

FCC DTS REPORT

Certification

Applicant Name:

SAMSUNG Electronics Co., Ltd.

Date of Issue:

October 16, 2023

Address:

129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea

Test Site/Location:

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Report No.: HCT-RF-2310-FC014

FCC ID:

A3LSMS926U

APPLICANT:

SAMSUNG Electronics Co., Ltd.

Model:

SM-S926U

Additional Model:

SM-S926U1

EUT Type:

Mobile Phone

Average Output Power:

SISO(Ant.1) : 15.80 dBm

SISO(Ant.2) : 15.18 dBm

MIMO_CDD (Ant.1+ Ant.2) : 18.47 dBm

Frequency Range:

2 412 MHz ~ 2 462 MHz

Modulation type:

OFDM, OFDMA

FCC Classification:

Digital Transmission System(DTS)

FCC Rule Part(s):

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-2310-FC014

REVIEWED BY



Report prepared by : Chang Hee Hwang
Engineer of Telecommunication Testing Center

Report approved by : Jong Seok Lee
Manager of Telecommunication Testing Center

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.
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-2310-FC014	October 16, 2023	- First Approval Report

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1. EUT DESCRIPTION

Model	SM-S926U		
Additional Model	SM-S926U1		
EUT Type	Mobile Phone		
Power Supply	DC 3.88 V		
Frequency Range	2 412 MHz ~ 2 462 MHz		
Max. RF Output Power	<u>Peak Power</u>	SISO(Ant.1)	25.85 dBm
		SISO(Ant.2)	24.81 dBm
		MIMO_CDD(Ant.1+ Ant.2)	28.22 dBm
	<u>Average Power</u>	SISO(Ant.1)	15.80 dBm
		SISO(Ant.2)	15.18 dBm
		MIMO_CDD(Ant.1+ Ant.2)	18.47 dBm
Modulation Type	OFDM, OFDMA		
Number of Channels	11 Channels		
Date(s) of Tests	September 01, 2023 ~ October 13, 2023		
Serial number	Radiated: R3CW80MAZYP Conducted: R3CW80MAZFV		

ANTENNA CONFIGURATIONS

1. Antenna configuration

Configurations	SISO		MIMO	
	ANT.1	ANT.2	CDD	SDM
802.11ax	O	O	O	O

Note:

- (1) O = Support, X = Not Support
- (2) SISO = Single Input Single Output
- (3) SDM = Spatial Diversity Multiplexing
- (4) CDD = Cyclic Delay Diversity

2.This device supports simultaneous transmission operation, which allows for two channels to operate independent of one another in the 2.4 GHz and 5 GHz or 6GHz Bands simultaneously on each antenna.

RSDB Scenario	2.4 GHz WiFi Ant.1	2.4 GHz WiFi Ant.2	5 GHz WiFi Ant.1	5 GHz WiFi Ant.2	6 GHz WiFi Ant.1	6 GHz WiFi Ant.2	Bluetooth Ant.1	Bluetooth Ant.2	Test Case
2.4 GHz WiFi MIMO + 6 GHz WiFi MIMO	on	on			on	on			
2.4 GHz WiFi MIMO + 5 GHz WiFi MIMO	on	on	on	on					Scenario1
Dual Bluetooth + 5 GHz WiFi MIMO			on	on			on	on	Scenario2
Dual Bluetooth + 6 GHz WiFi MIMO					on	on	on	on	
Bluetooth ANT.1 + 2.4 GHz WiFi ANT.2 + 5 GHz WiFi MIMO		on	on	on			on		Scenario3
Bluetooth ANT.1 + 2.4 GHz WiFi ANT.2 + 6 GHz WiFi MIMO		on			on	on	on		

3. Directional Gain Calculation

According to KDB 662911 D01 Multiple Transmitter Output v02r01 F) 2) e) (iii), f) ii)

$$\text{Directional Gain(CDD)} = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right]$$

$$\text{Directional gain(SDM)} = G_{\max} + 10 \cdot \text{LOG}(N_{ANT}/N_{SS})$$

Ant Gain (dBi)		N _{ANT} / N _{SS}	Directional Gain (dBi)	
			CDD	SDM
ANT1	-3.11	2/2	-0.88	-3.11
ANT2	-4.75			

Note

According to Ansi C63.10-2013 section 14.4.3, the directional gain is calculated using the formula, where G_N is the gain of the nth antenna and N_{ANT} is the total number of antennas used.

$$\text{Directional gain(CDD)} = 10 \cdot \log(((10^{(\text{ANT1 Gain}/20)} + 10^{(\text{ANT2 Gain}/20)})^2 / 2) \text{ dBi}$$

$$\text{Directional gain(SDM)} = G_{\max} + 10 \cdot \log(N_{ANT}/N_{SS})$$

Sample MIMO Calculation:

Ex) Ant 1 : 11.58 dBm Ant 2 : 12.08 dBm

Ant1 + Ant 2 = MIMO

$$(11.58 \text{ dBm} + 12.08 \text{ dBm}) = (14.387 \text{ mW} + 16.143 \text{ mW}) = 30.53 \text{ mW} = 14.88 \text{ dBm}$$

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 1.5 m 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 March 31, 2022 (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.

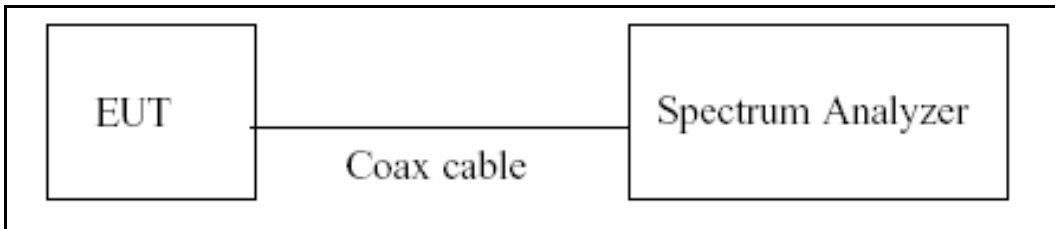
The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty (dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.90 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.14 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.82 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.74 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.76 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (Above 40 GHz)	5.52 (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 $> 50/T$.

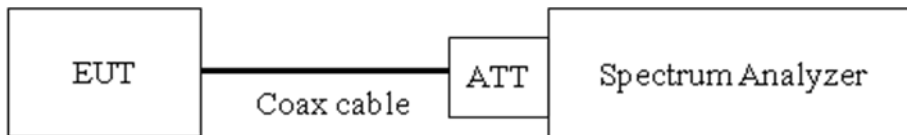
1. RBW = 8 MHz (the largest available value)
2. VBW = 8 MHz ($\geq$ RBW)
3. SPAN = 0 Hz
4. Detector = Peak
5. Number of points in sweep > 100
6. Trace mode = Clear write
7. Measure T_{total} and T_{on}
8. Calculate Duty Cycle = $T_{\text{on}} / T_{\text{total}}$ and Duty Cycle Factor = $10\log(1/\text{Duty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

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.

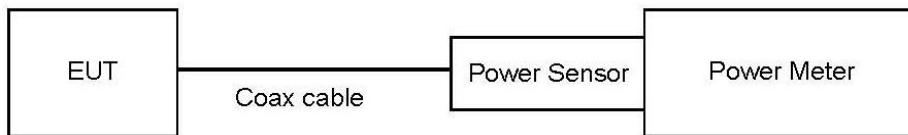
Note : We tested OBW using the automatic bandwidth measurement capability of a spectrum analyzer.

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

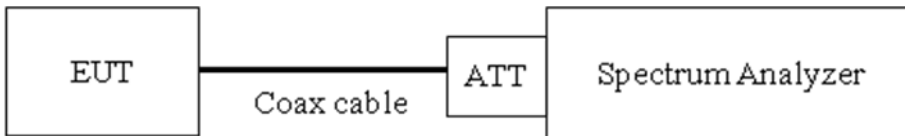
- Conducted Output Power(Peak) = Measured Value + ATT loss + Cable loss
- Conducted Output Power(Average) = Measured Value + ATT loss + Cable loss + Duty Cycle Factor

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 Value + ATT loss + Cable loss + Duty Cycle Factor

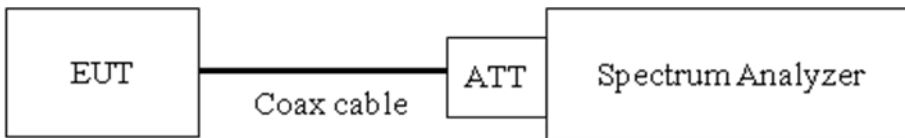
7.5. Conducted Band Edge (Out of Band Emissions) & Conducted Spurious Emissions

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 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	10.03
100	10.10
200	10.14
300	10.16
400	10.18
500	10.24
600	10.22
700	10.27
800	10.28
900	10.30
1000	10.31
2000	10.49
2400	10.51
2500	10.60
3000	10.52
4000	10.60
5000	10.71
6000	10.73
7000	10.80
8000	10.85
9000	10.91
10000	10.97
11000	11.02
12000	11.10
13000	11.19
14000	11.16
15000	11.21
16000	11.22
17000	11.25
18000	11.30
19000	11.32
20000	11.36
21000	11.48
22000	11.55
23000	11.55
24000	11.59
25000	11.68

