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TEL: +82-31-645-6300 **FAX: +82-31-645-6401**

FCC DTS REPORT

Certification

Applicant Name:
SAMSUNG Electronics Co., Ltd.

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

Date of Issue:
October 17, 2023

Test Site/Location:
74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA

Report No.: HCT-RF-2310-FC057

FCC ID:	**A3LSMS926B**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**

Model:	SM-S926B/DS
Additional Model:	SM-S926B
EUT Type:	Mobile phone
Average Output Power:	Ant.1 : 15.89 dBm Ant.2 : 15.26 dBm MIMO_CDD(Ant1+Ant2) : 18.59 dBm
Frequency Range:	2 412 MHz ~ 2 472 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.

REVIEWED BY

Report prepared by : Woong Jin Kim
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.

Test Report Statement:
The above Test Report is not related to the accredited test result by (KS Q) ISO/IEC 17025 and KOLAS(Korea Laboratory Accreditation Scheme), which signed the ILAC-MRA.

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-2310-FC057	October 17, 2023	- First Approval Report

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1. EUT DESCRIPTION

Model	SM-S926B/DS		
Additional Model	SM-S926B		
EUT Type	Mobile phone		
Power Supply	DC 3.88 V		
Frequency Range	2 412 MHz ~ 2 472 MHz		
Max. RF Output Power	Peak Power	Ant.1	25.37 dBm
		Ant.2	24.78 dBm
		MIMO_CDD(Ant1+Ant2)	28.09 dBm
	Average Power	Ant.1	15.89 dBm
		Ant.2	15.26 dBm
		MIMO_CDD(Ant1+Ant2)	18.59 dBm
Modulation Type	OFDM, OFDMA		
Number of Channels	13 Channels		
Date(s) of Tests	August 30, 2023 ~ October 13, 2023		
Serial number	Radiated: R3CW70NE1WX Conducted : 74189d99fd387ece		

ANTENNA CONFIGURATIONS

1. The device employs MIMO technology. Below are the possible configurations

Configurations	SISO		MIMO	
	ANT.1	ANT.2	CDD	SDM
802.11ax(HE20)	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 6 GHz 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 + 5 GHz WiFi MIMO	on	on	on	on					Scenario1
2.4 GHz WiFi MIMO + 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		Scenario2
Bluetooth ANT.1 + 2.4 GHz WiFi ANT.2 + 6 GHz WiFi MIMO		on			on	on	on		
Dual Bluetooth + 5 GHz WiFi MIMO			on	on			on	on	Scenario3
Dual Bluetooth + 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)

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

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

Ant Gain (dBi)		N_{ANT}/ N_{ss}	Directional Gain (dBi)	Directional Gain (dBi)
			CDD	SDM
ANT1	-2.53	2 / 2	-0.34	-2.53
ANT2	-4.25			

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.

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

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

Sample MIMO Calculation:

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

Ant1 + Ant 2 = MIMO

(11.58 dBm + 12.08 dBm) = (14.387 mW + 16.143 mW) = 30.53 mW = 14.88 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.

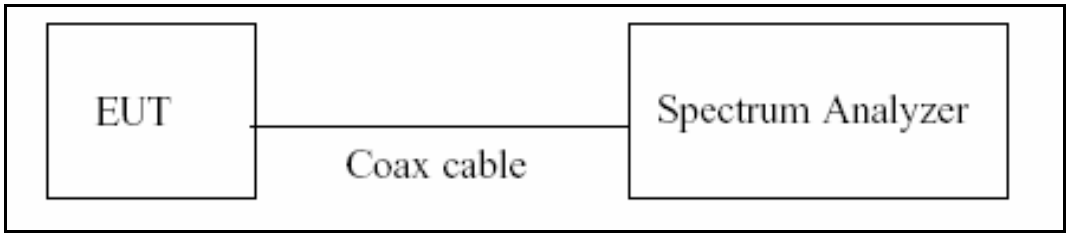
The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

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 ≤ 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*.

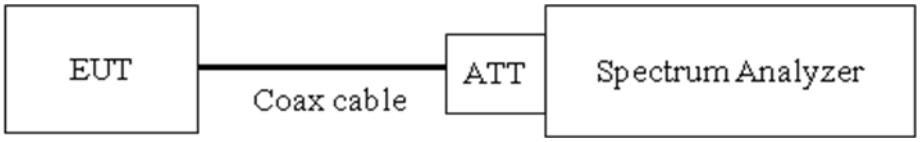
1. RBW = 8 MHz (the largest available value)
2. VBW = 8 MHz (≥ RBW)
3. SPAN = 0 Hz
4. Detector = Peak
5. Number of points in sweep > 100
6. Trace mode = Clear write
7. Measure T_{total} and T_{on}
8. Calculate Duty Cycle = T_{on} / T_{total} and Duty Cycle Factor = 10log(1/Duty Cycle)

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 ≥ 3 x 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.

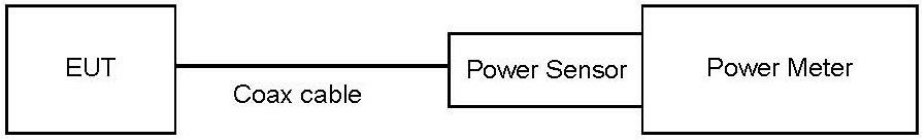
Note : We tested OBW using the automatic bandwidth measurement capability of a spectrum analyzer.

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

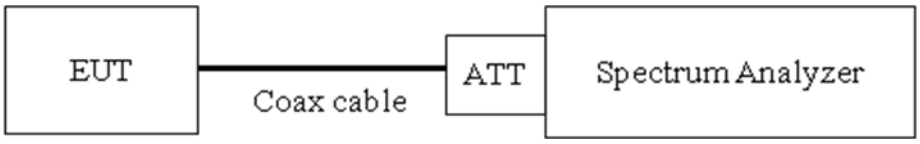
▪ Conducted Output Power(Average) = Measured Value + ATT loss + Cable loss + Duty Cycle Factor

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 kHz ≤ RBW ≤ 100 kHz.
4) VBW ≥ 3 x 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 ≥ [2 × 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

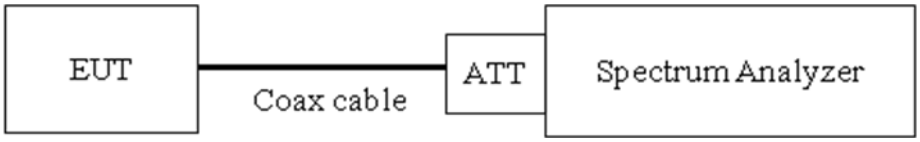
7.5. Conducted Band Edge (Out of Band Emissions) & Conducted Spurious Emissions

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 ≥ 3 x 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 ≥ 2 x 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	20.06
100	20.14
200	20.17
300	20.21
400	20.28
500	20.28
600	20.28
700	20.28
800	20.30
900	20.31
1000	20.35
2000	20.55
2400	20.62
3000	20.67
4000	20.74
5000	20.86
5850	20.84
6000	20.83
7000	20.93
8000	20.97
9000	21.09
10000	21.18
11000	21.27
12000	21.33
13000	21.33
14000	21.40
15000	21.49
16000	21.52
17000	21.55
18000	21.63
19000	21.65
20000	21.66
21000	21.76
22000	21.82
23000	21.86
24000	21.90
25000	21.92

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

2. Factor = Attenuator loss + Cable loss

3.Total Port offest = Attenuator loss + Cable loss + EUT cable loss(0.54 dB) = 21.16 dB

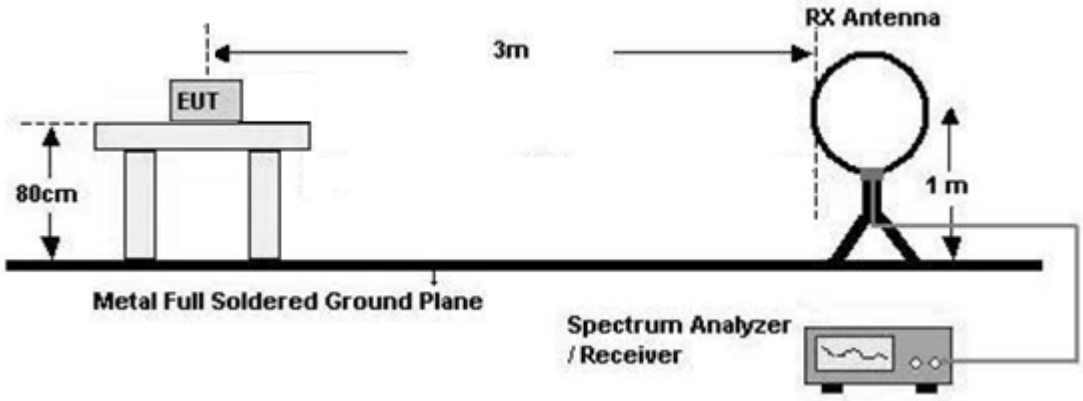
7.6. Radiated Test

Limit

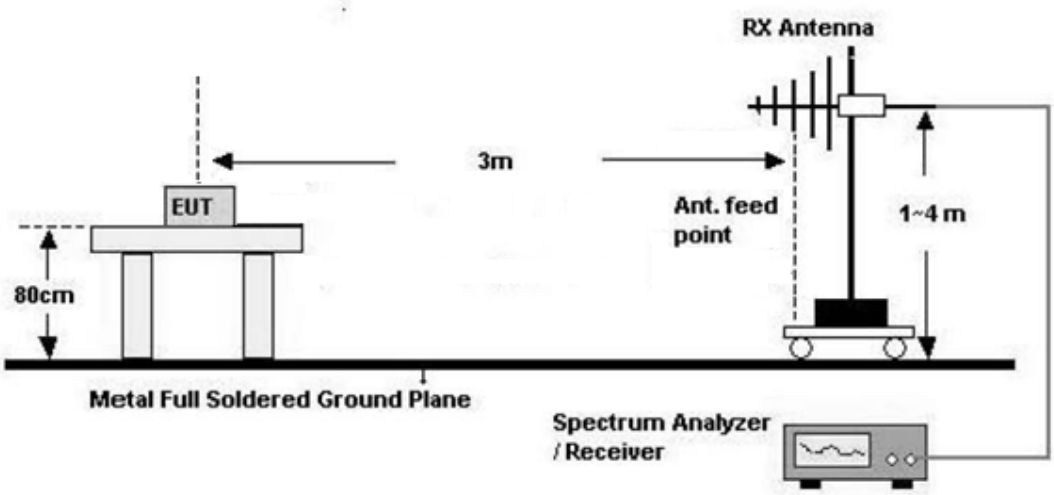
Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

