK
4824	29.11	0.07	5.27	H	34.45	53.98	19.53	AV
7236	37.63	0.00	12.86	H	50.49	73.98	23.49	PK
7236	25.53	0.07	12.86	H	38.46	53.98	15.52	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2437
Channel No.	06 Ch
RU offset	61

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F.+C.L.-A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4874	40.91	0.00	5.43	V	46.34	73.98	27.64	PK
4874	28.66	0.07	5.43	V	34.16	53.98	19.82	AV
7311	37.25	0.00	12.90	V	50.15	73.98	23.83	PK
7311	25.43	0.07	12.90	V	38.40	53.98	15.58	AV
4874	41.03	0.00	5.43	H	46.46	73.98	27.52	PK
4874	28.78	0.07	5.43	H	34.28	53.98	19.70	AV
7311	38.45	0.00	12.90	H	51.35	73.98	22.63	PK
7311	25.88	0.07	12.90	H	38.85	53.98	15.13	AV

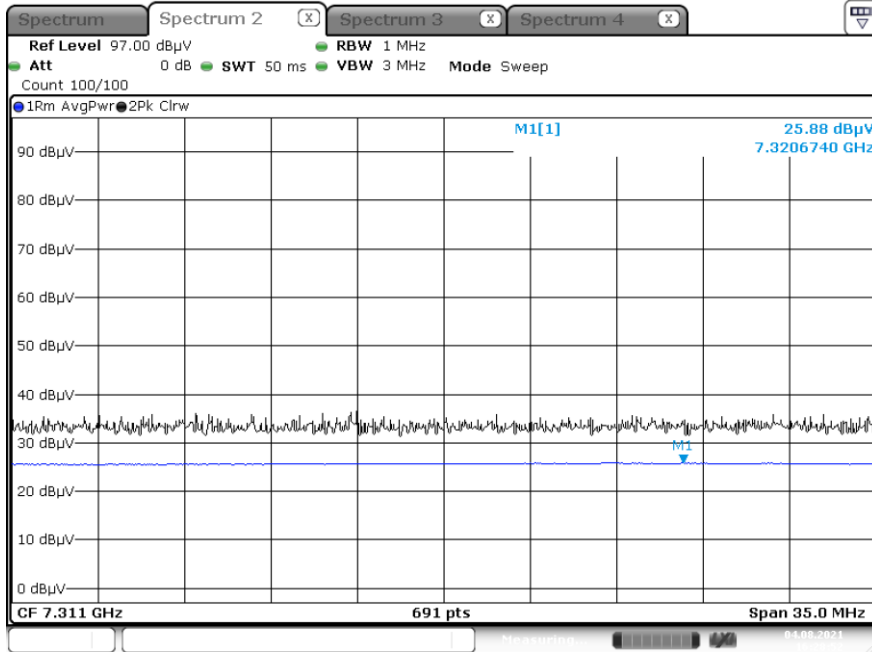
Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2462
Channel No.	11 Ch
RU offset	61

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F.+C.L.-A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4924	40.84	0.00	5.94	V	46.78	73.98	27.20	PK
4924	28.69	0.07	5.94	V	34.70	53.98	19.28	AV
7386	37.97	0.00	12.66	V	50.63	73.98	23.35	PK
7386	25.83	0.07	12.66	V	38.56	53.98	15.42	AV
4924	41.06	0.00	5.94	H	47.00	73.98	26.98	PK
4924	28.88	0.07	5.94	H	34.89	53.98	19.09	AV
7386	38.02	0.00	12.66	H	50.68	73.98	23.30	PK
7386	25.91	0.07	12.66	H	38.64	53.98	15.34	AV