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

2. Factor = Attenuator loss + Cable loss

3. EUT cable loss = 0.54 dB

4. Total Port offset = 11.14 dB

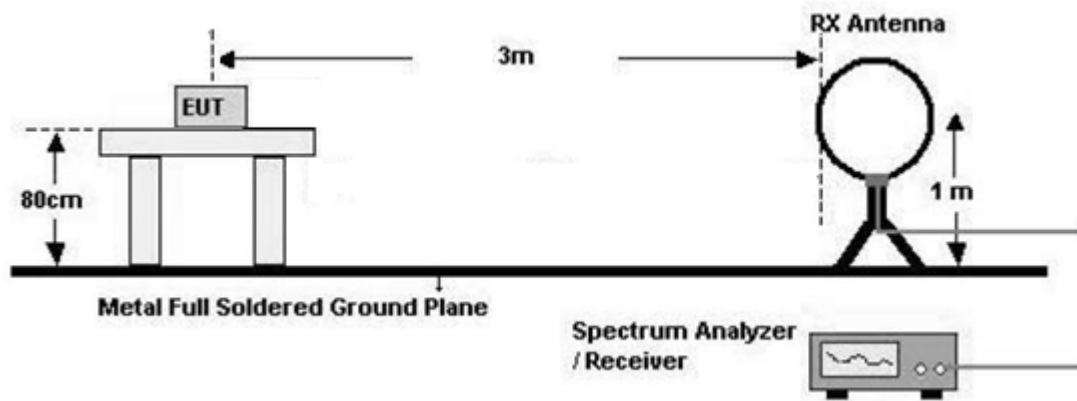
7.6. Radiated Test

Limit

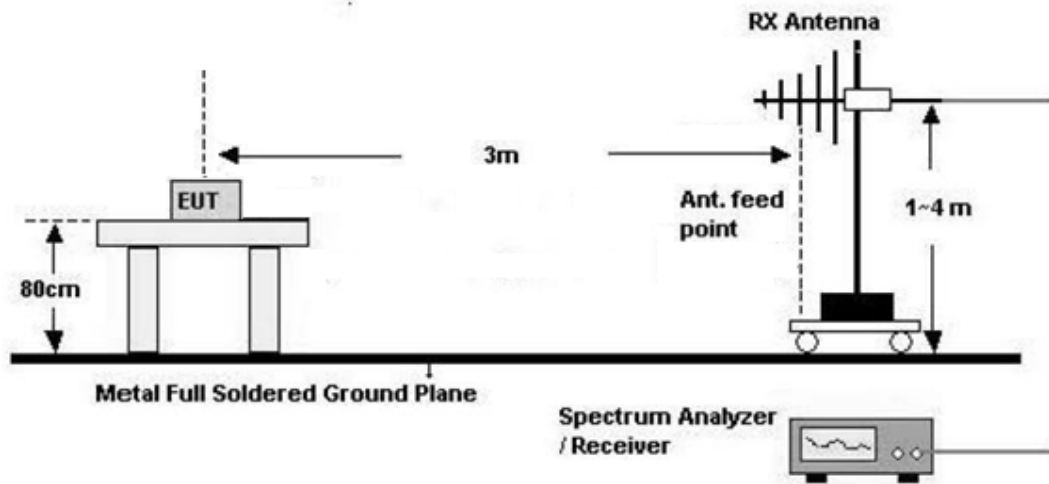
Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (m)
0.009 – 0.490	$2400/F(\text{kHz})$	300
0.490 – 1.705	$24000/F(\text{kHz})$	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

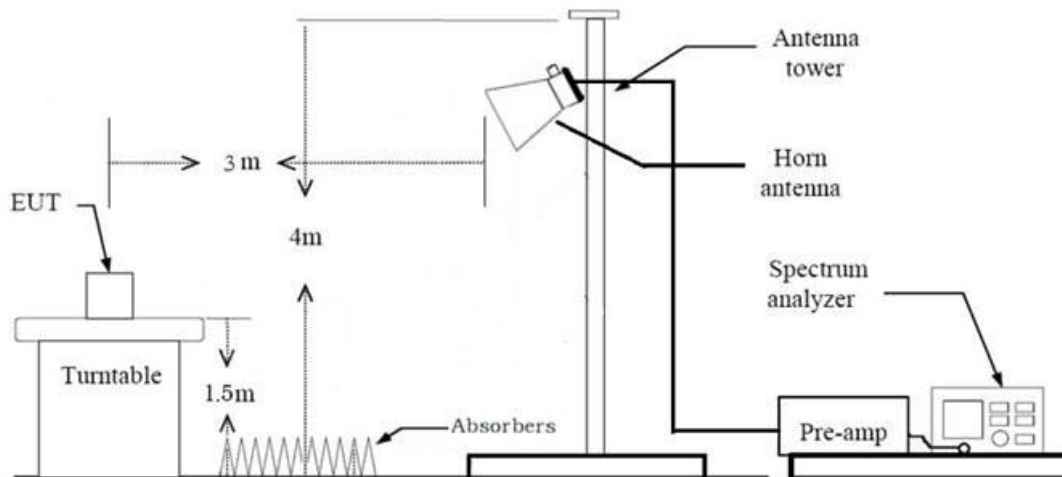
Below 30 MHz



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 = Maxhold
 - RBW = 9 kHz
 - VBW $\geq 3 \times$ RBW
9. Total = Measured value + 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 = Maxhold
- RBW = 100 kHz
- VBW $\geq 3 \times$ 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 Value + 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 = Maxhold
- 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 % 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)

= Measured value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(A.G) + Distance Factor(D.F)

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

= Measured value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(A.G) + Distance Factor(D.F)

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

= Measured value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(A.G) + Distance Factor(D.F)
+ 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 = Maxhold
 - RBW = 1 MHz
 - VBW $\geq 3 \times$ 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 $\geq 3 \times$ 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 : 2310 MHz ~ 2390 MHz / 2483.5 MHz ~ 2500 MHz
 - 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 % 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 value + Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F)
- Total(Measurement Type : Average, Duty cycle $\geq 98\%$)
= Measured value + Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F)
- Total(Measurement Type : Average, Duty cycle < 98 %)
= Measured value + 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 μ H/50 ohms line impedance stabilization network (LISN).

Frequency Range (MHz)	Limits (dB μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56 ^(a)	56 to 46 ^(a)
0.50 to 5	56	46
5 to 30	60	50

^(a)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 Value + 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 : 26T MCS8, 52T MCS7, 106T MCS1, 242T MCS8, SU MCS7)

2. Bandedge (Conducted)

: All Mode (Channel, Tones, RU Offset) of operation were investigated and the worst case configuration results are reported.

Tones	Channel	RU Index
26	1, 11	0, 8
52	1, 11	37, 40
106	1, 11	53, 54
242	1, 11	61
SU	1, 11	-

2. SM-S926U, SM-S926U1 were tested and the worst case results are reported.

(Worst case: SM-S926U)

Radiated test

1. All modes of operation were investigated and the worst case configuration results are reported.

- Mode : Stand alone, Stand alone + External accessories (Earphone, etc)

- Worst case : Stand alone

2. EUT Axis

- Radiated Spurious Emissions : X

- Radiated Restricted Band Edge : X

3. All data rate of operation were investigated and the worst case results are reported.

(Worst case : MCS0)

4. All Antenna of operation were investigated and the worst case results are reported

- Antenna Operation Type : SISO, MIMO_CDD(Ant.1+Ant.2), MIMO_SDM(Ant.1+Ant.2)

- Worstcase: MIMO_CDD(Ant.1+Ant.2)

5. 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

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

TEST	TONE	RU OFFSET
RSE	WORST CASE : 242T	242T : 61
	ADDITIONAL TONE : 26T, 52T, 106T, SU	26T : 8 52T : 40 106T : 54 SU: -
Band-Edge	WORST CASE : 242T	61
	ADDITIONAL TONE : 26T, 52T, 106T, SU	Low Edge : 0, 37, 53 High Edge : 8, 40, 54

7. SM-S926U, SM-S926U1 were tested and the worst case results are reported.
(Worst case: SM-S926U)

Radiated test(RSDB)

1. Please refer to the [DTS], [BT], [UNII] Test Report.
2. SM-S926U, SM-S926U1 were tested and the worst case results are reported.
(Worst case: SM-S926U)

AC Power line Conducted Emissions

1. Please refer to the [DTS] Test Report.
2. SM-S926U, SM-S926U1 were tested and the worst case results are reported.
(Worst case: SM-S926U)

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

Note1:

1. Please refer to the [DTS] Test Report.

9. TEST RESULT

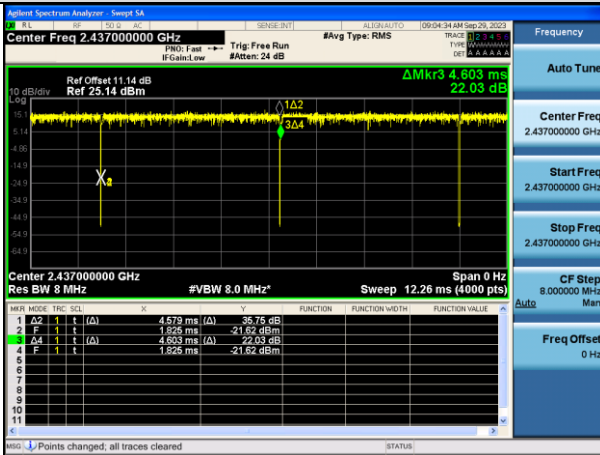
9.1 DUTY CYCLE

Mode	Tone (T)	Data Rate	On Time (ms)	Total Time (ms)	Duty Cycle	Duty Cycle Factor (dB)
802.11ax (HE20)	26	MCS0	4.579	4.603	0.995	0.023
		MCS1	4.568	4.594	0.994	0.025
		MCS2	3.505	3.527	0.994	0.027
		MCS3	2.642	2.668	0.991	0.041
		MCS4	1.783	1.809	0.986	0.061
		MCS5	1.353	1.378	0.982	0.081
		MCS6	1.213	1.239	0.980	0.090
		MCS7	1.102	1.127	0.978	0.099
		MCS8	0.925	0.950	0.973	0.117
		MCS9	0.844	0.866	0.974	0.116
	52	MCS0	4.571	4.594	0.995	0.022
		MCS1	2.642	2.668	0.991	0.041
		MCS2	1.783	1.809	0.986	0.061
		MCS3	1.355	1.378	0.983	0.072
		MCS4	0.927	0.950	0.976	0.106
		MCS5	0.707	0.735	0.962	0.168
		MCS6	0.666	0.692	0.963	0.162
		MCS7	0.659	0.681	0.967	0.148
		MCS8	0.659	0.681	0.967	0.148
		MCS9	0.656	0.681	0.963	0.165
	106	MCS0	2.493	2.516	0.991	0.040
		MCS1	1.274	1.302	0.979	0.094
		MCS2	0.874	0.899	0.972	0.124
		MCS3	0.674	0.697	0.967	0.145
		MCS4	0.623	0.646	0.965	0.156
		MCS5	0.616	0.638	0.964	0.158
		MCS6	0.611	0.636	0.960	0.177
		MCS7	0.611	0.636	0.960	0.177
		MCS8	0.613	0.636	0.964	0.159
		MCS9	0.608	0.633	0.960	0.177
	242	MCS0	1.125	1.148	0.980	0.087
		MCS1	0.603	0.628	0.960	0.179
		MCS2	0.598	0.623	0.959	0.180
		MCS3	0.611	0.636	0.960	0.177
		MCS4	0.598	0.623	0.959	0.180
		MCS5	0.600	0.623	0.963	0.162
		MCS6	0.595	0.618	0.963	0.163

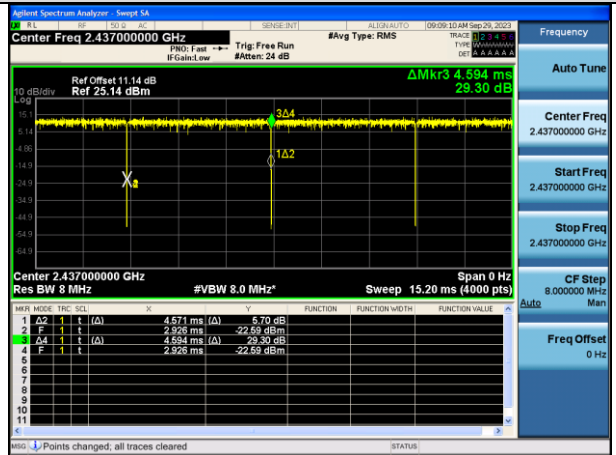
Mode	Tone (T)	Data Rate	On Time (ms)	Total Time (ms)	Duty Cycle	Duty Cycle Factor (dB)
		MCS7	0.593	0.618	0.959	0.182
		MCS8	0.598	0.623	0.959	0.180
		MCS9	0.593	0.618	0.959	0.182
802.11ax(SU)	BW 20	MCS0	5.447	5.467	0.996	0.016
		MCS1	5.445	5.464	0.997	0.015
		MCS2	5.449	5.464	0.997	0.012
		MCS3	5.445	5.464	0.997	0.015
		MCS4	5.445	5.464	0.997	0.015
		MCS5	5.445	5.464	0.997	0.015
		MCS6	5.445	5.464	0.997	0.015
		MCS7	5.445	5.464	0.997	0.015
		MCS8	5.447	5.467	0.996	0.016
		MCS9	5.447	5.467	0.996	0.016