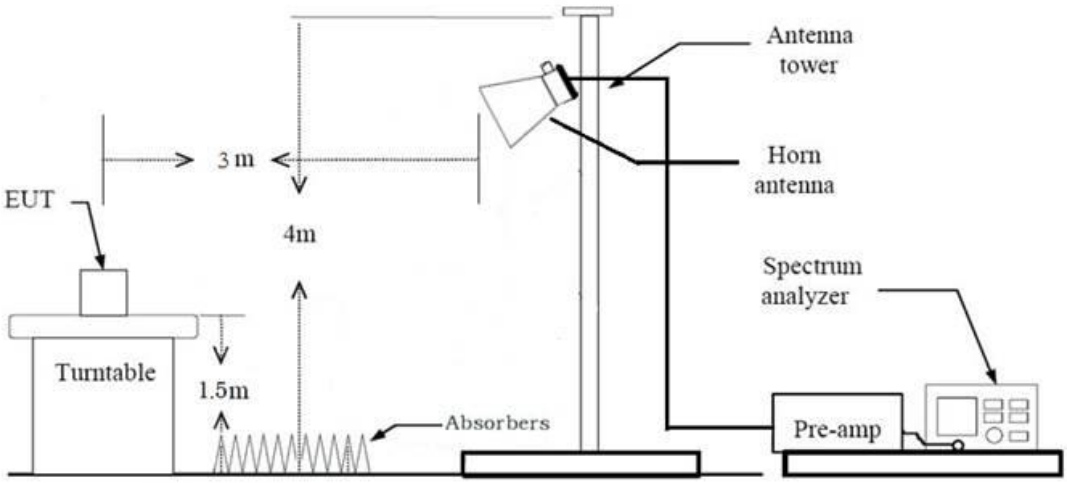
Below 30 MHz



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) = 40log(3 m/300 m) = - 80 dB
   Measurement Distance : 3 m
7. Distance Correction Factor(0.490 MHz – 30 MHz) = 40log(3 m/30 m) = - 40 dB
   Measurement Distance : 3 m
8. Spectrum Setting
   - Frequency Range = 9 kHz ~ 30 MHz
   - Detector = Peak
   - Trace = Maxhold
   - RBW = 9 kHz
   - VBW ≥ 3 x 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 ≥ 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 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 ≥ 3 x RBW

(2) Measurement Type(Average): Duty cycle ≥ 98 %

- Measured Frequency Range : 1 GHz – 25 GHz
- Detector = RMS
- Averaging type = power (*i.e.*, RMS)
- RBW = 1 MHz
- VBW ≥ 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 ±2 %

- Measured Frequency Range : 1 GHz – 25 GHz
- Detector = RMS
- Averaging type = power (*i.e.*, RMS)
- RBW = 1 MHz
- VBW ≥ 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 % 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 = 20log (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 ≥ 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 ≥ 3 x RBW
   (2) Measurement Type(Average): Duty cycle ≥ 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 ≥ 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 ±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 ≥ 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 % 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 = 20log (test distance / 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 ≥ 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 μH/50 ohms line impedance stabilization network (LISN).

Frequency Range (MHz)	Limits (dBμV)	
	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.
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, 12, 13	0, 8
52	1, 11, 12, 13	37, 40
106	1, 11, 12, 13	53, 54
242	1, 11, 12, 13	61
SU	1, 11, 12, 13	-

2. SM-S926B/DS, SM-S926B were tested and the worst case results are reported.
(Worst case : SM-S926B/DS)

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)
 - Radiated Spurious Emissions Worstcase : MIMO_CDD(Ant.1+Ant.2)
 - Radiated Restricted Band Edge 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 : 52 T	38
	ADDITIONAL TONE : 26T, 106T, 242T, SU	26T : 8 52T : 38 106T : 54 242T : 61 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-S926B/DS, SM-S926B were tested and the worst case results are reported.

(Worst case : SM-S926B/DS)

Radiated test(RSDB)

1. Please refer to the [BT], [DTS], [UNII] Test Report.

2. SM-S926B/DS, SM-S926B were tested and the worst case results are reported.

(Worst case : SM-S926B/DS)

AC Power line Conducted Emissions

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

2. SM-S926B/DS, SM-S926B were tested and the worst case results are reported.

(Worst case : SM-S926B/DS)

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

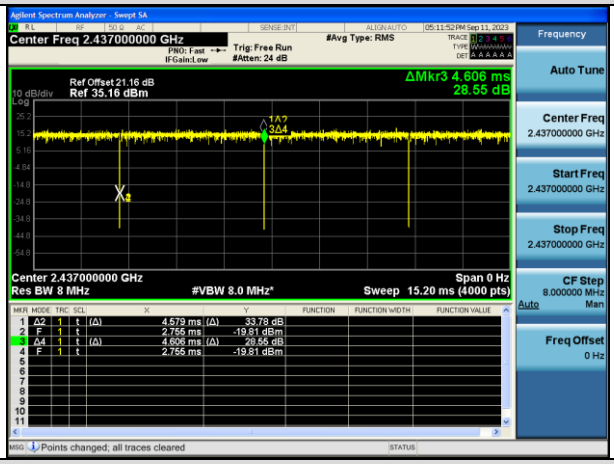
9.1 DUTY CYCLE

Mode	Tone (T)	Data Rate	On Time (ms)	Total Time (ms)	Duty Cycle	Duty Cycle Factor (dB)
802.11ax (HE20)	26	MCS0	4.579	4.606	0.994	0.025
		MCS1	4.566	4.594	0.994	0.026
		MCS2	3.501	3.526	0.993	0.031
		MCS3	2.642	2.668	0.991	0.041
		MCS4	1.786	1.809	0.987	0.055
		MCS5	1.353	1.378	0.982	0.081
		MCS6	1.213	1.236	0.982	0.081
		MCS7	1.102	1.127	0.978	0.098
		MCS8	0.925	0.950	0.973	0.117
		MCS9	0.844	0.866	0.974	0.116
	52	MCS0	4.568	4.594	0.994	0.025
		MCS1	2.642	2.668	0.991	0.041
		MCS2	1.786	1.809	0.987	0.057
		MCS3	1.353	1.378	0.982	0.081
		MCS4	0.925	0.950	0.973	0.117
		MCS5	0.707	0.732	0.965	0.153
		MCS6	0.664	0.689	0.963	0.163
		MCS7	0.656	0.681	0.963	0.165
		MCS8	0.656	0.681	0.963	0.165
		MCS9	0.655	0.680	0.963	0.164
	106	MCS0	2.488	2.516	0.989	0.048
		MCS1	1.277	1.302	0.981	0.085
		MCS2	0.874	0.899	0.972	0.124
		MCS3	0.674	0.697	0.967	0.145
		MCS4	0.623	0.646	0.964	0.160
		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	0.611	0.636	0.960	0.177
		MCS9	0.605	0.631	0.960	0.178
	242	MCS0	1.122	1.148	0.978	0.097
		MCS1	0.605	0.628	0.964	0.161
		MCS2	0.605	0.628	0.964	0.161
		MCS3	0.605	0.628	0.964	0.161
		MCS4	0.603	0.626	0.964	0.161
		MCS5	0.600	0.622	0.964	0.159
		MCS6	0.595	0.618	0.963	0.163
		MCS7	0.595	0.618	0.963	0.163
		MCS8	0.593	0.618	0.959	0.182
		MCS9	0.593	0.618	0.959	0.182

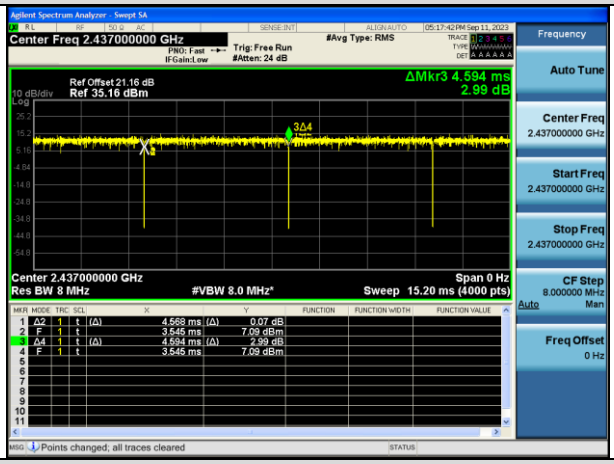
Mode	Tone (T)	Data Rate	On Time (ms)	Total Time (ms)	Duty Cycle	Duty Cycle Factor (dB)
802.11ax(SU)	BW 20	MCS0	5.445	5.464	0.997	0.015
		MCS1	5.445	5.464	0.997	0.015
		MCS2	5.445	5.464	0.997	0.015
		MCS3	5.445	5.464	0.997	0.015
		MCS4	5.445	5.464	0.997	0.015
		MCS5	5.445	5.464	0.997	0.015
		MCS6	5.445	5.464	0.997	0.015
		MCS7	5.445	5.464	0.997	0.015
		MCS8	5.445	5.464	0.997	0.015
		MCS9	5.445	5.464	0.997	0.015