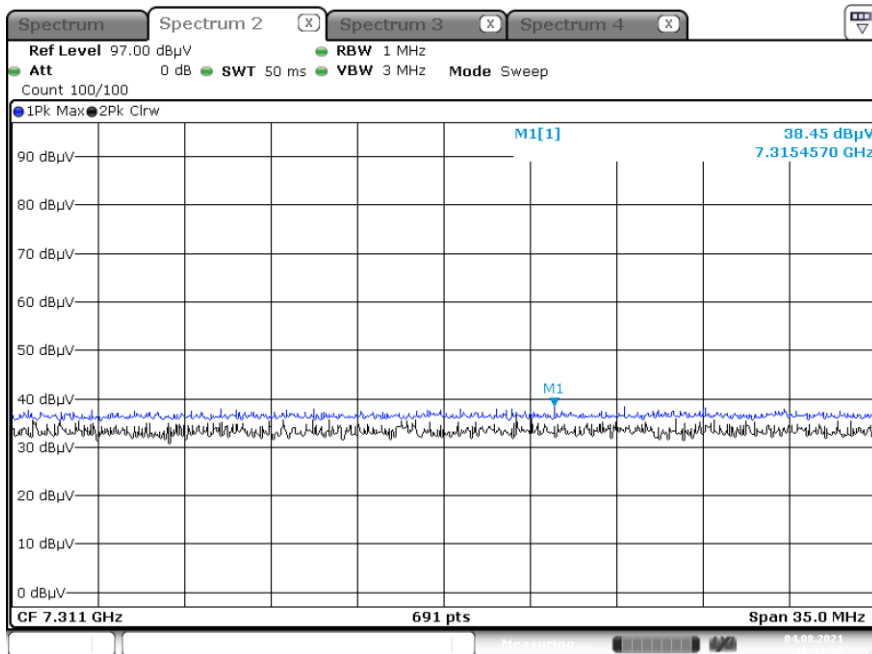
**Test Plots**

**(242 Tone RU 61) – Y-H**

Radiated Spurious Emissions plot – Average result (802.11ax(HE20), Ch.6 3rd Harmonic)



Radiated Spurious Emissions plot – Peak result (802.11ax(HE20), Ch.6 3rd Harmonic)



**Note:**

Plot of worst case are only reported.



## 9.7 RADIATED RESTRICTED BAND EDGES

### 1. 26 Tone

Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2 412 MHz, 2 462 MHz  
 Channel No. 01 Ch, 11 Ch

Frequency [MHz]	Measured Level [dB $\mu$ V]	Duty Cycle Factor	A.F+C.L-A.G+D.F+ATT [dB]	ANT. POL [H/V]	Total [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Measurement Type
2390.0	57.09	0.00	2.99	H	60.08	73.98	13.90	PK
2390.0	38.88	0.02	2.99	H	41.89	53.98	12.09	AV
2390.0	57.47	0.00	2.99	V	60.46	73.98	13.52	PK
2390.0	39.47	0.02	2.99	V	42.48	53.98	11.50	AV
2483.5	55.27	0.00	4.20	H	59.47	73.98	14.51	PK
2483.5	38.54	0.02	4.20	H	42.76	53.98	11.22	AV
2483.5	54.98	0.00	4.20	V	59.18	73.98	14.80	PK
2483.5	38.41	0.02	4.20	V	42.63	53.98	11.35	AV

Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2 417 MHz  
 Channel No. 2 Ch

Frequency [MHz]	Measured Level [dB $\mu$ V]	Duty Cycle Factor	A.F+C.L-A.G+D.F+ATT [dB]	ANT. POL [H/V]	Total [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Measurement Type
2390.0	64.15	0.00	2.99	H	67.14	73.98	6.84	PK
2390.0	39.87	0.02	2.99	H	42.88	53.98	11.10	AV
2390.0	64.64	0.00	2.99	V	67.63	73.98	6.35	PK
2390.0	40.12	0.02	2.99	V	43.13	53.98	10.85	AV

Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2 457 MHz  
 Channel No. 10 Ch

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F+C.L-A.G+D.F+ATT [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	56.89	0.00	4.20	H	61.09	73.98	12.89	PK
2483.5	37.63	0.02	4.20	H	41.85	53.98	12.13	AV
2483.5	57.16	0.00	4.20	V	61.36	73.98	12.62	PK
2483.5	37.81	0.02	4.20	V	42.03	53.98	11.95	AV

Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2 467 MHz  
 Channel No. 12 Ch

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F+C.L-A.G+D.F+ATT [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	56.35	0.00	4.20	H	60.55	73.98	13.43	PK
2483.5	42.05	0.02	4.20	H	46.27	53.98	7.71	AV
2483.5	55.97	0.00	4.20	V	60.17	73.98	13.81	PK
2483.5	41.83	0.02	4.20	V	46.05	53.98	7.93	AV

Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2 472 MHz  
 Channel No. 13 Ch