Test Plots

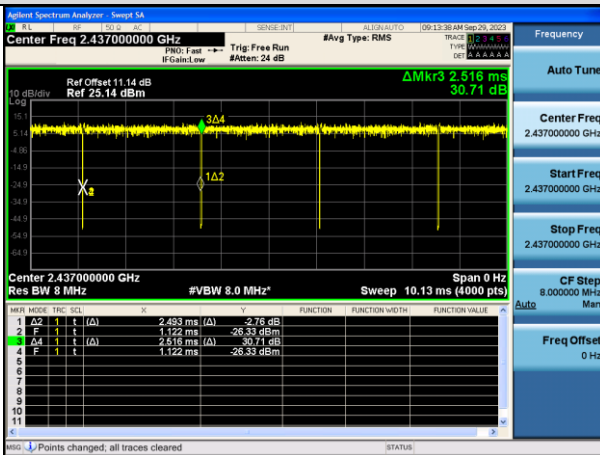
26 Tones MCS0



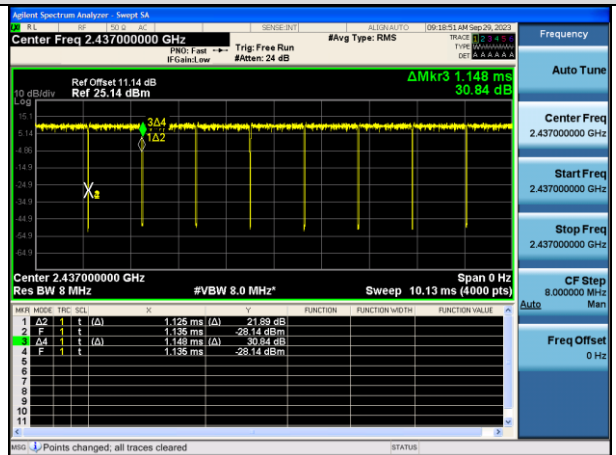
52 Tones MCS0



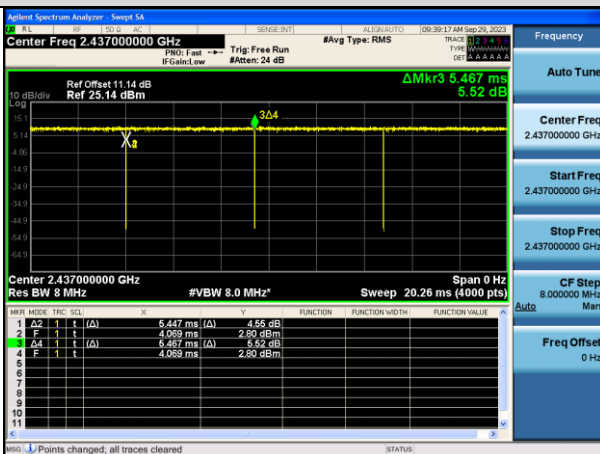
106 Tones MCS0



242 Tones MCS0



SU MCS0



Note:

In order to simplify the report, attached plots were only the lowest data rate.

9.2 6 dB BANDWIDTH

Limit : > 500 kHz

[ANT.1]

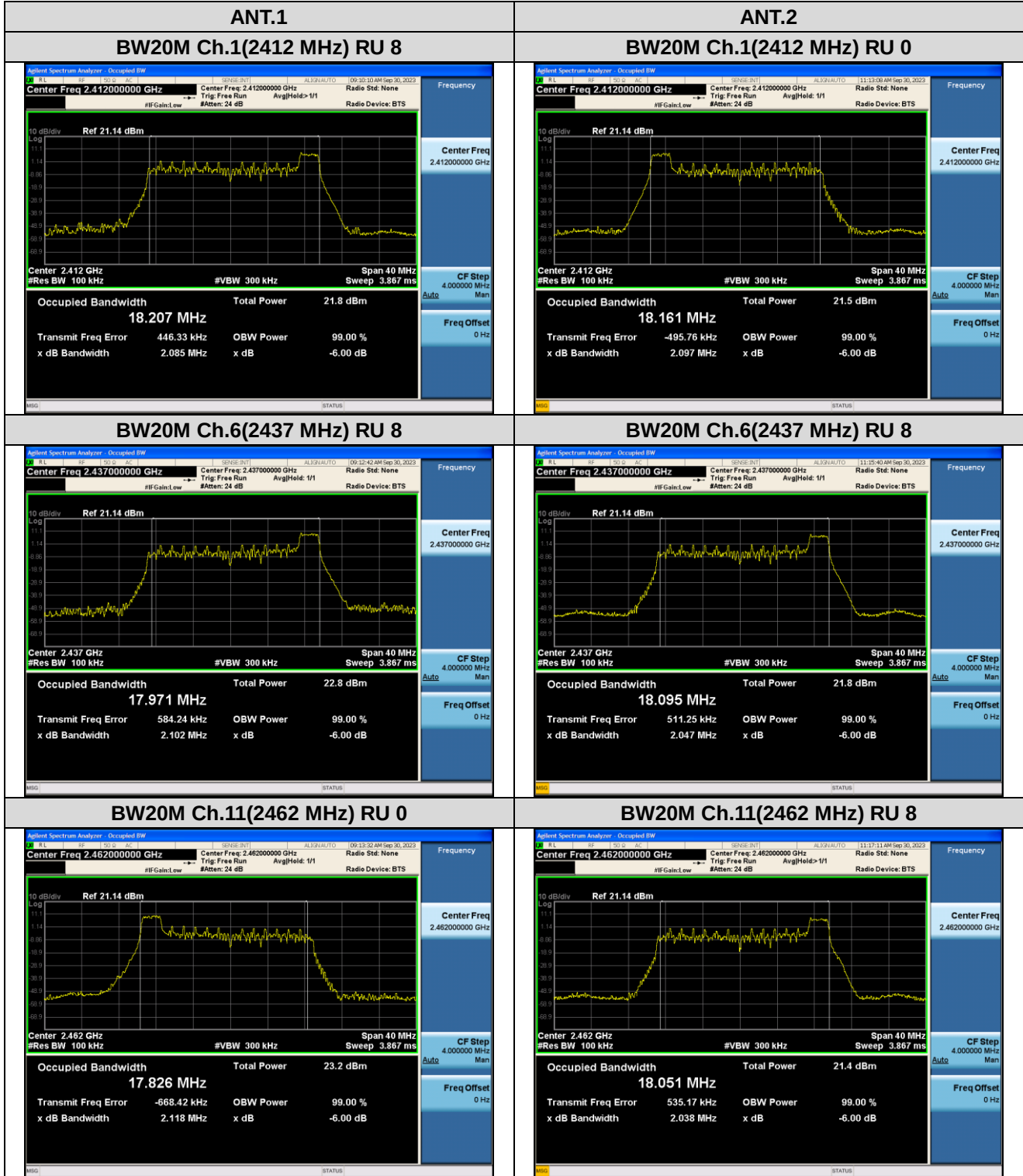
Mode	Freq. [MHz]	CH.	6dB Bandwidth [MHz]			99% Occupied Bandwidth [MHz]		
			RU Index : Low	RU Index : Mid	RU Index : High	RU Index : Low	RU Index : Mid	RU Index : High
HE20 26T	2412	1	2.128	2.709	2.085	17.965	17.054	18.207
	2437	6	2.103	2.704	2.102	18.187	17.123	17.971
	2462	11	2.118	2.692	17.02	17.826	17.078	18.269
HE20 52T	2412	1	4.521	15.08	17.04	18.015	17.085	18.159
	2437	6	17.10	15.12	4.101	18.165	17.190	17.923
	2462	11	4.538	8.878	17.06	17.932	17.104	18.206
HE20 106T	2412	1	17.16	-	17.39	18.057	-	18.206
	2437	6	18.20	-	17.17	18.189	-	18.061
	2462	11	17.14	-	18.35	18.019	-	18.232
HE20 242T	2412	1	-	19.00	-	-	18.912	-
	2437	6	-	19.01	-	-	18.954	-
	2462	11	-	18.71	-	-	18.912	-
HE20 SU	2412	1	-	19.00	-	-	18.886	-
	2437	6	-	19.02	-	-	18.930	-
	2462	11	-	18.79	-	-	18.881	-

[ANT.2]

Mode	Freq. [MHz]	CH.	6dB Bandwidth [MHz]			99% Occupied Bandwidth [MHz]		
			RU Index : Low	RU Index : Mid	RU Index : High	RU Index : Low	RU Index : Mid	RU Index : High
HE20 26T	2412	1	2.097	2.703	2.101	18.161	17.069	18.001
	2437	6	2.080	2.714	2.047	18.048	17.027	18.095
	2462	11	2.101	2.708	2.038	18.088	17.097	18.051
HE20 52T	2412	1	17.08	13.89	4.094	18.116	17.113	17.949
	2437	6	17.06	15.10	17.02	18.059	17.107	18.034
	2462	11	17.07	15.11	17.03	18.094	17.110	18.002
HE20 106T	2412	1	18.12	-	17.17	18.146	-	18.048
	2437	6	17.18	-	17.38	18.089	-	18.139
	2462	11	18.15	-	17.34	18.134	-	18.124
HE20 242T	2412	1	-	19.03	-	-	18.930	-
	2437	6	-	19.08	-	-	18.941	-
	2462	11	-	19.07	-	-	18.951	-
HE20 SU	2412	1	-	19.05	-	-	18.915	-
	2437	6	-	19.03	-	-	18.913	-
	2462	11	-	19.05	-	-	18.926	-

Test Plots

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



9.3 OUTPUT POWER

Limit : 30 dBm

Peak Power

[MIMO_CDD(Ant.1+Ant.2)]

Note:

1. MIMO Peak Power = $10 \cdot \log((10^{(\text{Ant.1 Peak power}/10)}) + (10^{(\text{Ant.2 Peak power}/10)}))$

Mode	Freq. [MHz]	CH.	Total Peak Power [dBm]								
			RU Index : Low			RU Index : Mid			RU Index : High		
			ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO
HE20 26T	2412	1	24.32	22.88	26.67	23.41	22.62	26.04	22.86	23.57	26.24
	2437	6	22.96	23.22	26.10	22.68	22.69	25.69	23.91	22.98	26.48
	2462	11	24.43	22.73	26.67	23.01	22.17	25.62	22.27	22.78	25.55
HE20 52T	2412	1	25.19	23.70	27.52	24.73	23.72	27.26	23.68	24.14	26.93
	2437	6	23.69	24.07	26.89	23.65	23.91	26.79	24.67	23.80	27.27
	2462	11	25.24	23.59	27.50	24.62	23.39	27.06	23.14	23.56	26.37
HE20 106T	2412	1	25.85	24.45	28.22	-	-	-	24.76	24.67	27.73
	2437	6	24.53	24.72	27.64	-	-	-	25.18	24.55	27.89
	2462	11	25.62	24.28	28.01	-	-	-	24.08	24.22	27.16
HE20 242T	2412	1	-	-	-	24.70	23.82	27.29	-	-	-
	2437	6	-	-	-	24.47	24.03	27.27	-	-	-
	2462	11	-	-	-	23.93	23.17	26.58	-	-	-
HE20 SU	2412	1	-	-	-	25.43	24.66	28.07	-	-	-
	2437	6	-	-	-	25.07	24.81	27.95	-	-	-
	2462	11	-	-	-	25.14	24.38	27.79	-	-	-

Average Power

[MIMO_CDD(Ant.1+Ant.2)]

Note:

1. MIMO Average Power = $10 \cdot \log(((10^{\text{Ant.1 Average power / 10}}) + (10^{\text{Ant.2 Average power / 10}})))$

Mode	Freq. [MHz]	CH.	Total Average Power [dBm]								
			RU Index : Low			RU Index : Mid			RU Index : High		
			ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO
HE20 26T	2412	1	13.64	11.91	15.87	12.80	11.94	15.40	11.86	12.89	15.42
	2437	6	12.04	12.49	15.28	12.01	12.09	15.06	13.63	12.30	16.03
	2462	11	13.98	11.89	16.07	12.43	11.52	15.01	11.02	12.14	14.62
HE20 52T	2412	1	14.68	12.82	16.86	14.34	12.81	16.66	12.87	13.69	16.31
	2437	6	12.98	13.53	16.27	12.93	13.38	16.17	14.53	13.35	16.99
	2462	11	14.98	12.80	17.04	14.35	12.57	16.56	12.20	12.86	15.55
HE20 106T	2412	1	15.64	13.82	17.84	-	-	-	14.17	14.46	17.33
	2437	6	13.92	14.33	17.14	-	-	-	15.08	14.18	17.66
	2462	11	15.57	13.64	17.73	-	-	-	13.42	13.74	16.60
HE20 242T	2412	1	-	-	-	15.80	15.09	18.47	-	-	-
	2437	6	-	-	-	15.49	15.18	18.35	-	-	-
	2462	11	-	-	-	15.17	14.32	17.78	-	-	-
HE20 SU	2412	1	-	-	-	15.80	15.09	18.46	-	-	-
	2437	6	-	-	-	15.51	15.17	18.35	-	-	-
	2462	11	-	-	-	15.49	14.78	18.16	-	-	-

9.4 POWER SPECTRAL DENSITY

Limit : 8 dBm

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 = Attenuator loss(10 dB) + Cable loss + EUT Cable loss

3. Total PSD = Measured Value + Duty Cycle Factor

[MIMO_CDD(Ant.1+Ant.2)]

1. MIMO Total PSD = $10 \cdot \log(((10^{(\text{Ant.1 PSD} / 10)}) + (10^{(\text{Ant.2 PSD} / 10))))$

Mode	Freq. [MHz]	CH.	Total Power Spectral Density [dBm/MHz]								
			RU Index : Low			RU Index : Mid			RU Index : High		
			ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO
HE20 26T	2412	1	-3.016	-4.590	-0.721	-4.181	-5.147	-1.627	-4.527	-3.811	-1.144
	2437	6	-4.404	-4.192	-1.286	-4.722	-4.824	-1.762	-2.205	-4.675	-0.256
	2462	11	-2.442	-4.588	-0.373	-4.140	-5.298	-1.670	-5.854	-4.689	-2.222
HE20 52T	2412	1	-4.525	-6.216	-2.279	-3.813	-5.952	-1.742	-6.113	-5.094	-2.564
	2437	6	-6.083	-5.246	-2.634	-6.064	-5.647	-2.840	-4.540	-5.710	-2.076
	2462	11	-3.439	-5.791	-1.448	-4.014	-6.153	-1.943	-6.408	-5.627	-2.990
HE20 106T	2412	1	-6.847	-8.827	-4.715	-	-	-	-8.666	-7.809	-5.206
	2437	6	-8.819	-8.269	-5.525	-	-	-	-7.022	-8.640	-4.746
	2462	11	-6.758	-8.703	-4.612	-	-	-	-9.045	-8.685	-5.851
HE20 242T	2412	1	-	-	-	-8.934	-9.857	-6.360	-	-	-
	2437	6	-	-	-	-9.348	-8.507	-5.897	-	-	-
	2462	11	-	-	-	-8.981	-10.394	-6.620	-	-	-
HE20 SU	2412	1	-	-	-	-9.994	-11.074	-7.490	-	-	-
	2437	6	-	-	-	-9.844	-11.256	-7.482	-	-	-
	2462	11	-	-	-	-9.699	-11.623	-7.545	-	-	-

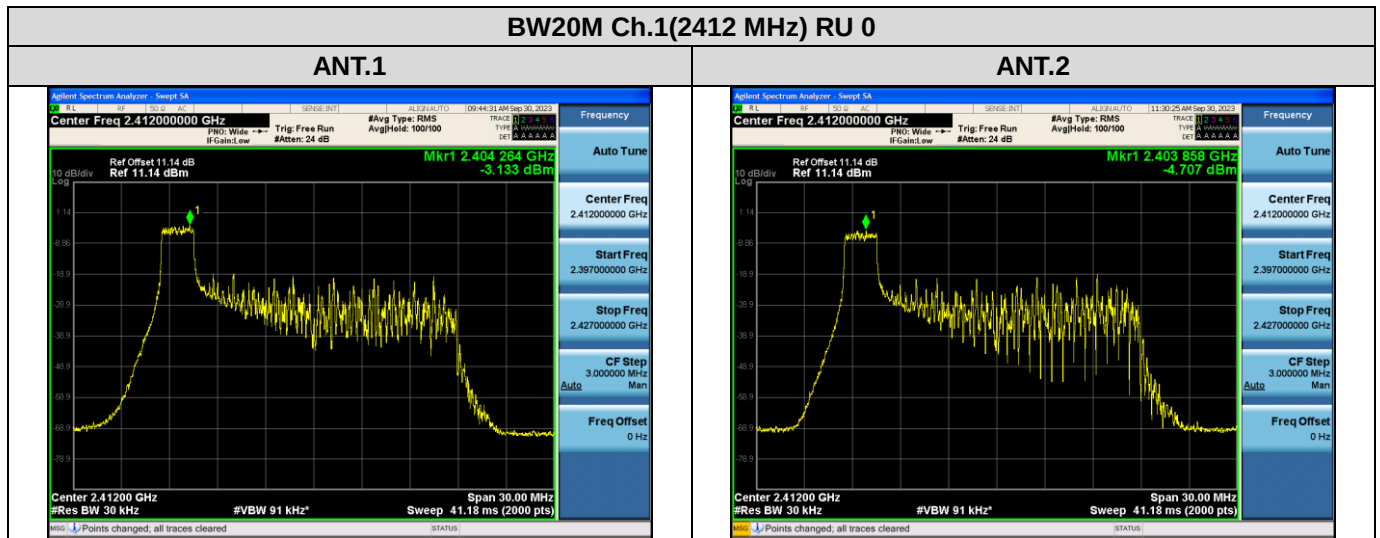
Test Plots

Note: In order to simplify the report, attached plots were only the worst case PSD channel.

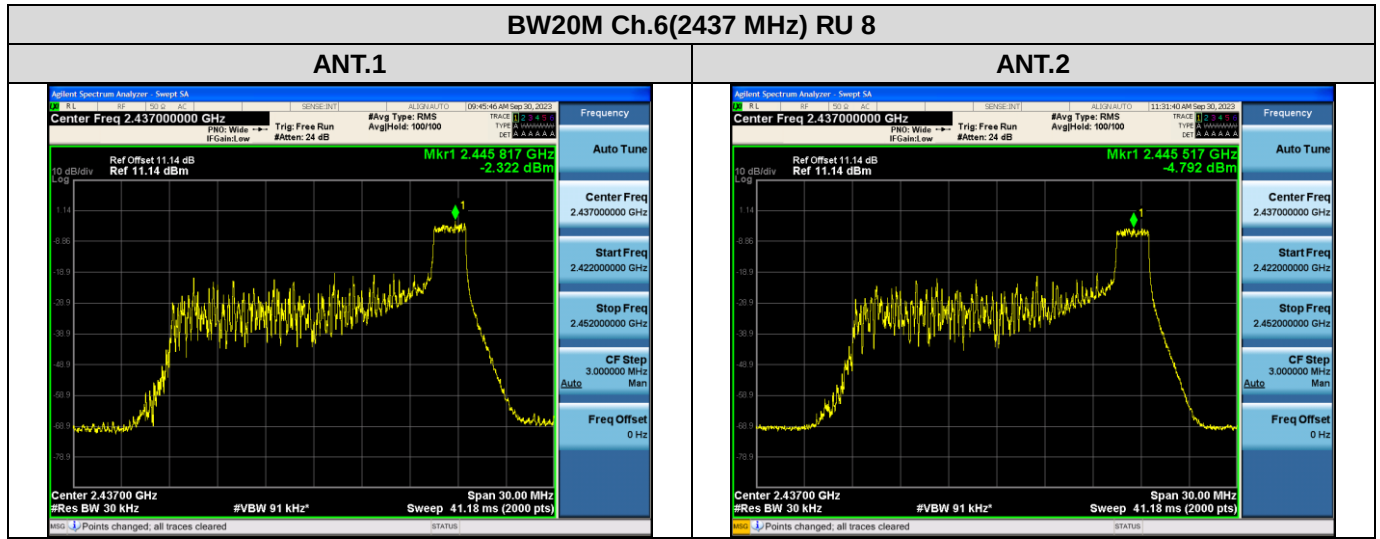
[MIMO_CDD(Ant.1+Ant.2)]

Note:

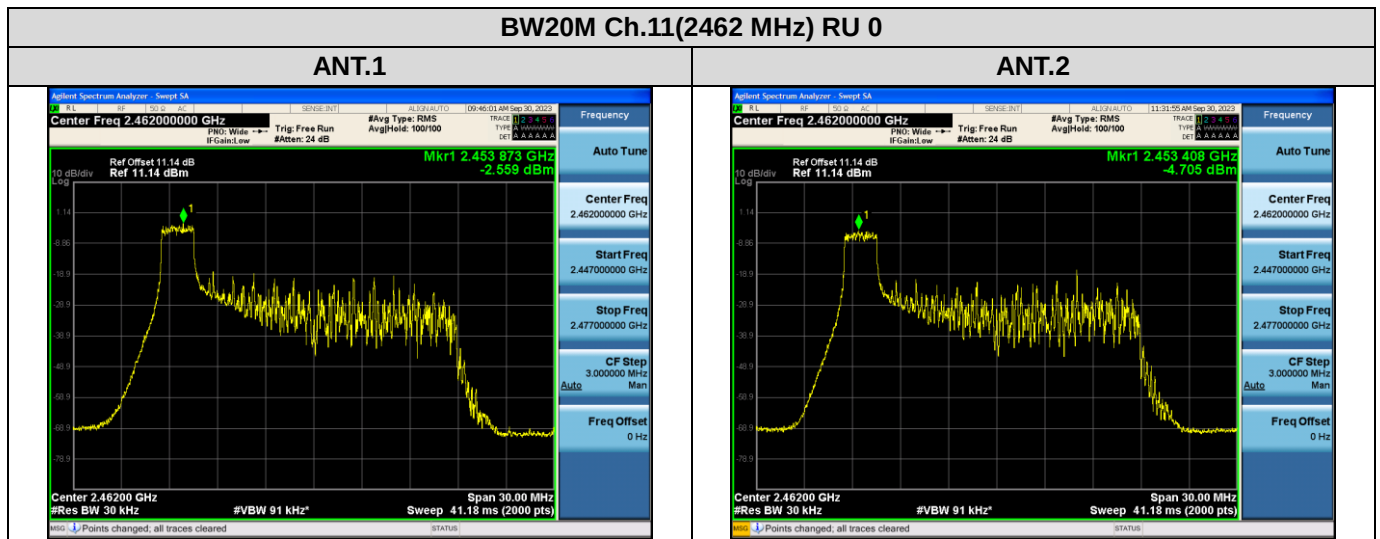
1. In order to simplify the report, attached plots were only the worst case PSD channel.
2. $SUM\ PSD = 10 \cdot \log(((10^{(Ant.1\ PSD / 10)}) + (10^{(Ant.2\ PSD / 10)}))$
3. $MIMO\ Total\ PSD = SUM\ PSD + Duty\ Cycle\ Factor$



MIMO Measured PSD (dBm)	Duty Cycle Factor (dB)	MIMO Total PSD (dBm)
-0.839	0.117	-0.721



MIMO Measured PSD (dBm)	Duty Cycle Factor (dB)	MIMO Total PSD (dBm)
-0.373	0.117	-0.256



MIMO Measured PSD (dBm)	Duty Cycle Factor (dB)	MIMO Total PSD (dBm)
-0.490	0.117	-0.373

9.5 BAND EDGE / CONDUCTED SPURIOUS EMISSIONS

Band Edge

Limit : 30 dBc

[ANT.1]

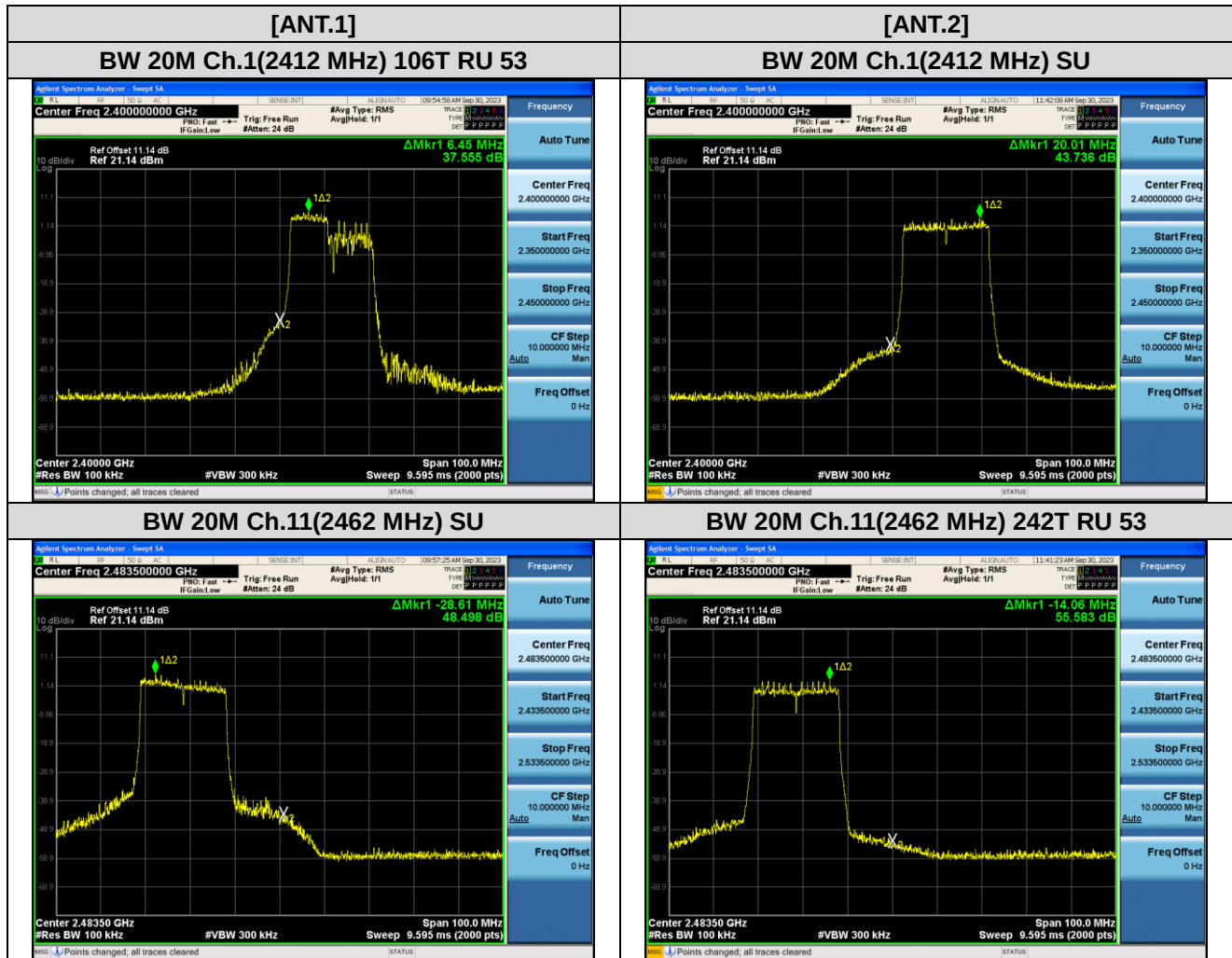
Mode	Freq. [MHz]	CH.	RU Position	Measured Position	Band edge [dB]
HE20 26T	2412	1	Low	Lowest Bandedge	53.544
	2462	11	High	Highest Bandedge	61.605
HE20 52T	2412	1	Low	Lowest Bandedge	41.173
	2462	11	High	Highest Bandedge	56.148
HE20 106T	2412	1	Low	Lowest Bandedge	37.555
	2462	11	High	Highest Bandedge	53.248
HE20 242T	2412	1	Low	Lowest Bandedge	40.696
	2462	11	High	Highest Bandedge	48.674
HE20 SU	2412	1	Low	Lowest Bandedge	39.404
	2462	11	High	Highest Bandedge	48.498

[ANT.2]

Mode	Freq. [MHz]	CH.	RU Position	Measured Position	Band edge [dB]
HE20 26T	2412	1	Low	Lowest Bandedge	55.848
	2462	11	High	Highest Bandedge	62.284
HE20 52T	2412	1	Low	Lowest Bandedge	52.374
	2462	11	High	Highest Bandedge	61.007
HE20 106T	2412	1	Low	Lowest Bandedge	46.541
	2462	11	High	Highest Bandedge	57.838
HE20 242T	2412	1	Low	Lowest Bandedge	45.178
	2462	11	High	Highest Bandedge	55.583
HE20 SU	2412	1	Low	Lowest Bandedge	43.736
	2462	11	High	Highest Bandedge	56.311

Test Plots

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



Conducted Spurious Emissions

Limit : 30 dBc

[ANT.1]

Mode	Freq. [MHz]	CH.	Conducted Spurious Emissions [dB]		
			RU Index : Low	RU Index : Mid	RU Index : High
HE20 26T	2412	1	65.038	64.773	64.353
	2437	6	64.375	64.558	65.895
	2462	11	66.343	63.140	62.479
HE20 52T	2412	1	64.500	64.462	61.938
	2437	6	62.348	61.918	64.193
	2462	11	64.800	62.553	62.125
HE20 106T	2412	1	61.172	-	59.635
	2437	6	58.832	-	60.930
	2462	11	61.839	-	59.020
HE20 242T	2412	1	-	60.114	-
	2437	6	-	60.693	-
	2462	11	-	59.957	-
HE20 SU	2412	1	-	60.696	-
	2437	6	-	58.838	-
	2462	11	-	60.393	-

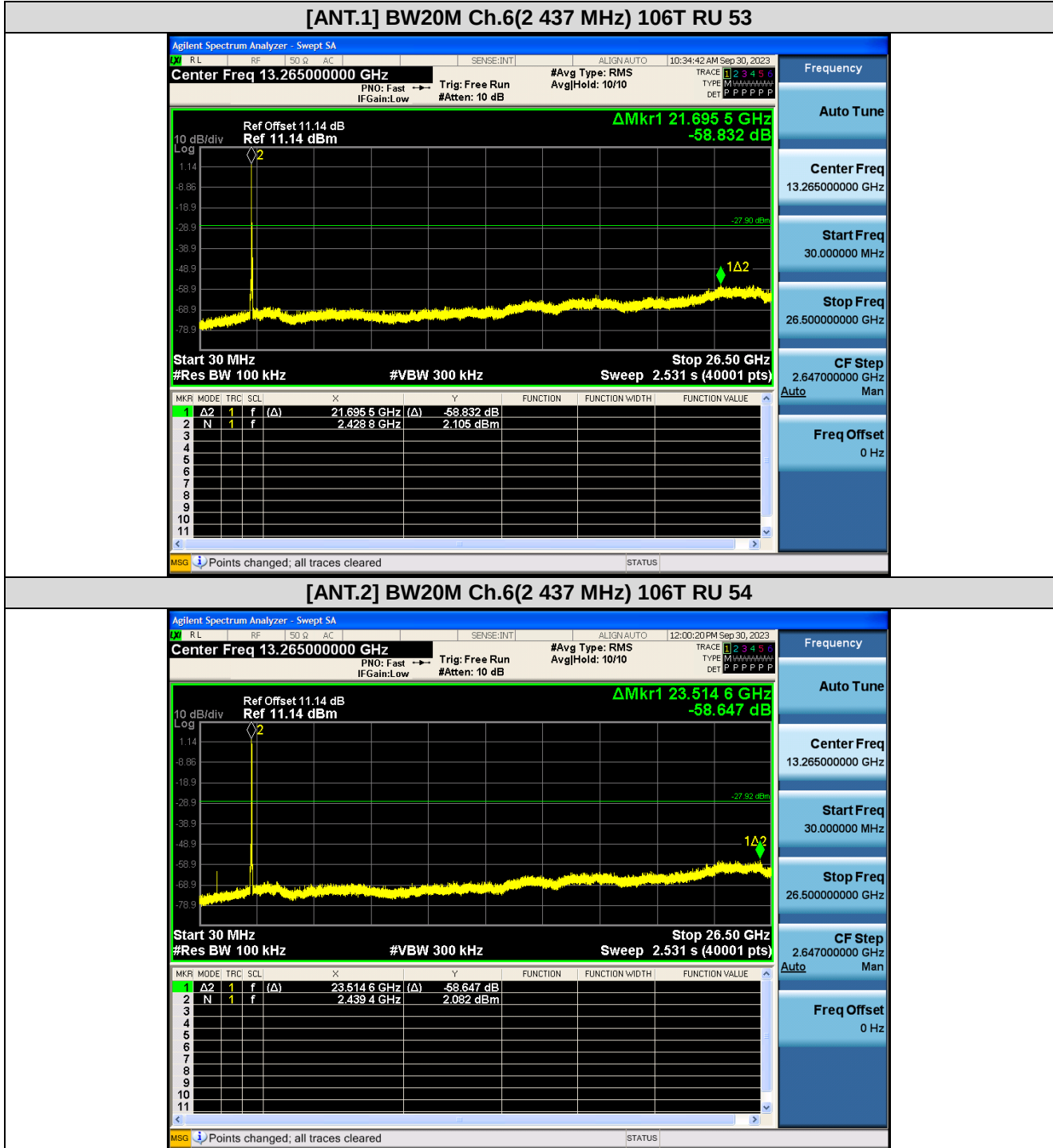
[ANT.2]