▣ Test Plots

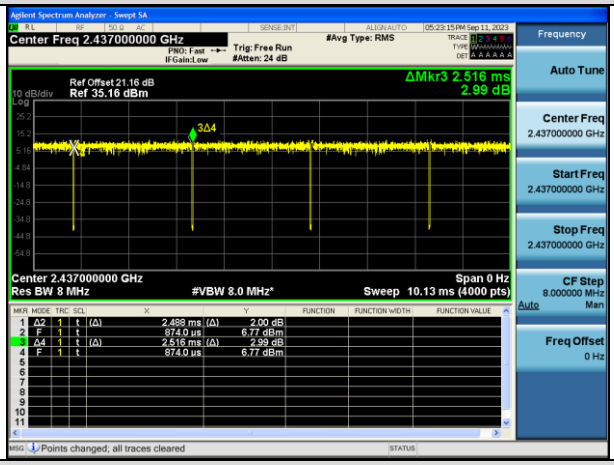
26 Tones MCS0



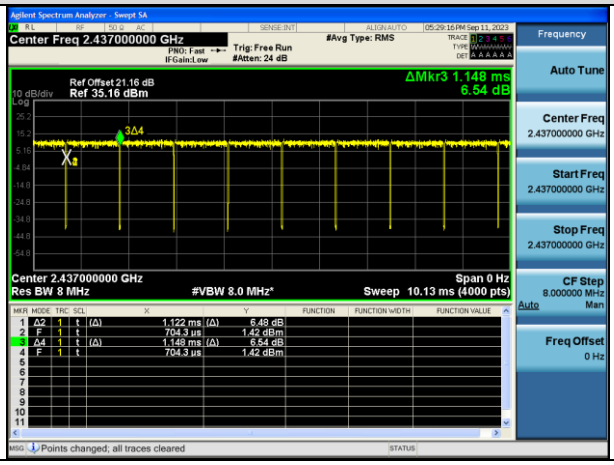
52 Tones MCS0



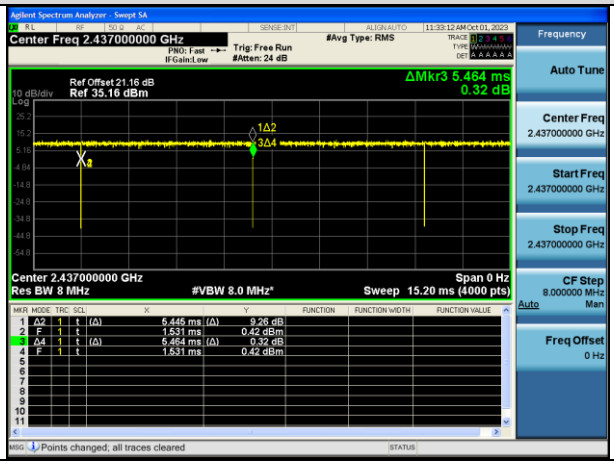
106 Tones MCS0



242 Tones MCS0



SU MCS0



9.2 6 dB BANDWIDTH

Limit : > 500 kHz

[ANT1]

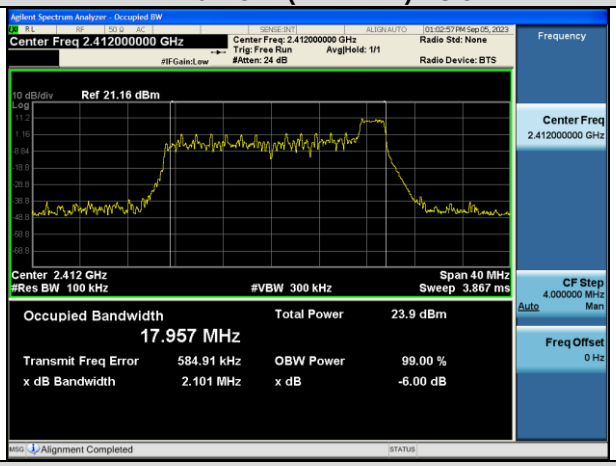
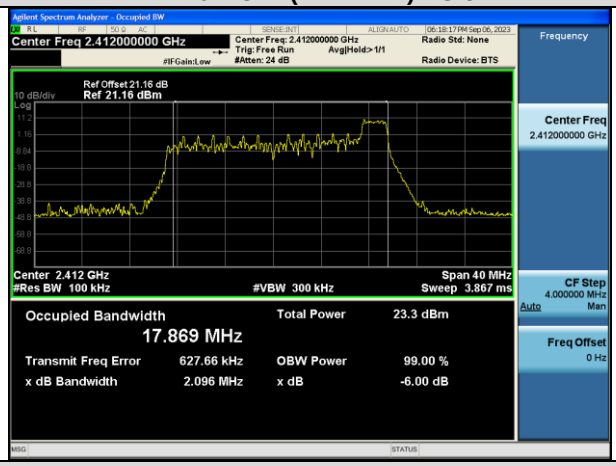
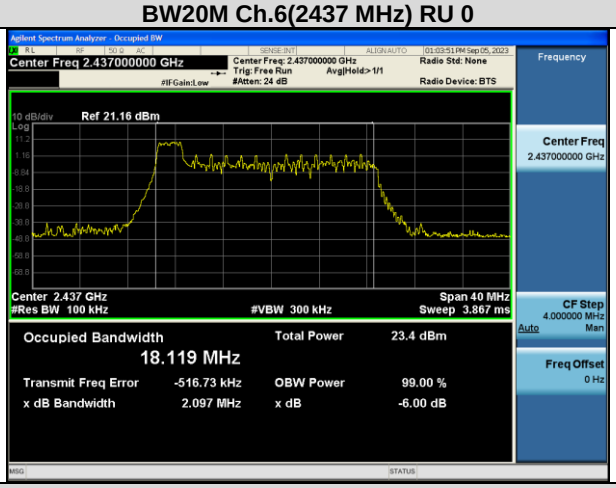
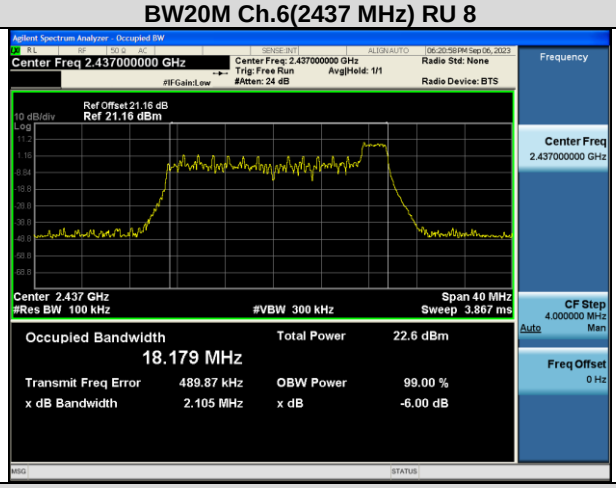
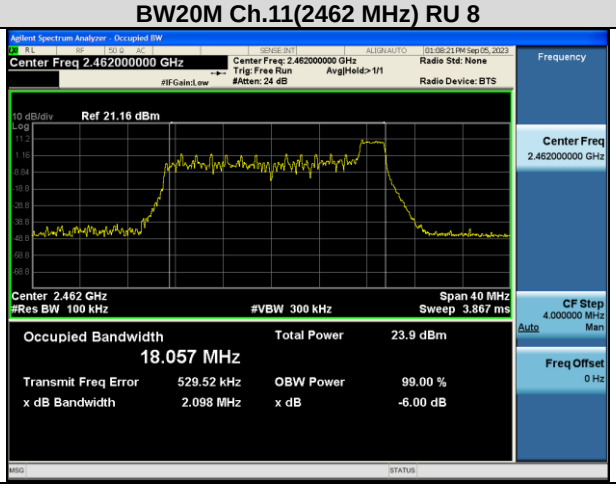
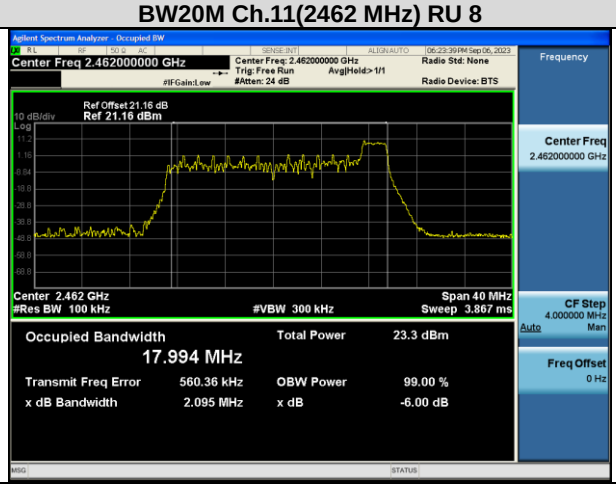
Mode	Freq. [MHz]	CH.	6dB Bandwidth [dBm]			99% Occupied Bandwidth [dBm]		
			RU Index : Low	RU Index : Mid	RU Index : High	RU Index : Low	RU Index : Mid	RU Index : High
HE20 26T	2412	1	2.103	2.711	2.101	18.148	17.077	17.957
	2437	6	2.097	2.704	2.097	18.119	17.082	18.070
	2462	11	2.103	2.706	2.098	18.115	17.127	18.057
	2467	12	2.110	2.710	2.106	18.132	17.111	18.064
	2472	13	2.098	2.711	2.076	18.058	17.109	18.161
HE20 52T	2412	1	17.07	15.12	4.504	18.137	17.131	17.948
	2437	6	17.03	15.11	17.00	18.096	17.110	18.005
	2462	11	17.08	15.13	15.76	18.107	17.168	18.022
	2467	12	17.08	15.11	8.240	18.101	17.160	18.022
	2472	13	14.50	15.11	17.01	18.073	17.136	18.115
HE20 106T	2412	1	18.15	-	17.16	18.159	-	18.038
	2437	6	18.12	-	17.37	18.124	-	18.104
	2462	11	18.17	-	17.36	18.141	-	18.111
	2467	12	18.16	-	17.37	18.136	-	18.130
	2472	13	17.17	-	17.38	18.110	-	18.188
HE20 242T	2412	1	-	19.00	-	-	18.930	-
	2437	6	-	19.05	-	-	18.931	-
	2462	11	-	19.05	-	-	18.942	-
	2467	12	-	19.05	-	-	18.939	-
	2472	13	-	19.05	-	-	18.936	-
HE20 SU	2412	1	-	19.01	-	-	18.914	-
	2437	6	-	19.07	-	-	18.907	-
	2462	11	-	19.07	-	-	18.919	-
	2467	12	-	19.04	-	-	18.910	-
	2472	13	-	19.04	-	-	18.907	-