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F+C.L-A.G+D.F+ATT [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5#(2484)	61.09	0.00	4.20	H	65.29	73.98	8.69	PK
2483.5#(2484)	46.38	0.02	4.20	H	50.60	53.98	3.38	AV
2483.5#(2485)	55.37	0.00	4.20	H	59.57	73.98	14.41	PK
2483.5#(2485)	41.03	0.02	4.20	H	45.25	53.98	8.73	AV
2485.5~2500	62.50	0.00	4.20	H	66.70	73.98	7.28	PK
2485.5~2500	39.53	0.02	4.20	H	43.75	53.98	10.23	AV

# Note : integration method Used (ANSI C63.10 Section11.13.3)

**2. 52 Tone**

Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2 412 MHz, 2 462 MHz  
 Channel No. 01 Ch, 11 Ch

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F+C.L-A.G+D.F+ATT [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2390.0	56.72	0.00	2.99	H	59.71	73.98	14.27	PK
2390.0	38.36	0.02	2.99	H	41.37	53.98	12.61	AV
2390.0	57.00	0.00	2.99	V	59.99	73.98	13.99	PK
2390.0	38.87	0.02	2.99	V	41.88	53.98	12.10	AV
2483.5	50.72	0.00	4.20	H	54.92	73.98	19.06	PK
2483.5	37.53	0.02	4.20	H	41.75	53.98	12.23	AV
2483.5	50.34	0.00	4.20	V	54.54	73.98	19.44	PK
2483.5	37.39	0.02	4.20	V	41.61	53.98	12.37	AV

Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2 417 MHz  
 Channel No. 2 Ch

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F+C.L-A.G+D.F+ATT [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2390.0	65.18	0.00	2.99	H	68.17	73.98	5.81	PK
2390.0	38.46	0.02	2.99	H	41.47	53.98	12.51	AV
2390.0	65.40	0.00	2.99	V	68.39	73.98	5.59	PK
2390.0	38.69	0.02	2.99	V	41.70	53.98	12.28	AV

Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2 457 MHz  
 Channel No. 10 Ch

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F+C.L-A.G+D.F+ATT [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	51.67	0.00	4.20	H	55.87	73.98	18.11	PK
2483.5	37.13	0.02	4.20	H	41.35	53.98	12.63	AV
2483.5	51.81	0.00	4.20	V	56.01	73.98	17.97	PK
2483.5	37.41	0.02	4.20	V	41.63	53.98	12.35	AV

Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2 467 MHz  
 Channel No. 12 Ch

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F+C.L-A.G+D.F+ATT [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	52.69	0.00	4.20	H	56.89	73.98	17.09	PK
2483.5	38.88	0.02	4.20	H	43.10	53.98	10.88	AV
2483.5	52.24	0.00	4.20	V	56.44	73.98	17.54	PK
2483.5	38.53	0.02	4.20	V	42.75	53.98	11.23	AV

Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2 472 MHz  
 Channel No. 13 Ch

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F+C.L-A.G+D.F+ATT [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5#(2484)	57.69	0.00	4.20	H	61.89	73.98	12.09	PK
2483.5#(2484)	44.70	0.02	4.20	H	48.92	53.98	5.06	AV
2483.5#(2485)	52.39	0.00	4.20	H	56.59	73.98	17.39	PK
2483.5#(2485)	40.13	0.02	4.20	H	44.35	53.98	9.63	AV
2485.5~2500	59.34	0.00	4.20	H	63.54	73.98	10.44	PK
2485.5~2500	39.05	0.02	4.20	H	43.27	53.98	10.71	AV

# Note : integration method Used (ANSI C63.10 Section11.13.3)

**3. 106 Tone**

Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2 412 MHz, 2 462 MHz  
 Channel No.: 01 Ch, 11 Ch

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F+C.L- A.G+D.F+ATT [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2390.0	64.45	0.00	2.99	H	67.44	73.98	6.54	PK
2390.0	38.98	0.04	2.99	H	42.01	53.98	11.97	AV
2390.0	64.84	0.00	2.99	V	67.83	73.98	6.15	PK
2390.0	39.24	0.04	2.99	V	42.27	53.98	11.71	AV
2483.5	58.83	0.00	4.20	H	63.03	73.98	10.95	PK
2483.5	37.67	0.04	4.20	H	41.91	53.98	12.07	AV
2483.5	58.60	0.00	4.20	V	62.80	73.98	11.18	PK
2483.5	37.39	0.04	4.20	V	41.63	53.98	12.35	AV

Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2 417 MHz  
 Channel No.: 2 Ch