Mode	Freq. [MHz]	CH.	Conducted Spurious Emissions [dB]		
			RU Index : Low	RU Index : Mid	RU Index : High
HE20 26T	2412	1	62.541	64.944	63.942
	2437	6	64.397	62.823	63.881
	2462	11	62.954	63.729	63.878
HE20 52T	2412	1	63.074	62.799	62.825
	2437	6	64.106	62.582	63.064
	2462	11	63.045	62.653	63.614
HE20 106T	2412	1	60.059	-	59.693
	2437	6	61.223	-	58.647
	2462	11	59.748	-	59.023
HE20 242T	2412	1	-	59.730	-
	2437	6	-	59.020	-
	2462	11	-	59.487	-
HE20 SU	2412	1	-	59.451	-
	2437	6	-	60.149	-
	2462	11	-	60.120	-

▣ Test Plots

Note:

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



9.6 RADIATED SPURIOUS EMISSIONS

Frequency Range : 9 kHz – 30 MHz

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

Note:

1. The Measured 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 Value	A.F+C.L	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

[MIMO_CDD(Ant.1+Ant.2)]

1. 26 Tones RU 8

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2412 MHz
Channel No.	1 Ch
RU offset	8

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4824	46.34	0.00	3.58	V	49.92	73.98	24.06	PK
4824	33.81	0.00	3.58	V	37.39	53.98	16.59	AV
7236	38.34	0.00	12.72	V	51.06	73.98	22.92	PK
7236	26.10	0.00	12.72	V	38.82	53.98	15.16	AV
4824	45.95	0.00	3.58	H	49.53	73.98	24.45	PK
4824	34.38	0.00	3.58	H	37.96	53.98	16.02	AV
7236	39.26	0.00	12.72	H	51.98	73.98	22.00	PK
7236	26.31	0.00	12.72	H	39.03	53.98	14.95	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2437 MHz
Channel No.	6 Ch
RU offset	8

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4874	44.15	0.00	3.64	V	47.79	73.98	26.19	PK
4874	31.96	0.00	3.64	V	35.60	53.98	18.38	AV
7311	38.75	0.00	11.97	V	50.72	73.98	23.26	PK
7311	26.75	0.00	11.97	V	38.72	53.98	15.26	AV
4874	44.06	0.00	3.64	H	47.70	73.98	26.28	PK
4874	32.23	0.00	3.64	H	35.87	53.98	18.11	AV
7311	38.80	0.00	11.97	H	50.77	73.98	23.21	PK
7311	26.79	0.00	11.97	H	38.76	53.98	15.22	AV

Operation Mode: 802.11ax(HE20)
 Transfer MCS Index: 0
 Operating Frequency: 2462 MHz
 Channel No. 11 Ch
 RU offset 8

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4924	44.90	0.00	4.84	V	49.74	73.98	24.24	PK
4924	32.29	0.00	4.84	V	37.13	53.98	16.85	AV
7386	39.47	0.00	12.44	V	51.91	73.98	22.07	PK
7386	26.76	0.00	12.44	V	39.20	53.98	14.78	AV
4924	45.81	0.00	4.84	H	50.65	73.98	23.33	PK
4924	33.72	0.00	4.84	H	38.56	53.98	15.42	AV
7386	39.42	0.00	12.44	H	51.86	73.98	22.12	PK
7386	26.95	0.00	12.44	H	39.39	53.98	14.59	AV

2. 52 Tones RU 40

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2412 MHz
Channel No.	1 Ch
RU offset	40

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4824	45.98	0.00	3.58	V	49.56	73.98	24.42	PK
4824	33.83	0.00	3.58	V	37.41	53.98	16.57	AV
7236	38.59	0.00	12.72	V	51.31	73.98	22.67	PK
7236	26.08	0.00	12.72	V	38.80	53.98	15.18	AV
4824	47.76	0.00	3.58	H	51.34	73.98	22.64	PK
4824	34.18	0.00	3.58	H	37.76	53.98	16.22	AV
7236	38.66	0.00	12.72	H	51.38	73.98	22.60	PK
7236	26.31	0.00	12.72	H	39.03	53.98	14.95	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2437 MHz
Channel No.	6 Ch
RU offset	40

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4874	44.07	0.00	3.64	V	47.71	73.98	26.27	PK
4874	31.91	0.00	3.64	V	35.55	53.98	18.43	AV
7311	39.12	0.00	11.97	V	51.09	73.98	22.89	PK
7311	26.72	0.00	11.97	V	38.69	53.98	15.29	AV
4874	44.30	0.00	3.64	H	47.94	73.98	26.04	PK
4874	32.04	0.00	3.64	H	35.68	53.98	18.30	AV
7311	39.11	0.00	11.97	H	51.08	73.98	22.90	PK
7311	26.87	0.00	11.97	H	38.84	53.98	15.14	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2462 MHz
Channel No.	11 Ch
RU offset	40

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4924	44.13	0.00	4.84	V	48.97	73.98	25.01	PK
4924	32.28	0.00	4.84	V	37.12	53.98	16.86	AV
7386	38.99	0.00	12.44	V	51.43	73.98	22.55	PK
7386	26.75	0.00	12.44	V	39.19	53.98	14.79	AV
4924	46.57	0.00	4.84	H	51.41	73.98	22.57	PK
4924	34.15	0.00	4.84	H	38.99	53.98	14.99	AV
7386	39.36	0.00	12.44	H	51.80	73.98	22.18	PK
7386	26.95	0.00	12.44	H	39.39	53.98	14.59	AV

3. 106 Tones RU 54

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2412 MHz
Channel No.	1 Ch
RU offset	54

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4824	43.96	0.00	3.58	V	47.54	73.98	26.44	PK
4824	32.20	0.00	3.58	V	35.78	53.98	18.20	AV
7236	38.60	0.00	12.72	V	51.32	73.98	22.66	PK
7236	26.10	0.00	12.72	V	38.82	53.98	15.16	AV
4824	44.30	0.00	3.58	H	47.88	73.98	26.10	PK
4824	32.55	0.00	3.58	H	36.13	53.98	17.85	AV
7236	38.88	0.00	12.72	H	51.60	73.98	22.38	PK
7236	26.23	0.00	12.72	H	38.95	53.98	15.03	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2437 MHz
Channel No.	6 Ch
RU offset	54

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4874	43.86	0.00	3.64	V	47.50	73.98	26.48	PK
4874	31.90	0.00	3.64	V	35.54	53.98	18.44	AV
7311	39.49	0.00	11.97	V	51.46	73.98	22.52	PK
7311	26.75	0.00	11.97	V	38.72	53.98	15.26	AV
4874	44.84	0.00	3.64	H	48.48	73.98	25.50	PK
4874	32.06	0.00	3.64	H	35.70	53.98	18.28	AV
7311	39.02	0.00	11.97	H	50.99	73.98	22.99	PK
7311	26.84	0.00	11.97	H	38.81	53.98	15.17	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2462 MHz
Channel No.	11 Ch
RU offset	54

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4924	44.07	0.00	4.84	V	48.91	73.98	25.07	PK
4924	31.51	0.00	4.84	V	36.35	53.98	17.63	AV
7386	38.73	0.00	12.44	V	51.17	73.98	22.81	PK
7386	26.77	0.00	12.44	V	39.21	53.98	14.77	AV
4924	43.74	0.00	4.84	H	48.58	73.98	25.40	PK
4924	32.18	0.00	4.84	H	37.02	53.98	16.96	AV
7386	39.06	0.00	12.44	H	51.50	73.98	22.48	PK
7386	26.84	0.00	12.44	H	39.28	53.98	14.70	AV

4. 242 Tones RU 61

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

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4824	44.39	0.00	3.58	V	47.97	73.98	26.01	PK
4824	31.82	0.00	3.58	V	35.40	53.98	18.58	AV
7236	38.42	0.00	12.72	V	51.14	73.98	22.84	PK
7236	26.18	0.00	12.72	V	38.90	53.98	15.08	AV
4824	43.53	0.00	3.58	H	47.11	73.98	26.87	PK
4824	31.86	0.00	3.58	H	35.44	53.98	18.54	AV
7236	38.74	0.00	12.72	H	51.46	73.98	22.52	PK
7236	26.38	0.00	12.72	H	39.10	53.98	14.88	AV

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

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4874	43.69	0.00	3.64	V	47.33	73.98	26.65	PK
4874	32.00	0.00	3.64	V	35.64	53.98	18.34	AV
7311	39.08	0.00	11.97	V	51.05	73.98	22.93	PK
7311	26.73	0.00	11.97	V	38.70	53.98	15.28	AV
4874	44.41	0.00	3.64	H	48.05	73.98	25.93	PK
4874	32.07	0.00	3.64	H	35.71	53.98	18.27	AV
7311	38.98	0.00	11.97	H	50.95	73.98	23.03	PK
7311	26.93	0.00	11.97	H	38.90	53.98	15.08	AV