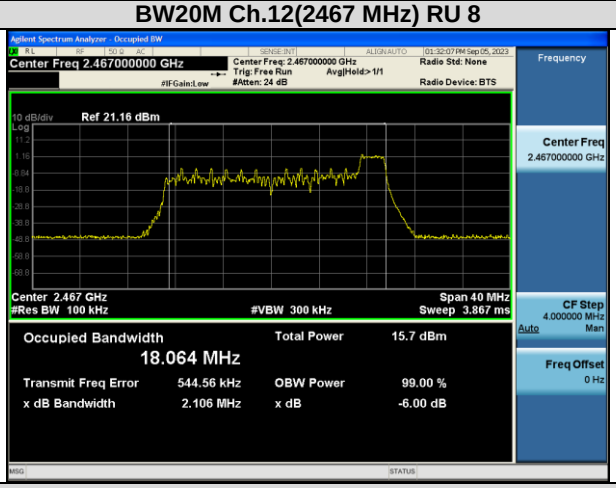
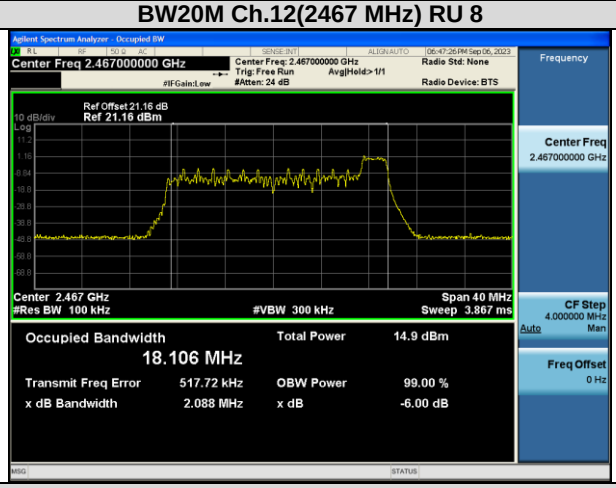
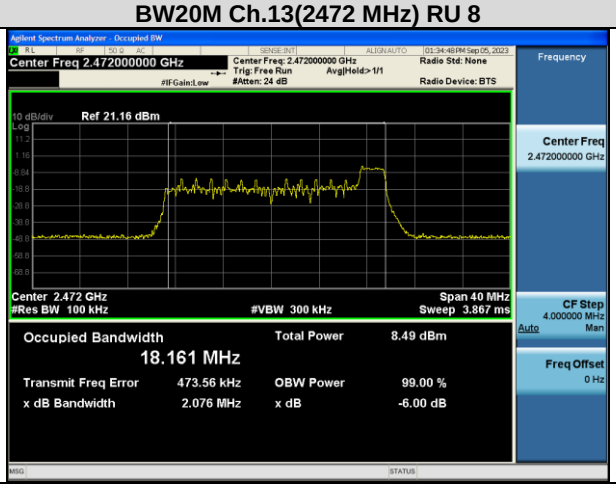
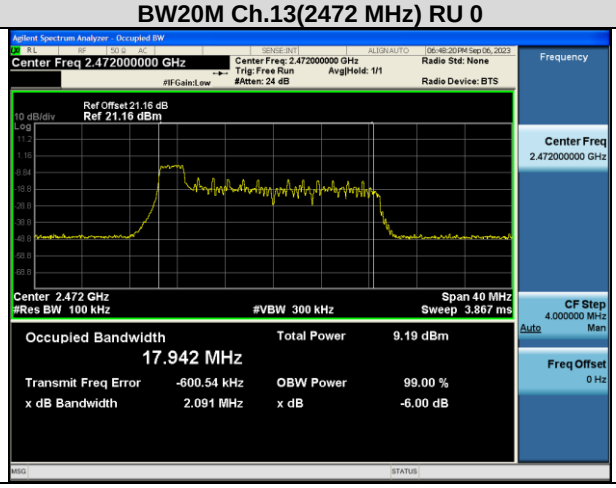
[ANT2]

Mode	Freq. [MHz]	CH.	6dB Bandwidth [dBm]			99% Occupied Bandwidth [dBm]		
			RU Index : Low	RU Index : Mid	RU Index : High	RU Index : Low	RU Index : Mid	RU Index : High
HE20 26T	2412	1	17.03	2.711	2.096	18.183	17.016	17.869
	2437	6	2.112	2.706	2.105	18.066	17.165	18.179
	2462	11	2.096	2.712	2.095	18.122	17.030	17.994
	2467	12	2.099	2.700	2.088	18.066	17.014	18.106
	2472	13	2.091	2.705	2.093	17.942	17.128	18.245
HE20 52T	2412	1	17.09	15.12	4.089	18.158	17.107	17.874
	2437	6	4.529	15.11	17.03	18.072	17.181	18.108
	2462	11	17.08	15.12	8.250	18.106	17.102	17.957
	2467	12	17.04	15.10	17.01	18.063	17.076	18.056
	2472	13	4.517	12.57	17.04	18.014	17.157	18.204
HE20 106T	2412	1	18.16	-	17.14	18.168	-	17.969
	2437	6	17.18	-	17.39	18.115	-	18.205
	2462	11	18.12	-	17.14	18.123	-	18.039
	2467	12	17.16	-	17.36	18.089	-	18.124
	2472	13	17.16	-	17.40	18.066	-	18.238
HE20 242T	2412	1	-	18.96	-	-	18.913	-
	2437	6	-	19.06	-	-	18.949	-
	2462	11	-	19.01	-	-	18.909	-
	2467	12	-	19.03	-	-	18.907	-
	2472	13	-	19.00	-	-	18.936	-
HE20 SU	2412	1	-	18.96	-	-	18.884	-
	2437	6	-	19.06	-	-	18.920	-
	2462	11	-	19.00	-	-	18.880	-
	2467	12	-	19.02	-	-	18.878	-
	2472	13	-	18.98	-	-	18.898	-

▣ Test Plots

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

ANT1	ANT2
BW20M Ch.1(2412 MHz) RU 8	BW20M Ch.1(2412 MHz) RU 8
	
BW20M Ch.6(2437 MHz) RU 0	BW20M Ch.6(2437 MHz) RU 8
	
BW20M Ch.11(2462 MHz) RU 8	BW20M Ch.11(2462 MHz) RU 8
	

ANT1	ANT2
BW20M Ch.12(2467 MHz) RU 8	BW20M Ch.12(2467 MHz) RU 8
	
BW20M Ch.13(2472 MHz) RU 8	BW20M Ch.13(2472 MHz) RU 0
	

9.3 OUTPUT POWER

Limit : 30 dBm

Peak Power

[MIMO_CDD(Ant1+Ant2)]

Note:

1. MIMO_CDD(Ant1+Ant2) Peak Power = 10·log((10^(ANT. 1 Peak power /10))+(10^(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	23.17	22.20	25.71	23.36	22.57	25.90	23.79	23.04	26.43
	2437	6	23.54	23.01	26.28	23.10	22.34	25.67	23.54	22.52	26.07
	2462	11	23.59	23.22	26.40	23.16	22.80	25.99	24.03	22.82	26.48
	2467	12	15.04	14.66	17.86	14.73	14.04	17.41	15.33	13.77	17.63
	2472	13	9.99	10.30	13.16	9.70	9.25	12.49	9.68	8.95	12.34
HE20 52T	2412	1	23.94	23.00	26.49	23.96	23.26	26.63	24.63	23.93	27.30
	2437	6	24.34	23.79	27.07	24.35	23.48	26.95	24.30	23.37	26.86
	2462	11	24.49	23.75	27.13	24.26	23.78	27.03	24.69	23.70	27.23
	2467	12	14.82	14.58	17.72	14.71	14.39	17.56	14.90	13.62	17.31
	2472	13	9.93	10.15	13.05	9.76	9.67	12.73	9.54	8.81	12.19
HE20 106T	2412	1	24.88	23.77	27.33	-	-	-	25.20	24.30	27.78
	2437	6	25.06	24.47	27.79	-	-	-	24.96	24.20	27.61
	2462	11	25.21	24.64	27.95	-	-	-	25.34	24.74	28.06
	2467	12	14.64	14.20	17.43	-	-	-	14.70	13.59	17.19
	2472	13	9.65	9.70	12.68	-	-	-	9.44	8.81	12.15
HE20 242T	2412	1	-	-	-	23.37	22.51	25.96	-	-	-
	2437	6	-	-	-	24.50	23.83	27.17	-	-	-
	2462	11	-	-	-	24.70	24.16	27.44	-	-	-
	2467	12	-	-	-	12.81	12.25	15.49	-	-	-
	2472	13	-	-	-	7.82	7.69	10.68	-	-	-
HE20 SU	2412	1	-	-	-	24.03	23.13	26.60	-	-	-
	2437	6	-	-	-	25.19	24.43	27.83	-	-	-
	2462	11	-	-	-	25.37	24.78	28.09	-	-	-
	2467	12	-	-	-	13.83	13.03	16.46	-	-	-
	2472	13	-	-	-	8.80	8.52	11.63	-	-	-

Average Power

[MIMO_CDD(Ant1+Ant2)]

Note:

1. MIMO_CDD(Ant1+Ant2) Average Power = 10·log(((10^(ANT. 1 Average power /10))+(10^(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	12.27	11.03	14.71	12.51	11.95	15.25	13.57	12.78	16.21
	2437	6	12.76	12.57	15.67	12.57	11.60	15.12	12.91	12.12	15.54
	2462	11	12.93	11.95	15.48	12.60	12.30	15.46	13.35	12.33	15.88
	2467	12	4.44	4.15	7.30	4.27	3.51	6.91	4.72	2.94	6.93
	2472	13	-0.56	-0.13	2.67	-0.81	-1.23	2.00	-0.95	-1.89	1.62
HE20 52T	2412	1	13.28	12.06	15.72	13.41	12.54	16.00	14.48	13.68	17.11
	2437	6	13.83	13.46	16.66	13.73	12.99	16.39	13.93	13.05	16.52
	2462	11	13.94	13.10	16.55	13.74	13.20	16.49	14.43	13.29	16.91
	2467	12	4.32	4.13	7.24	4.27	4.00	7.15	4.51	3.13	6.89
	2472	13	-0.49	-0.14	2.70	-0.60	-0.62	2.40	-0.93	-1.81	1.66
HE20 106T	2412	1	14.25	13.09	16.71	-	-	-	15.10	14.21	17.69
	2437	6	14.65	14.29	17.49	-	-	-	14.70	13.88	17.32
	2462	11	14.74	14.15	17.47	-	-	-	15.07	14.42	17.77
	2467	12	4.23	3.94	7.10	-	-	-	4.50	3.18	6.90
	2472	13	-0.62	-0.47	2.46	-	-	-	-0.89	-1.77	1.70
HE20 242T	2412	1	-	-	-	14.52	13.57	17.08	-	-	-
	2437	6	-	-	-	15.66	14.95	18.33	-	-	-
	2462	11	-	-	-	15.89	15.25	18.59	-	-	-
	2467	12	-	-	-	4.17	3.43	6.83	-	-	-
	2472	13	-	-	-	-0.91	-1.18	1.97	-	-	-
HE20 SU	2412	1	-	-	-	14.56	13.58	17.11	-	-	-
	2437	6	-	-	-	15.69	14.98	18.36	-	-	-
	2462	11	-	-	-	15.89	15.26	18.59	-	-	-
	2467	12	-	-	-	4.43	3.60	7.05	-	-	-
	2472	13	-	-	-	-0.62	-0.98	2.21	-	-	-

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(20 dB) + Cable loss + EUT Cable loss
3. Total PSD = Measured Value + Duty Cycle Factor

[MIMO_CDD(Ant1+Ant2)]

1. MIMO_CDD(Ant1+Ant2) PSD = 10·log(((10^(ANT. 1 PSD /10))+(10^(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	-4.763	-5.524	-2.116	-4.531	-4.620	-1.565	-3.278	-3.885	-0.560
	2437	6	-4.023	-4.141	-1.071	-4.301	-5.129	-1.685	-3.497	-4.709	-1.050
	2462	11	-3.792	-4.656	-1.192	-4.009	-4.318	-1.150	-3.361	-4.240	-0.768
	2467	12	-12.505	-12.075	-9.274	-12.692	-13.779	-10.191	-11.816	-13.917	-9.730
	2472	13	-17.216	-16.935	-14.063	-17.704	-18.258	-14.961	-17.909	-18.905	-15.368
HE20 52T	2412	1	-5.772	-7.168	-3.404	-5.258	-5.995	-2.601	-4.817	-5.181	-1.985
	2437	6	-5.120	-5.450	-2.272	-4.845	-5.695	-2.239	-4.905	-6.173	-2.483
	2462	11	-4.399	-6.303	-2.238	-5.141	-5.539	-2.326	-4.535	-5.260	-1.873
	2467	12	-14.586	-14.946	-11.752	-14.122	-14.893	-11.481	-13.962	-15.741	-11.751
	2472	13	-19.533	-19.119	-16.311	-19.708	-19.374	-16.528	-19.630	-20.761	-17.149
HE20 106T	2412	1	-8.093	-9.023	-5.523	-	-	-	-6.893	-7.493	-4.172
	2437	6	-7.137	-7.124	-4.120	-	-	-	-7.556	-7.795	-4.664
	2462	11	-6.974	-8.320	-4.585	-	-	-	-6.474	-7.636	-4.006
	2467	12	-17.897	-18.228	-15.049	-	-	-	-17.304	-19.163	-15.124
	2472	13	-22.717	-22.256	-19.470	-	-	-	-23.358	-24.450	-20.859
HE20 242T	2412	1	-	-	-	-10.000	-11.460	-7.659	-	-	-
	2437	6	-	-	-	-9.935	-10.635	-7.261	-	-	-
	2462	11	-	-	-	-9.804	-10.166	-6.971	-	-	-
	2467	12	-	-	-	-21.015	-21.371	-18.179	-	-	-
	2472	13	-	-	-	-25.740	-26.106	-22.909	-	-	-
HE20 SU	2412	1	-	-	-	-11.373	-12.231	-8.770	-	-	-
	2437	6	-	-	-	-10.732	-11.043	-7.874	-	-	-
	2462	11	-	-	-	-10.369	-11.108	-7.712	-	-	-
	2467	12	-	-	-	-22.051	-22.761	-19.381	-	-	-
	2472	13	-	-	-	-26.957	-26.859	-23.897	-	-	-

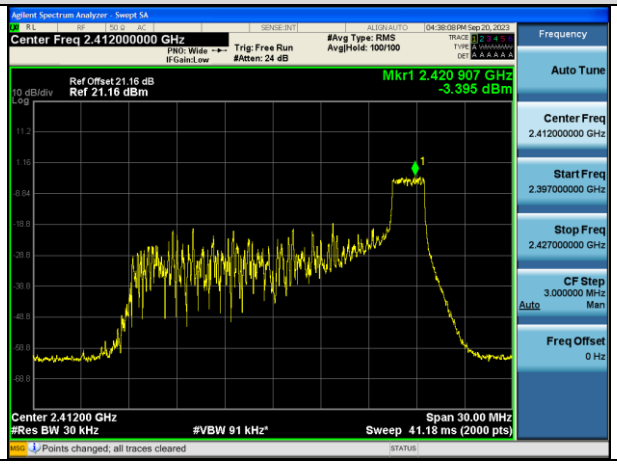
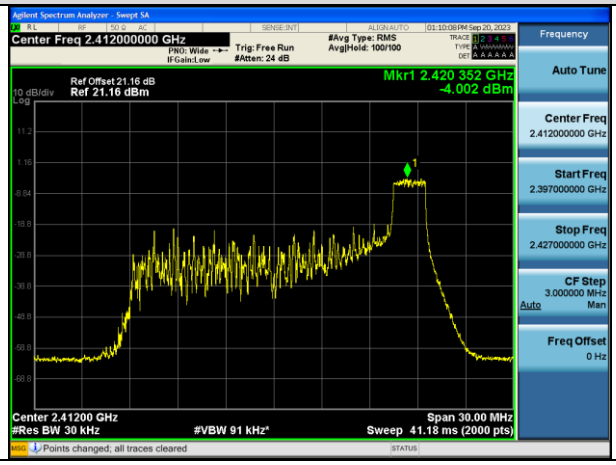
▣ Test Plots

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

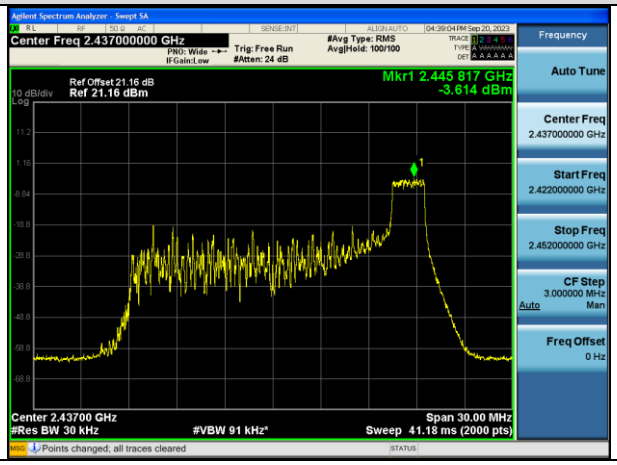
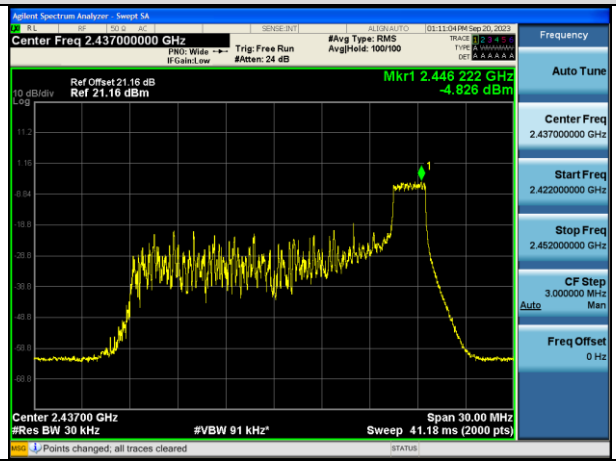
[MIMO_CDD(Ant1+Ant2)]

Note:

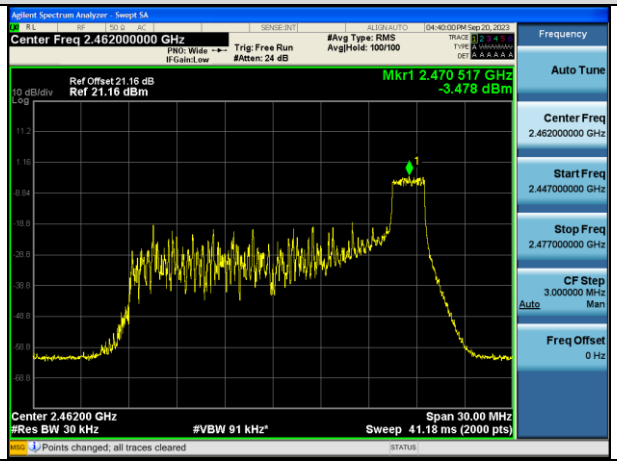
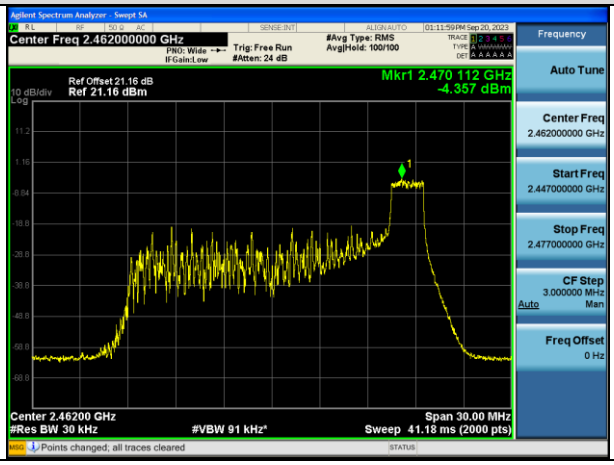
1. In order to simplify the report, attached plots were only the worst case PSD channel.
2. SUM PSD = 10·log(((10^(Ant1 PSD /10))+(10^(Ant2 PSD /10)))
3. MIMO_CDD(Ant1+Ant2) Total PSD = SUM PSD + Duty Cycle Factor

BW20M Ch.1(2412 MHz) RU 8	
ANT. 1	**ANT. 2**
	

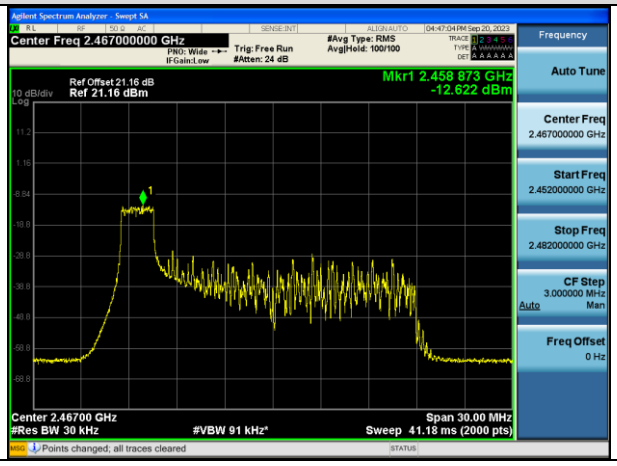
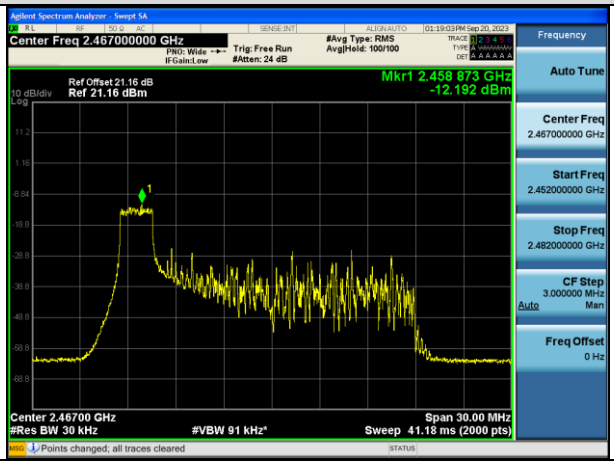
MIMO Measured PSD (dBm)	Duty Cycle Factor (dB)	MIMO Total PSD (dBm)
-0.678	0.117	-0.560

BW20M Ch.6(2437 MHz) RU 8	
ANT. 1	**ANT. 2**
	

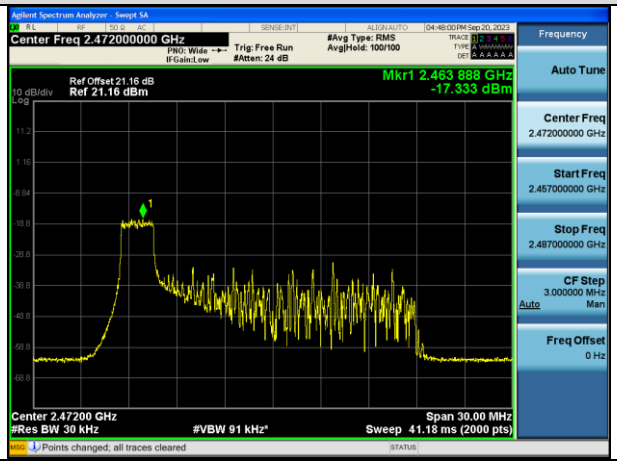
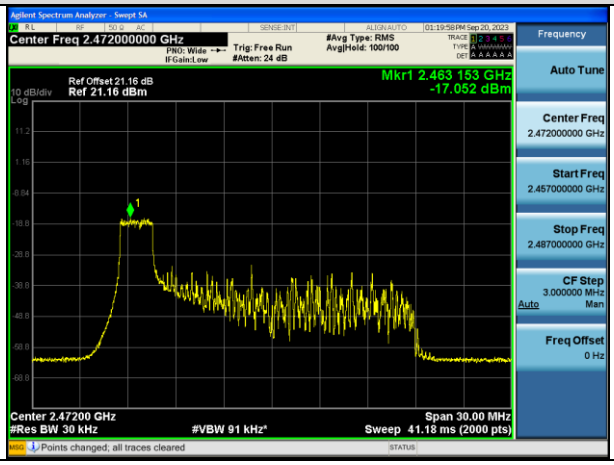
MIMO Measured PSD (dBm)	Duty Cycle Factor (dB)	MIMO Total PSD (dBm)
-1.168	0.117	-1.050

BW20M Ch.11(2462 MHz) RU 8	
ANT. 1	ANT. 2
	

MIMO Measured PSD (dBm)	Duty Cycle Factor (dB)	MIMO Total PSD (dBm)
-0.885	0.117	-0.768

BW20M Ch.12(2467 MHz) RU 0	
ANT. 1	ANT. 2
	

MIMO Measured PSD (dBm)	Duty Cycle Factor (dB)	MIMO Total PSD (dBm)
-9.391	0.117	-9.274

BW20M Ch.13(2472 MHz) RU 0	
ANT. 1	ANT. 2
	

MIMO Measured PSD (dBm)	Duty Cycle Factor (dB)	MIMO Total PSD (dBm)
-14.180	0.117	-14.063

9.5 BAND EDGE / CONDUCTED SPURIOUS EMISSIONS

Band Edge

Limit : 30 dBc

[ANT. 1]

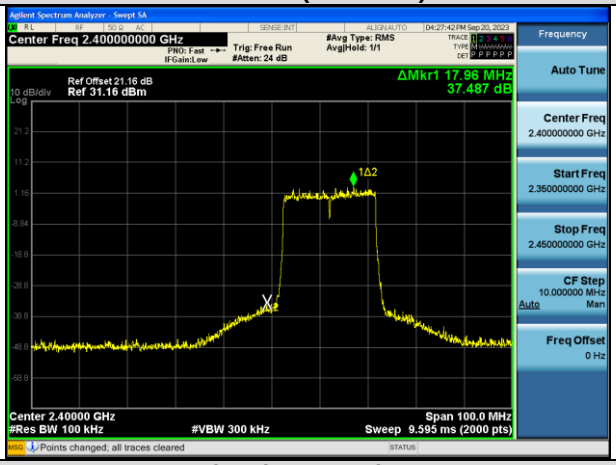
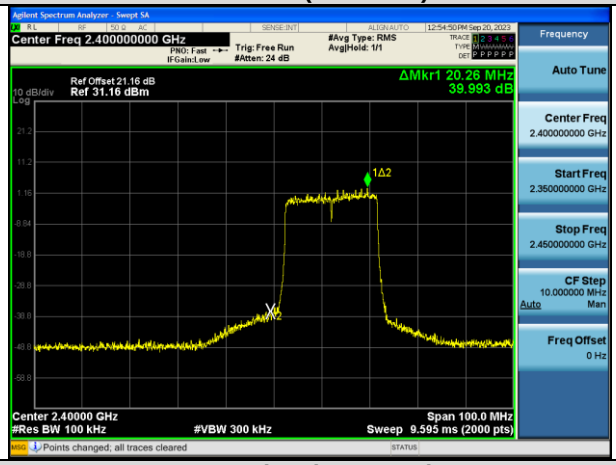
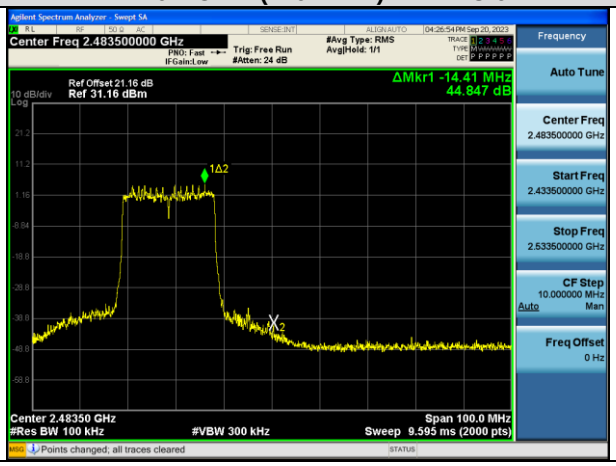
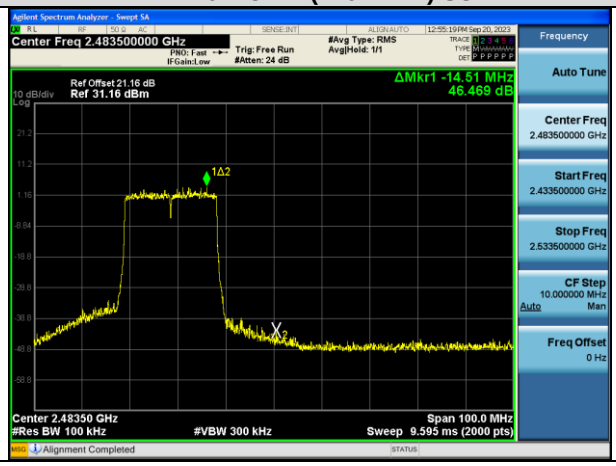
Mode	Freq. [MHz]	CH.	RU Position	Measured Position	Band edge[dB]
HE20 26T	2412	1	Low	Lowest Bandedge	49.977
	2462	11	High	Highest Bandedge	54.909
	2467	12	High	Highest Bandedge	47.417
	2472	13	High	Highest Bandedge	41.079
HE20 52T	2412	1	Low	Lowest Bandedge	44.682
	2462	11	High	Highest Bandedge	54.159
	2467	12	High	Highest Bandedge	44.344
	2472	13	High	Highest Bandedge	38.279
HE20 106T	2412	1	Low	Lowest Bandedge	40.292
	2462	11	High	Highest Bandedge	48.633
	2467	12	High	Highest Bandedge	40.644
	2472	13	High	Highest Bandedge	34.941
HE20 242T	2412	1	Low	Lowest Bandedge	39.604
	2462	11	High	Highest Bandedge	44.847
	2467	12	High	Highest Bandedge	38.599
	2472	13	High	Highest Bandedge	33.448
HE20 SU	2412	1	Low	Lowest Bandedge	37.487
	2462	11	High	Highest Bandedge	46.385
	2467	12	High	Highest Bandedge	38.778
	2472	13	High	Highest Bandedge	32.971