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F+C.L- A.G+D.F+ATT [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2390.0	61.89	0.00	2.99	H	64.88	73.98	9.10	PK
2390.0	39.83	0.04	2.99	H	42.86	53.98	11.12	AV
2390.0	62.14	0.00	2.99	V	65.13	73.98	8.85	PK
2390.0	40.16	0.04	2.99	V	43.19	53.98	10.79	AV

Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2 457 MHz  
 Channel No. 10 Ch

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F+C.L-A.G+D.F+ATT [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	63.46	0.00	4.20	H	67.66	73.98	6.32	PK
2483.5	36.10	0.04	4.20	H	40.34	53.98	13.64	AV
2483.5	63.59	0.00	4.20	V	67.79	73.98	6.19	PK
2483.5	36.31	0.04	4.20	V	40.55	53.98	13.43	AV

Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2 467 MHz  
 Channel No. 12 Ch

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F+C.L-A.G+D.F+ATT [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	60.84	0.00	4.20	H	65.04	73.98	8.94	PK
2483.5	40.25	0.04	4.20	H	44.49	53.98	9.49	AV
2483.5	60.38	0.00	4.20	V	64.58	73.98	9.40	PK
2483.5	39.97	0.04	4.20	V	44.21	53.98	9.77	AV

Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2 472 MHz  
 Channel No. 13 Ch

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F+C.L-A.G+D.F+ATT [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5#(2484)	55.60	0.00	4.20	H	59.80	73.98	14.18	PK
2483.5#(2484)	43.50	0.02	4.20	H	47.72	53.98	6.26	AV
2483.5#(2485)	51.07	0.00	4.20	H	55.27	73.98	18.71	PK
2483.5#(2485)	39.32	0.02	4.20	H	43.54	53.98	10.44	AV
2485.5~2500	57.26	0.00	4.20	H	61.46	73.98	12.52	PK
2485.5~2500	38.24	0.02	4.20	H	42.46	53.98	11.52	AV

# Note : integration method Used (ANSI C63.10 Section11.13.3)

**4. 242 Tone**

Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2 462 MHz  
 Channel No.: 01 Ch, 11 Ch

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F+C.L-A.G+D.F+ATT [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2390.0	64.87	0.00	2.99	H	67.86	73.98	6.12	PK
2390.0	42.28	0.07	2.99	H	45.34	53.98	8.64	AV
2390.0	65.19	0.00	2.99	V	68.18	73.98	5.80	PK
2390.0	42.45	0.07	2.99	V	45.51	53.98	8.47	AV
2483.5	58.81	0.00	4.20	H	63.01	73.98	10.97	PK
2483.5	45.10	0.07	4.20	H	49.37	53.98	4.61	AV
2483.5	59.03	0.00	4.20	V	63.23	73.98	10.75	PK
2483.5	45.01	0.07	4.20	V	49.28	53.98	4.70	AV

Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2 417 MHz  
 Channel No.: 2 Ch

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F+C.L-A.G+D.F+ATT [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2390.0	66.87	0.00	2.99	H	69.86	73.98	4.12	PK
2390.0	47.02	0.07	2.99	H	50.08	53.98	3.90	AV
2390.0	67.12	0.00	2.99	V	70.11	73.98	3.87	PK
2390.0	47.38	0.07	2.99	V	50.44	53.98	3.54	AV

Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2 457 MHz  
 Channel No. 10 Ch

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F+C.L-A.G+D.F+ATT [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	62.18	0.00	4.20	H	66.38	73.98	7.60	PK
2483.5	42.54	0.07	4.20	H	46.81	53.98	7.17	AV
2483.5	62.45	0.00	4.20	V	66.65	73.98	7.33	PK
2483.5	42.78	0.07	4.20	V	47.05	53.98	6.93	AV

Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2 467 MHz  
 Channel No. 12 Ch

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F+C.L-A.G+D.F+ATT [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	61.46	0.00	4.20	H	65.66	73.98	8.32	PK
2483.5	45.02	0.07	4.20	H	49.29	53.98	4.69	AV
2483.5	61.13	0.00	4.20	V	65.33	73.98	8.65	PK
2483.5	44.88	0.07	4.20	V	49.15	53.98	4.83	AV

Operation Mode: 802.11ax(HE20)  
 Transfer MCS Index: 0  
 Operating Frequency: 2 472 MHz  
 Channel No. 13 Ch