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

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4924	43.19	0.00	4.84	V	48.03	73.98	25.95	PK
4924	31.44	0.00	4.84	V	36.28	53.98	17.70	AV
7386	38.73	0.00	12.44	V	51.17	73.98	22.81	PK
7386	26.76	0.00	12.44	V	39.20	53.98	14.78	AV
4924	43.44	0.00	4.84	H	48.28	73.98	25.70	PK
4924	31.49	0.00	4.84	H	36.33	53.98	17.65	AV
7386	39.25	0.00	12.44	H	51.69	73.98	22.29	PK
7386	27.03	0.00	12.44	H	39.47	53.98	14.51	AV

5. SU

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2412 MHz
Channel No.	01 Ch
RU offset	None

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4824	43.91	0.00	3.58	V	47.49	73.98	26.49	PK
4824	31.83	0.00	3.58	V	35.41	53.98	18.57	AV
7236	38.05	0.00	12.72	V	50.77	73.98	23.21	PK
7236	26.15	0.00	12.72	V	38.87	53.98	15.11	AV
4824	44.02	0.00	3.58	H	47.60	73.98	26.38	PK
4824	31.90	0.00	3.58	H	35.48	53.98	18.50	AV
7236	38.55	0.00	12.72	H	51.27	73.98	22.71	PK
7236	26.45	0.00	12.72	H	39.17	53.98	14.81	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2437 MHz
Channel No.	06 Ch
RU offset	None

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4874	43.93	0.00	3.64	V	47.57	73.98	26.41	PK
4874	31.97	0.00	3.64	V	35.61	53.98	18.37	AV
7311	38.64	0.00	11.97	V	50.61	73.98	23.37	PK
7311	26.80	0.00	11.97	V	38.77	53.98	15.21	AV
4874	44.06	0.00	3.64	H	47.70	73.98	26.28	PK
4874	32.09	0.00	3.64	H	35.73	53.98	18.25	AV
7311	39.13	0.00	11.97	H	51.10	73.98	22.88	PK
7311	27.01	0.00	11.97	H	38.98	53.98	15.00	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2462 MHz
Channel No.	11 Ch
RU offset	None

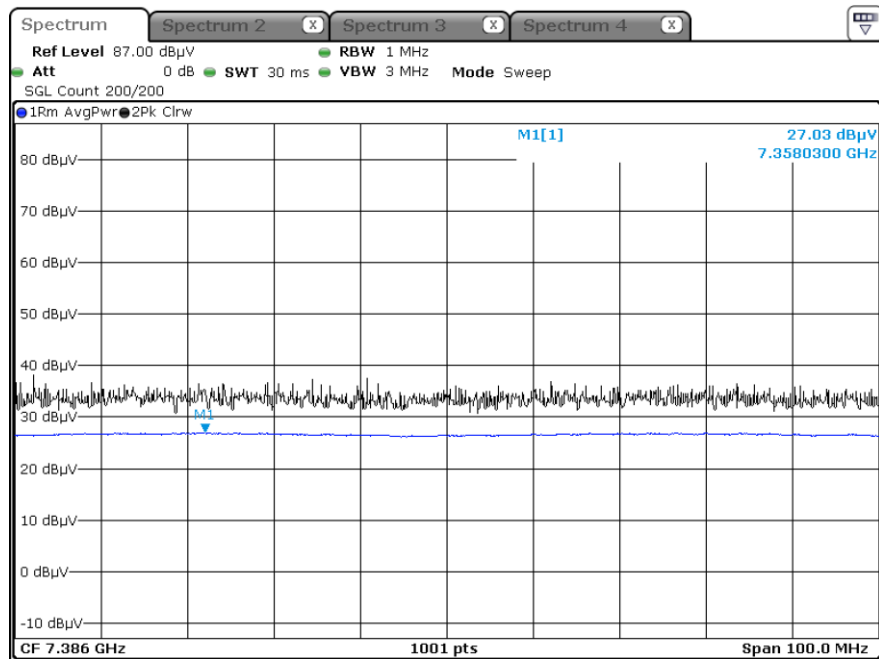
Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4924	43.32	0.00	4.84	V	48.16	73.98	25.82	PK
4924	31.43	0.00	4.84	V	36.27	53.98	17.71	AV
7386	38.97	0.00	12.44	V	51.41	73.98	22.57	PK
7386	26.85	0.00	12.44	V	39.29	53.98	14.69	AV
4924	43.44	0.00	4.84	H	48.28	73.98	25.70	PK
4924	31.51	0.00	4.84	H	36.35	53.98	17.63	AV
7386	39.48	0.00	12.44	H	51.92	73.98	22.06	PK
7386	26.89	0.00	12.44	H	39.33	53.98	14.65	AV

Test Plots(242T RU 61)

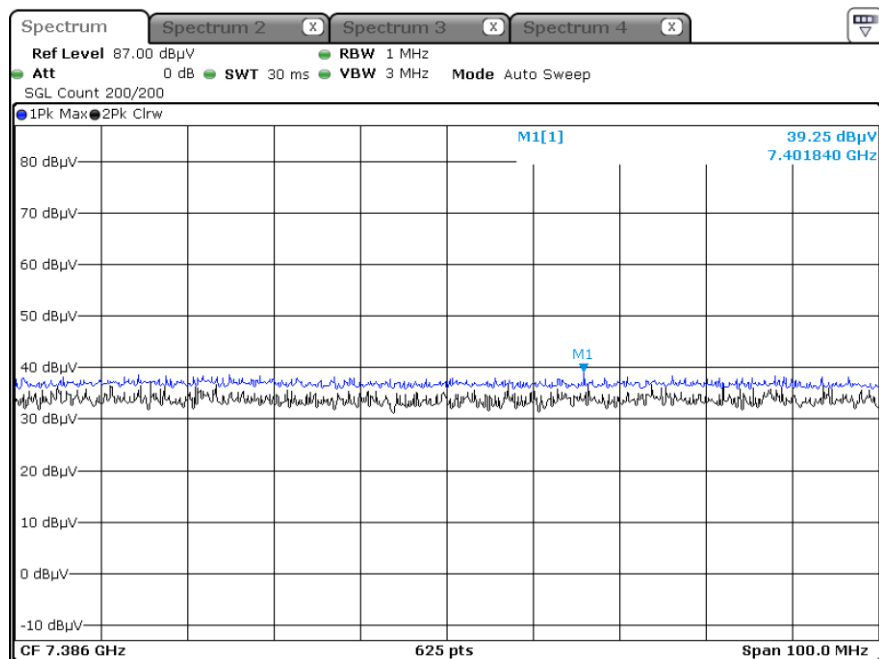
Note:

In order to simplify, Plots of worst case are only reported.

Radiated Spurious Emissions plot – Average result (802.11ax(HE20), Ch.11 3rd Harmonic, X-H)



Radiated Spurious Emissions plot – Peak result (802.11ax(HE20), Ch.11 3rd Harmonic, X-H)



9.7 RADIATED RESTRICTED BAND EDGES

[MIMO_CDD(Ant.1+Ant.2)]

1. 26 Tones

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

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	A.F+C.L +D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2390.0	24.830	0.00	34.35	H	59.18	73.98	14.80	PK
2390.0	9.860	0.00	34.35	H	44.21	53.98	9.77	AV
2390.0	23.210	0.00	34.35	V	57.56	73.98	16.42	PK
2390.0	9.620	0.00	34.35	V	43.97	53.98	10.01	AV

Operation Mode: 802.11ax(HE20)
Transfer MCS Index: 0
RU Index: 8
Operating Frequency: 2462 MHz
Channel No. 11 Ch

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	A.F+C.L +D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	25.610	0.00	34.83	H	60.44	73.98	13.55	PK
2483.5	9.140	0.00	34.83	H	43.97	53.98	10.02	AV
2483.5	24.600	0.00	34.83	V	59.43	73.98	14.56	PK
2483.5	9.110	0.00	34.83	V	43.94	53.98	10.05	AV

2. 52 Tones

Operation Mode: 802.11ax(HE20)

Transfer MCS Index: 0

RU Index: 37

Operating Frequency: 2412 MHz

Channel No. 01 Ch

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	A.F+C.L +D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2390.0	26.960	0.00	34.35	H	61.31	73.98	12.67	PK
2390.0	11.140	0.00	34.35	H	45.49	53.98	8.49	AV
2390.0	25.870	0.00	34.35	V	60.22	73.98	13.76	PK
2390.0	10.060	0.00	34.35	V	44.41	53.98	9.57	AV

Operation Mode: 802.11ax(HE20)

Transfer MCS Index: 0

RU Index: 40

Operating Frequency: 2462 MHz

Channel No. 11 Ch

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	A.F+C.L +D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	29.470	0.00	34.83	H	64.30	73.98	9.69	PK
2483.5	9.940	0.00	34.83	H	44.77	53.98	9.22	AV
2483.5	28.390	0.00	34.83	V	63.22	73.98	10.77	PK
2483.5	9.870	0.00	34.83	V	44.70	53.98	9.29	AV

3. 106 Tones

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

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	A.F+C.L +D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2390.0	27.920	0.00	34.35	H	62.27	73.98	11.71	PK
2390.0	11.810	0.00	34.35	H	46.16	53.98	7.82	AV
2390.0	26.110	0.00	34.35	V	60.46	73.98	13.52	PK
2390.0	10.790	0.00	34.35	V	45.14	53.98	8.84	AV

Operation Mode: 802.11ax(HE20)
Transfer MCS Index: 0
RU Index: 54
Operating Frequency: 2462 MHz
Channel No. 11 Ch

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	A.F+C.L +D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	34.910	0.00	34.83	H	69.74	73.98	4.25	PK
2483.5	11.890	0.00	34.83	H	46.72	53.98	7.27	AV
2483.5	33.620	0.00	34.83	V	68.45	73.98	5.54	PK
2483.5	10.920	0.00	34.83	V	45.75	53.98	8.24	AV

4. 242 Tones

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

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	A.F+C.L +D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2390	35.650	0.00	34.35	H	70.00	73.98	3.98	PK
#2389~2390	17.350	0.00	34.35	H	51.70	53.98	2.28	AV
2389	17.290	0.00	34.35	H	51.64	53.98	2.34	AV
2390	34.170	0.00	34.35	V	68.52	73.98	5.46	PK
#2389~2390	16.170	0.00	34.35	V	50.52	53.98	3.46	AV
2389	16.050	0.00	34.35	V	50.40	53.98	3.58	AV

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

Operation Mode: 802.11ax(HE20)
Transfer MCS Index: 0
RU Index: 61
Operating Frequency: 2457 MHz
Channel No. 10 Ch

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	A.F+C.L +D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	31.350	0.00	34.83	H	66.18	73.98	7.81	PK
2483.5	15.270	0.00	34.83	H	50.10	53.98	3.89	AV
2483.5	29.880	0.00	34.83	V	64.71	73.98	9.28	PK
2483.5	14.190	0.00	34.83	V	49.015	53.98	4.97	AV

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

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	A.F+C.L +D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	32.460	0.00	34.83	H	67.29	73.98	6.70	PK
#2483.5~2484.5	14.930	0.00	34.83	H	49.76	53.98	4.23	AV
2484.5	14.590	0.00	34.83	H	49.42	53.98	4.57	AV
2483.5	31.530	0.00	34.83	V	66.36	73.98	7.63	PK
#2483.5~2484.5	13.820	0.00	34.83	V	48.65	53.98	5.34	AV
2484.5	13.670	0.00	34.83	V	48.50	53.98	5.49	AV