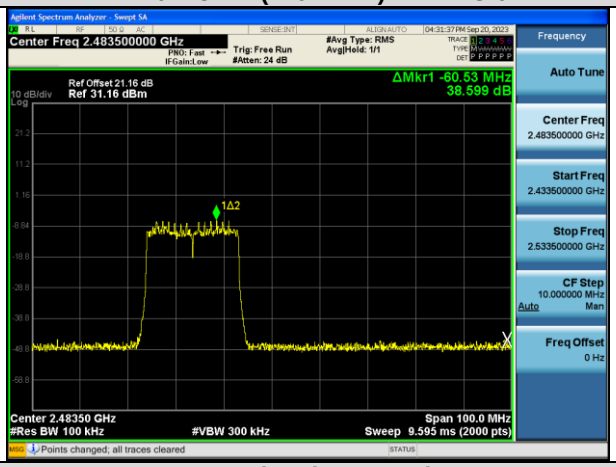
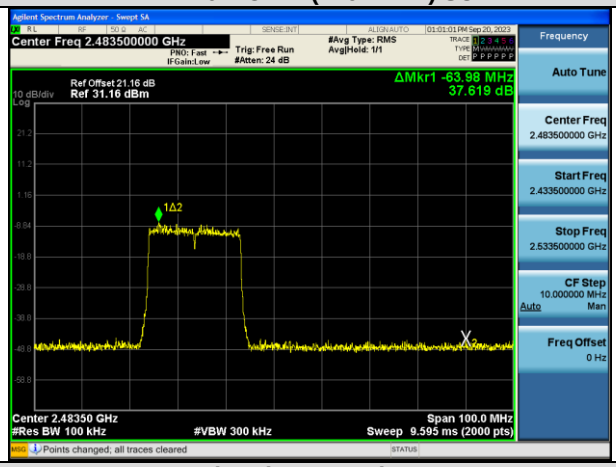
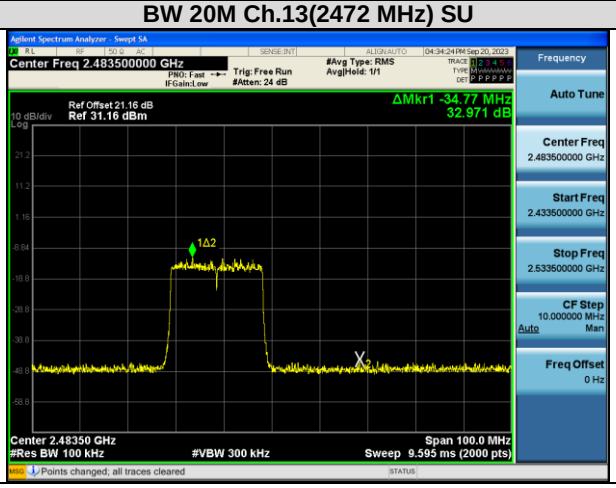
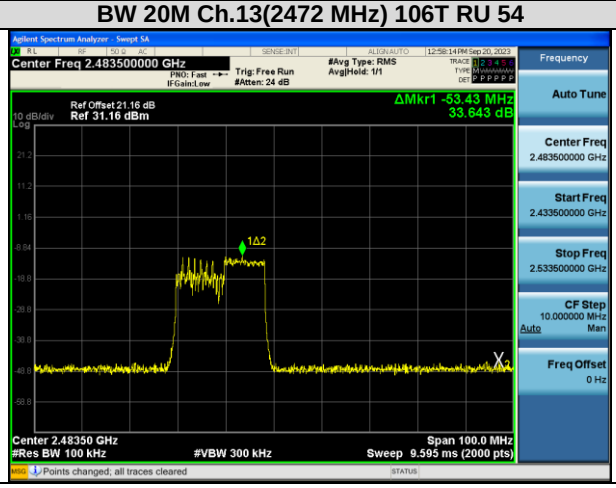
[ANT. 2]

Mode	Freq. [MHz]	CH.	RU Position	Measured Position	Band edge[dB]
HE20 26T	2412	1	Low	Lowest Bandedge	51.175
	2462	11	High	Highest Bandedge	54.469
	2467	12	High	Highest Bandedge	44.583
	2472	13	High	Highest Bandedge	39.883
HE20 52T	2412	1	Low	Lowest Bandedge	46.763
	2462	11	High	Highest Bandedge	53.103
	2467	12	High	Highest Bandedge	42.206
	2472	13	High	Highest Bandedge	37.380
HE20 106T	2412	1	Low	Lowest Bandedge	41.335
	2462	11	High	Highest Bandedge	48.689
	2467	12	High	Highest Bandedge	39.599
	2472	13	High	Highest Bandedge	33.643
HE20 242T	2412	1	Low	Lowest Bandedge	40.606
	2462	11	High	Highest Bandedge	47.662
	2467	12	High	Highest Bandedge	38.146
	2472	13	High	Highest Bandedge	33.976
HE20 SU	2412	1	Low	Lowest Bandedge	39.993
	2462	11	High	Highest Bandedge	46.469
	2467	12	High	Highest Bandedge	37.619
	2472	13	High	Highest Bandedge	34.094

▣ Test Plots

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

[ANT. 1]	[ANT. 2]
BW 20M Ch.1(2412 MHz) SU	**BW 20M Ch.1(2412 MHz) SU**
	
BW 20M Ch.11(2462 MHz) 242T RU 61	**BW 20M Ch.11(2462 MHz) SU**
	

[ANT. 1]	[ANT. 2]
BW 20M Ch.12(2467 MHz) 242T RU 61	BW 20M Ch.12(2467 MHz) SU
	
BW 20M Ch.13(2472 MHz) SU	BW 20M Ch.13(2472 MHz) 106T RU 54
	

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	56.606	58.056	57.906
	2437	6	57.692	58.182	54.508
	2462	11	58.244	57.604	57.574
	2467	12	49.435	48.896	49.498
	2472	13	43.776	42.495	44.072
HE20 52T	2412	1	55.759	54.772	55.843
	2437	6	56.455	55.842	56.402
	2462	11	56.115	55.805	57.054
	2467	12	47.112	46.448	46.782
	2472	13	42.446	42.857	41.199
HE20 106T	2412	1	54.051	-	52.899
	2437	6	53.330	-	54.066
	2462	11	51.929	-	53.700
	2467	12	43.094	-	42.506
	2472	13	39.073	-	38.538
HE20 242T	2412	1	-	51.836	-
	2437	6	-	51.718	-
	2462	11	-	53.934	-
	2467	12	-	41.128	-
	2472	13	-	37.301	-
HE20 SU	2412	1	-	52.284	-
	2437	6	-	53.258	-
	2462	11	-	54.402	-
	2467	12	-	41.419	-
	2472	13	-	36.640	-

[ANT. 2]

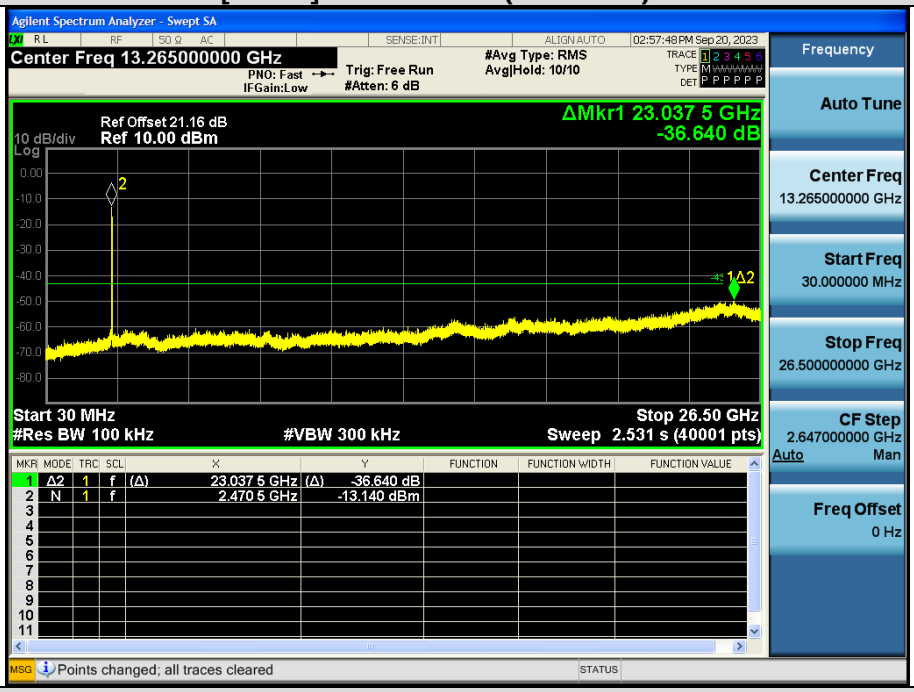
Mode	Freq. [MHz]	CH.	Conducted Spurious Emissions [dB]		
			RU Index : Low	RU Index : Mid	RU Index : High
HE20 26T	2412	1	55.519	56.944	56.868
	2437	6	56.406	55.743	56.722
	2462	11	58.177	54.822	57.045
	2467	12	46.332	47.926	45.971
	2472	13	43.987	43.093	43.447
HE20 52T	2412	1	55.208	55.371	54.981
	2437	6	55.895	54.929	56.770
	2462	11	55.928	55.317	56.290
	2467	12	47.570	46.088	44.904
	2472	13	42.583	42.024	40.466
HE20 106T	2412	1	52.533	-	53.806
	2437	6	53.069	-	52.380
	2462	11	54.059	-	53.105
	2467	12	41.416	-	40.943
	2472	13	37.683	-	36.313
HE20 242T	2412	1	-	50.998	-
	2437	6	-	53.486	-
	2462	11	-	53.566	-
	2467	12	-	40.573	-
	2472	13	-	37.611	-
HE20 SU	2412	1	-	50.724	-
	2437	6	-	52.752	-
	2462	11	-	51.270	-
	2467	12	-	40.303	-
	2472	13	-	35.846	-