Frequency [MHz]	Measured Level [dBμV]	Duty Cycle Factor	A.F+C.L-A.G+D.F+ATT [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5#(2484)	54.32	0.00	4.20	H	58.52	73.98	15.46	PK
2483.5#(2484)	41.50	0.02	4.20	H	45.72	53.98	8.26	AV
2483.5#(2485)	49.64	0.00	4.20	H	53.84	73.98	20.14	PK
2483.5#(2485)	38.15	0.02	4.20	H	42.37	53.98	11.61	AV
2485.5~2500	55.80	0.00	4.20	H	60.00	73.98	13.98	PK
2485.5~2500	37.72	0.02	4.20	H	41.94	53.98	12.04	AV

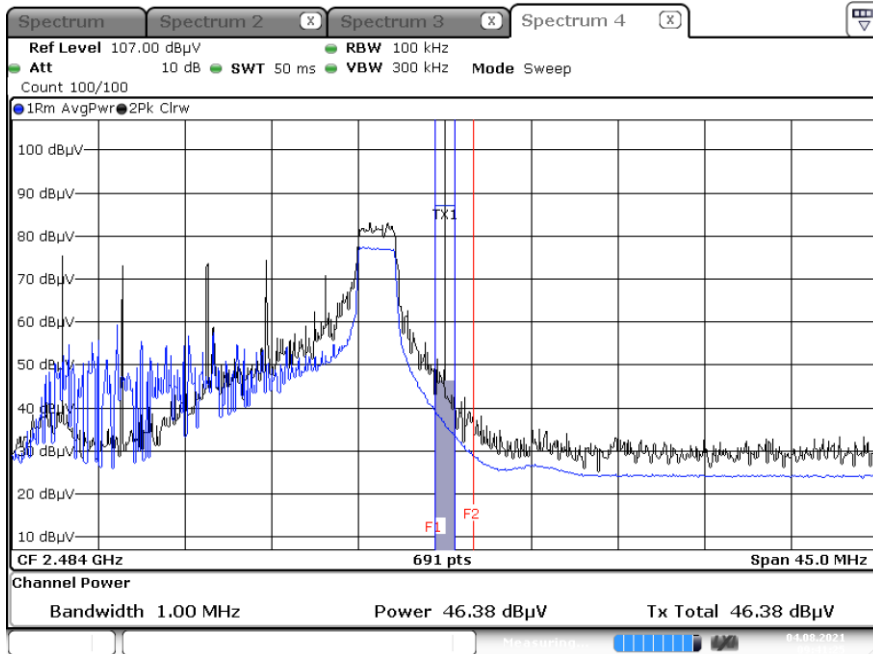
# Note : integration method Used (ANSI C63.10 Section11.13.3)



■ **Test Plots (26 Tone RU 8) X-H**

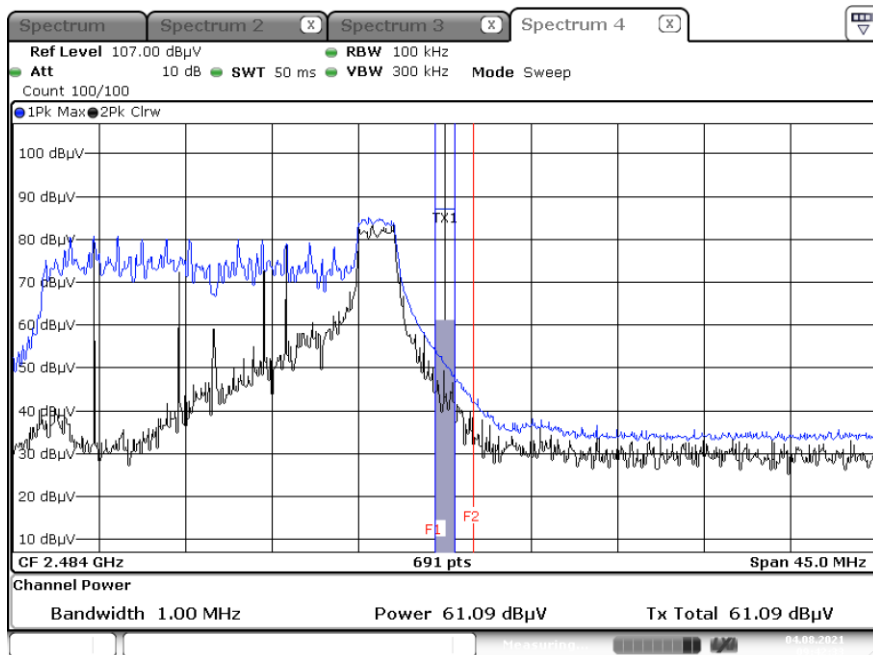
Radiated Restricted Band Edges plot – Average result (802.11ax(HE20) Ch.13)