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

5. SU

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

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	A.F+C.L +D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2390	30.150	0.00	34.35	H	64.50	73.98	9.48	PK
#2389~2390	15.050	0.00	34.35	H	49.40	53.98	4.58	AV
2389	14.990	0.00	34.35	H	49.34	53.98	4.64	AV
2390	28.680	0.00	34.35	V	63.03	73.98	10.95	PK
#2389~2390	14.640	0.00	34.35	V	48.99	53.98	4.99	AV
2389	14.520	0.00	34.35	V	48.87	53.98	5.11	AV

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

Operation Mode: 802.11ax(HE20)
Transfer MCS Index: 0
RU Index: 61
Operating Frequency: 2457 MHz
Channel No. 10 Ch

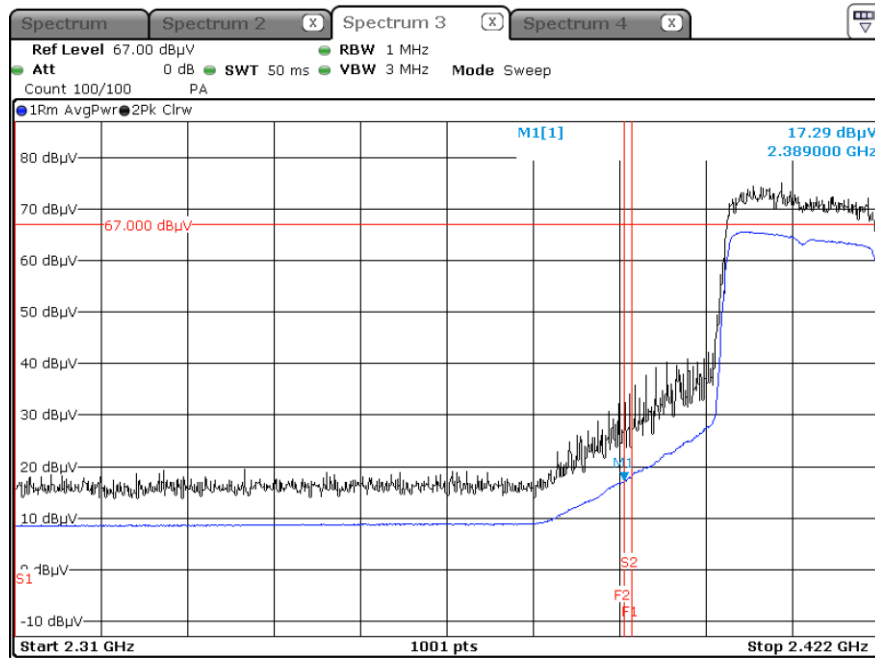
Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	A.F+C.L +D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	30.350	0.00	34.83	H	65.18	73.98	8.81	PK
2483.5	14.740	0.00	34.83	H	49.57	53.98	4.42	AV
2483.5	29.460	0.00	34.83	V	64.29	73.98	9.70	PK
2483.5	13.870	0.00	34.83	V	48.70	53.98	5.29	AV

Test Plots [MIMO_CDD(Ant.1+Ant.2)]

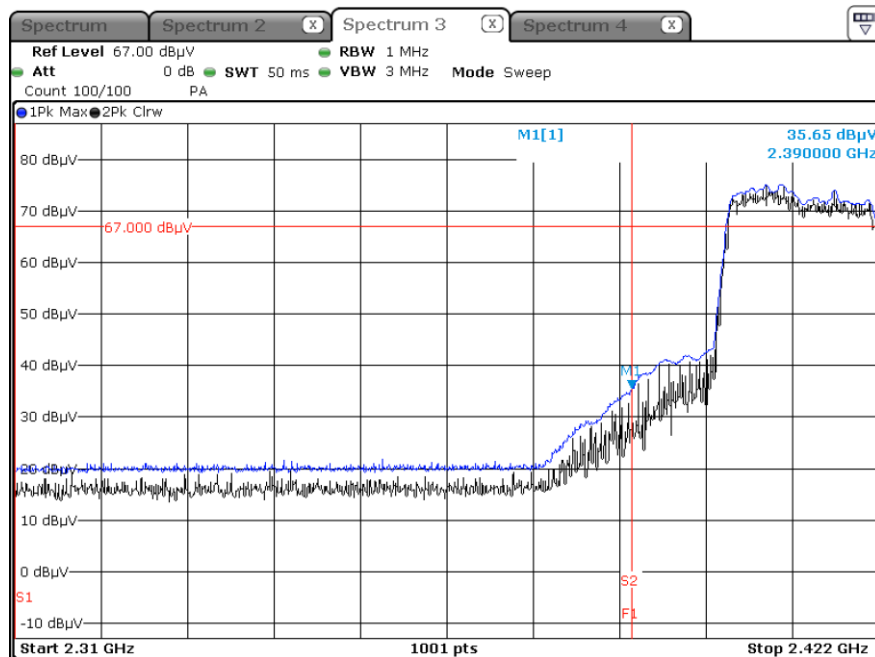
Note:

In order to simplify the report, Plots of worst case are only reported.

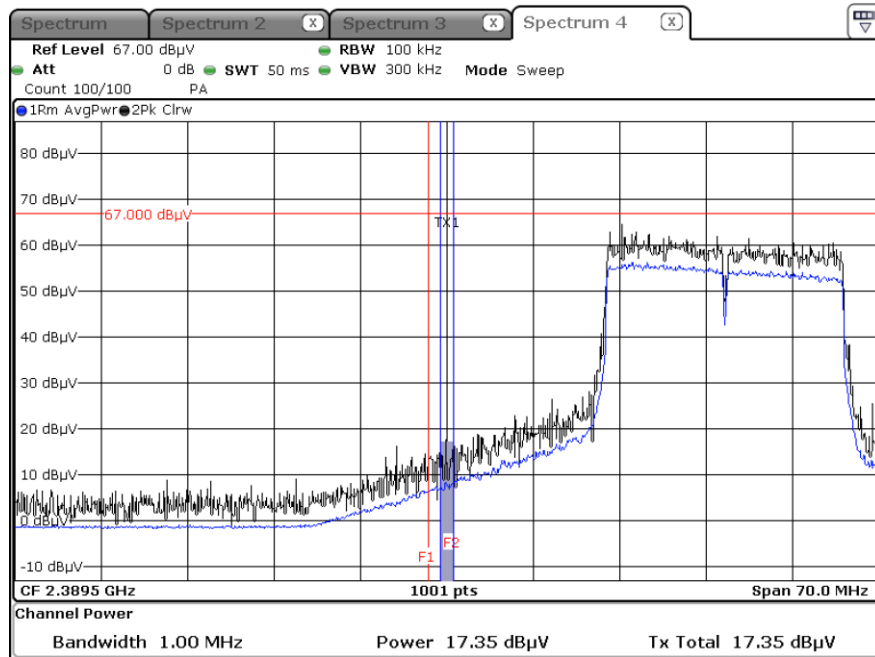
Average result(802.11ax(HE20), MCS0, 242 Tone, RU 61 ch.1, X-H)



Peak result(802.11ax(HE20), MCS0, 242 Tone, RU 61 ch.1, X-H)



Integration method Used_Peak result(802.11ax(HE20), MCS0, 242 Tone, RU 61 ch.1, X-H)



10. LIST OF TEST EQUIPMENT

Conducted Test

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
LISN	ENV216	Rohde & Schwarz	102245	08/02/2024	Annual
EMI Test Receiver	ESR	Rohde & Schwarz	101910	05/26/2024	Annual
Temperature Chamber	SU-642	ESPEC	0093008124	02/22/2024	Annual
Signal Analyzer	N9030A	Agilent	MY52350879	01/02/2024	Annual
Power Measurement Set	OSP 120	Rohde & Schwarz	101231	06/09/2024	Annual
Power Meter	N1911A	Agilent	MY45100523	03/06/2024	Annual
Power Sensor	N1921A	Agilent	MY57820067	03/06/2024	Annual
Directional Coupler	87300B	Agilent	3116A03621	11/02/2023	Annual
Power Splitter	11667B	Hewlett Packard	05001	04/19/2024	Annual
DC Power Supply	E3632A	H.P	KR75303243	04/24/2024	Annual
Attenuator(10 dB)	8493C	Hewlett Packard	07560	06/12/2024	Annual
Software	EMC32	Rohde & Schwarz	N/A	N/A	N/A
FCC WLAN&BT&BLE Conducted Test Software v3.0	N/A	HCT CO., LTD.	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

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
Controller(Antenna mast)	CO3000	Innco system	CO3000-4p	N/A	N/A
Antenna Position Tower	MA4640/800-XP-EP	Innco system	N/A	N/A	N/A
Controller	EM1000	Audix	060520	N/A	N/A
Turn Table	N/A	Audix	N/A	N/A	N/A
Loop Antenna	FMZB 1513	Rohde & Schwarz	1513-333	03/17/2024	Biennial
Hybrid Antenna	VULB 9168	Schwarzbeck	760	02/24/2025	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	02299	03/24/2024	Biennial
Horn Antenna (15GHz ~ 40 GHz)	BBHA9170	Schwarzbeck	BBHA9170342	09/29/2024	Biennial
Spectrum Analyzer	FSV40	Rohde & Schwarz	100901	03/27/2024	Annual
Signal Analyzer	N9030A	Agilent	MY52350879	01/02/2024	Annual
Band Reject Filter	WRCJV12-4900-5100-5900- 6100-50SS	Wainwright Instruments	5	06/12/2024	Annual
Band Reject Filter	WRCJV12-4900-5100-5900- 6100-50SS	Wainwright Instruments	6	06/12/2024	Annual
Band Reject Filter	WRCJV2400/2483.5- 2370/2520-60/12SS	Wainwright Instruments	2	01/05/2024	Annual
Band Reject Filter	WRCJV5100/5850-40/50- 8EEK	Wainwright Instruments	1	02/09/2024	Annual
RF Switching System	FMSR-04B (3G HPF+LNA)	T&M SYSTEM	S2L1	16/01/2024	Annual
RF Switching System	FMSR-04B (10dB ATT+LNA)	T&M SYSTEM	S2L2	16/01/2024	Annual
RF Switching System	FMSR-04B (3dB ATT+LNA)	T&M SYSTEM	S2L3	16/01/2024	Annual
RF Switching System	FMSR-04B (LNA)	T&M SYSTEM	S2L4	16/01/2024	Annual
RF Switching System	FMSR-04B (7G HPF+LNA)	T&M SYSTEM	S2L5	16/01/2024	Annual
Power Amplifier	CBL18265035	CERNEX	22966	12/01/2023	Annual
Power Amplifier	CBL26405040	CERNEX	25956	03/02/2024	Annual

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-2310-FC014-P