Integration method Used\_2 483.5 MHz ~ 2 484.0 MHz



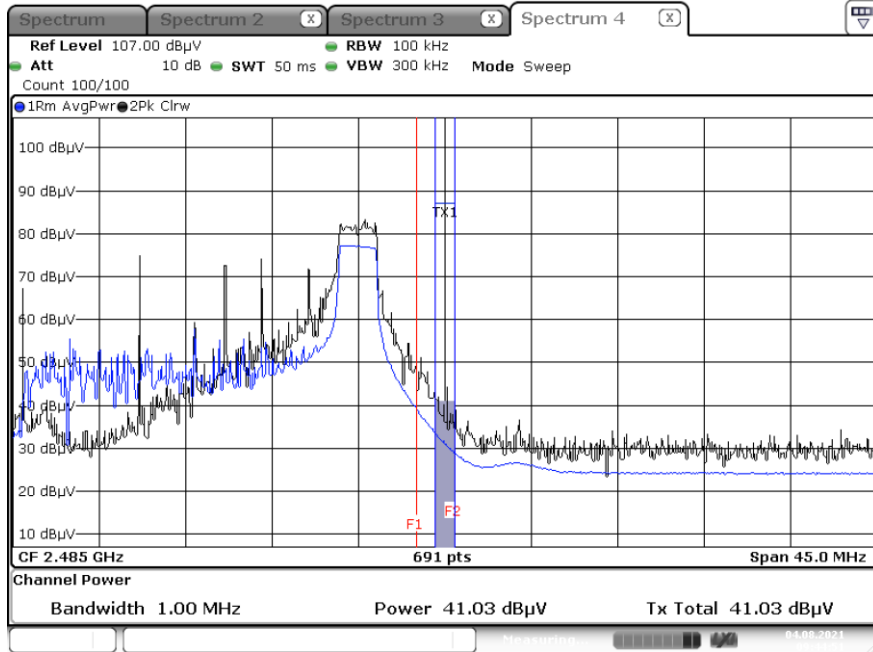
Radiated Restricted Band Edges plot – Peak result (802.11ax(HE20) Ch.13)

Integration method Used\_2 483.5 MHz ~ 2 484.0 MHz



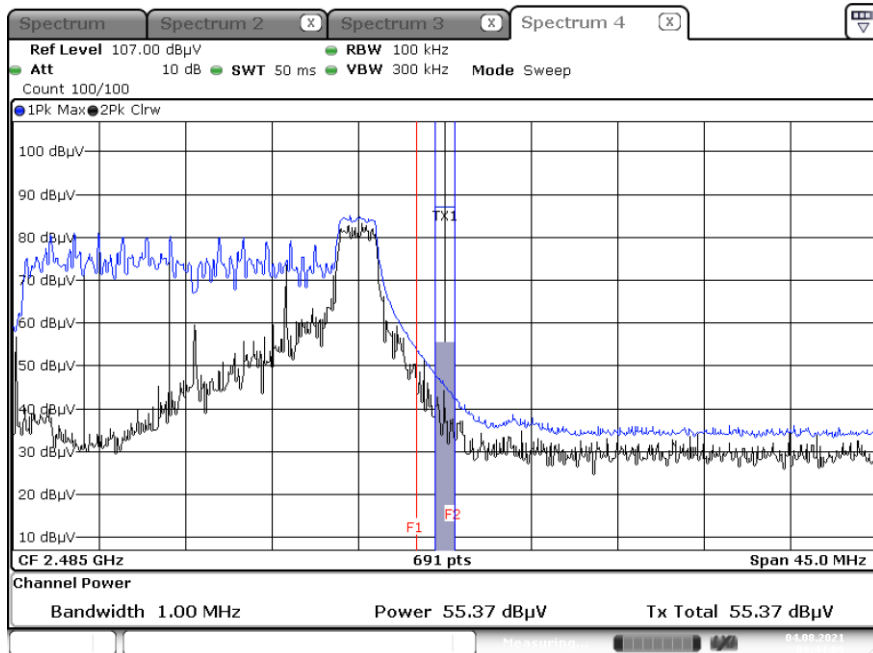
Radiated Restricted Band Edges plot – Average result (802.11ax(HE20) Ch.13)

Integration method Used\_2 483.5 MHz ~ 2 485.0 MHz

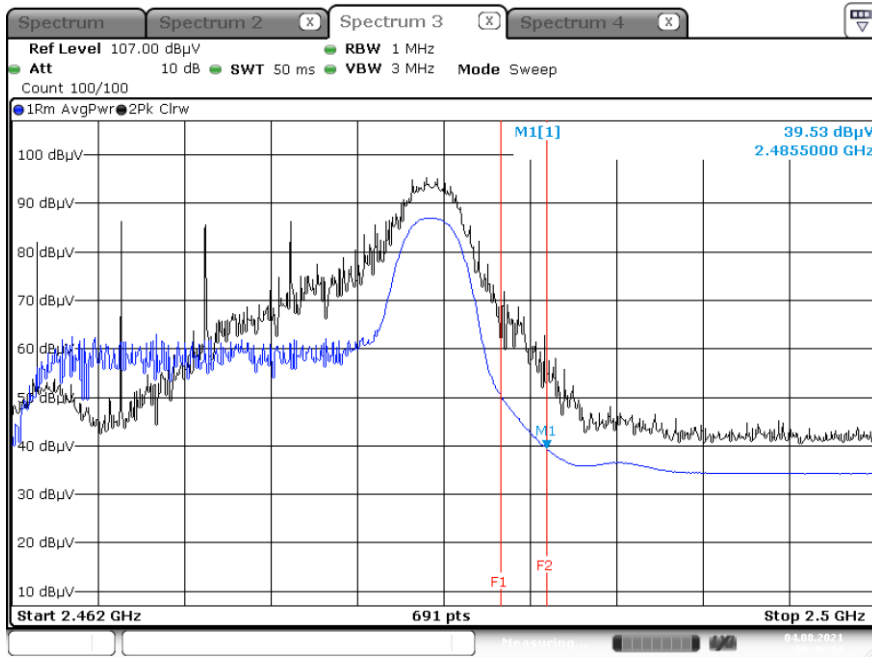


Radiated Restricted Band Edges plot – Peak result (802.11ax(HE20) Ch.13)

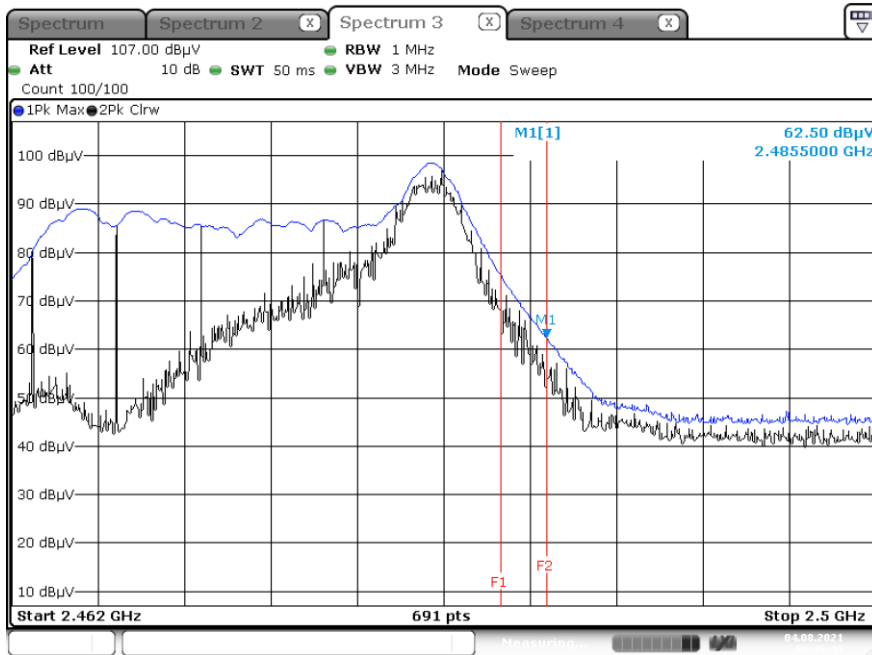
Integration method Used\_2 483.5 MHz ~ 2 485.0 MHz



Radiated Restricted Band Edges plot – Average result (802.11ax(HE20) Ch.13)



Radiated Restricted Band Edges plot – Peak result (802.11ax(HE20) Ch.13)



**Note:**

Plot of worst case are only reported.

## 10. LIST OF TEST EQUIPMENT

### Conducted Test

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Rohde & Schwarz	ENV216 / LISN	09/04/2020	Annual	102245
Rohde & Schwarz	ESR / EMI Test Receiver	06/17/2021	Annual	101910
ESPEC	SU-642 / Temperature Chamber	03/15/2021	Annual	0093008124
Agilent	N9030A / Signal Analyzer	03/09/2021	Annual	MY49432108
Agilent	N1911A / Power Meter	04/08/2021	Annual	MY45100523
Agilent	N1921A / Power Sensor	04/08/2021	Annual	MY57820067
Agilent	87300B / Directional Coupler	11/10/2020	Annual	3116A03621
Hewlett Packard	11667B / Power Splitter	02/09/2021	Annual	10545
HP	E3632A / DC Power Supply	09/16/2020	Annual	MY40004427
HP	8493C / Attenuator(10 dB)(DC-26.5 GHz)	06/18/2021	Annual	07560
HP	8493C / Attenuator(10 dB)(DC-26.5 GHz)	06/28/2021	Annual	08285
Rohde & Schwarz	18N-20dB / Attenuator(20 dB)	03/08/2021	Annual	8
Rohde & Schwarz	EMC32 / Software	N/A	N/A	N/A
HCT CO., LTD.	FCC WLAN&BT&BLE Conducted Test Software v3.0	N/A	N/A	N/A

### Note:

1. Equipment listed above that calibrated during the testing period was set for test after the calibration.
2. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.

**Radiated Test**

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Innco system	CO3000 / Controller(Antenna mast)	N/A	N/A	CO3000-4p
Innco system	MA4640/800-XP-EP / Antenna Position Tower	N/A	N/A	N/A
Audix	EM1000 / Controller	N/A	N/A	060520
Audix	Turn Table	N/A	N/A	N/A
TNM system	FBSM-01B / Amp & Filter Bank Switch Controller	N/A	N/A	TM19050002
Schwarzbeck	Loop Antenna	03/19/2020	Biennial	1513-333
Schwarzbeck	VULB 9168 / Hybrid Antenna	09/04/2020	Biennial	0895
Schwarzbeck	BBHA 9120D / Horn Antenna	05/19/2020	Biennial	02296
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	04/12/2021	Biennial	BBHA9170124
Rohde & Schwarz	FSV(10 Hz ~ 40 GHz) / Spectrum Analyzer	05/14/2021	Annual	101055
Wainwright Instruments	WRCJV2400/2483.5-2370/2520-60/12SS / Band Reject Filter	01/06/2021	Annual	2
Wainwright Instruments	WRCJV12-4900-5100-5900-6100-50SS	06/24/2021	Annual	5
Wainwright Instruments	WRCJV12-4900-5100-5900-6100-50SS	06/24/2021	Annual	6
CERNECX	CBL18265035 / Power Amplifier	12/04/2020	Annual	22966
CERNECX	CBL26405040 / Power Amplifier	03/23/2021	Annual	25956
TNM system	FMSR -05B / HPF(3~18GHz) + LNA1(1~18GHz)	01/20/2021	Annual	F6
TNM system	FMSR -05B / ATT(10dB) + LNA1(1~18GHz)	01/20/2021	Annual	None
TNM system	FMSR -05B / ATT(3dB) + LNA1(1~18GHz)	01/20/2021	Annual	None
TNM system	FMSR -05B / LNA1(1~18GHz)	01/20/2021	Annual	25540
TNM system	FMSR -05B / HPF(7~18GHz) + LNA2(6~18GHz)	01/20/2021	Annual	28550
TNM system	FMSR -05B / Thru(30MHz ~ 18GHz)	01/20/2021	Annual	None

**Note:**

1. Equipment listed above that calibrated during the testing period was set for test after the calibration.
2. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.
3. Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5(Version : 2017).

## 11. ANNEX A\_ TEST SETUP PHOTO

Please refer to test setup photo file no. as follows;

No.	Description
1	HCT-RF-2108-FC006-P