▣ Test Plots

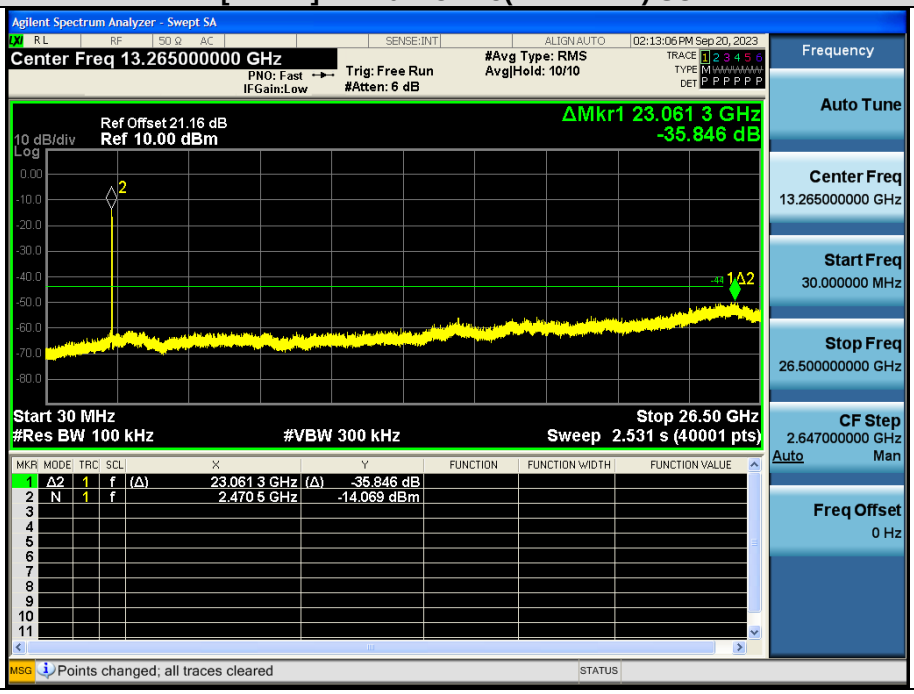
Note:

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

[ANT. 1] BW20M Ch.13(2 472 MHz) SU



[ANT. 2] BW20M Ch.13(2 472 MHz) SU



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 = 40log (specific distance / 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(Ant1+Ant2)]

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	43.16	0.00	3.17	V	46.33	73.98	27.65	PK
4824	30.27	0.03	3.17	V	33.47	53.98	20.51	AV
7236	38.52	0.00	11.53	V	50.05	73.98	23.93	PK
7236	26.34	0.03	11.53	V	37.90	53.98	16.08	AV
4824	42.03	0.00	3.17	H	45.20	73.98	28.78	PK
4824	30.44	0.03	3.17	H	33.64	53.98	20.34	AV
7236	38.37	0.00	11.53	H	49.90	73.98	24.08	PK
7236	26.33	0.03	11.53	H	37.89	53.98	16.09	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	40.96	0.00	3.42	V	44.38	73.98	29.60	PK
4874	28.99	0.03	3.42	V	32.44	53.98	21.54	AV
7311	39.73	0.00	11.88	V	51.61	73.98	22.37	PK
7311	26.64	0.03	11.88	V	38.55	53.98	15.43	AV
4874	41.42	0.00	3.42	H	44.84	73.98	29.14	PK
4874	29.12	0.03	3.42	H	32.57	53.98	21.41	AV
7311	39.18	0.00	11.88	H	51.06	73.98	22.92	PK
7311	26.13	0.03	11.88	H	38.04	53.98	15.94	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	41.21	0.00	3.41	V	44.62	73.98	29.36	PK
4924	29.37	0.03	3.41	V	32.81	53.98	21.17	AV
7386	38.66	0.00	11.99	V	50.65	73.98	23.33	PK
7386	26.39	0.03	11.99	V	38.41	53.98	15.57	AV
4924	43.08	0.00	3.41	H	46.49	73.98	27.49	PK
4924	30.28	0.03	3.41	H	33.72	53.98	20.26	AV
7386	38.68	0.00	11.99	H	50.67	73.98	23.31	PK
7386	26.33	0.03	11.99	H	38.35	53.98	15.63	AV

2. 52 Tones RU 38

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2412 MHz
Channel No.	1 Ch
RU offset	38

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	41.45	0.00	3.17	V	44.62	73.98	29.36	PK
4824	29.06	0.03	3.17	V	32.26	53.98	21.72	AV
7236	38.23	0.00	11.53	V	49.76	73.98	24.22	PK
7236	26.31	0.03	11.53	V	37.87	53.98	16.11	AV
4824	42.62	0.00	3.17	H	45.79	73.98	28.19	PK
4824	29.31	0.03	3.17	H	32.51	53.98	21.47	AV
7236	38.28	0.00	11.53	H	49.81	73.98	24.17	PK
7236	26.32	0.03	11.53	H	37.88	53.98	16.10	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2437 MHz
Channel No.	6 Ch
RU offset	38

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	43.47	0.00	3.42	V	46.89	73.98	27.09	PK
4874	30.12	0.03	3.42	V	33.57	53.98	20.41	AV
7311	38.24	0.00	11.88	V	50.12	73.98	23.86	PK
7311	26.16	0.03	11.88	V	38.07	53.98	15.91	AV
4874	42.29	0.00	3.42	H	45.71	73.98	28.27	PK
4874	29.63	0.03	3.42	H	33.08	53.98	20.90	AV
7311	38.23	0.00	11.88	H	50.11	73.98	23.87	PK
7311	26.14	0.03	11.88	H	38.05	53.98	15.93	AV

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

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	41.51	0.00	3.41	V	44.92	73.98	29.06	PK
4924	29.64	0.03	3.41	V	33.08	53.98	20.90	AV
7386	40.77	0.00	11.99	V	52.76	73.98	21.22	PK
7386	27.11	0.03	11.99	V	39.13	53.98	14.85	AV
4924	42.09	0.00	3.41	H	45.50	73.98	28.48	PK
4924	29.37	0.03	3.41	H	32.81	53.98	21.17	AV
7386	38.55	0.00	11.99	H	50.54	73.98	23.44	PK
7386	26.38	0.03	11.99	H	38.40	53.98	15.58	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	41.05	0.00	3.17	V	44.22	73.98	29.76	PK
4824	29.06	0.05	3.17	V	32.28	53.98	21.70	AV
7236	38.59	0.00	11.53	V	50.12	73.98	23.86	PK
7236	26.30	0.05	11.53	V	37.88	53.98	16.10	AV
4824	41.67	0.00	3.17	H	44.84	73.98	29.14	PK
4824	29.29	0.05	3.17	H	32.51	53.98	21.47	AV
7236	38.40	0.00	11.53	H	49.93	73.98	24.05	PK
7236	26.35	0.05	11.53	H	37.93	53.98	16.05	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	41.05	0.00	3.42	V	44.47	73.98	29.51	PK
4874	28.95	0.05	3.42	V	32.42	53.98	21.56	AV
7311	39.45	0.00	11.88	V	51.33	73.98	22.65	PK
7311	26.89	0.05	11.88	V	38.82	53.98	15.16	AV
4874	41.29	0.00	3.42	H	44.71	73.98	29.27	PK
4874	29.14	0.05	3.42	H	32.61	53.98	21.37	AV
7311	38.14	0.00	11.88	H	50.02	73.98	23.96	PK
7311	26.20	0.05	11.88	H	38.13	53.98	15.85	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	42.74	0.00	3.41	V	46.15	73.98	27.83	PK
4924	30.19	0.05	3.41	V	33.65	53.98	20.33	AV
7386	39.05	0.00	11.99	V	51.04	73.98	22.94	PK
7386	26.37	0.05	11.99	V	38.41	53.98	15.57	AV
4924	41.92	0.00	3.41	H	45.33	73.98	28.65	PK
4924	29.63	0.05	3.41	H	33.09	53.98	20.89	AV
7386	38.72	0.00	11.99	H	50.71	73.98	23.27	PK
7386	26.38	0.05	11.99	H	38.42	53.98	15.56	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	41.53	0.00	3.17	V	44.70	73.98	29.28	PK
4824	29.14	0.10	3.17	V	32.41	53.98	21.57	AV
7236	38.51	0.00	11.53	V	50.04	73.98	23.94	PK
7236	26.31	0.10	11.53	V	37.94	53.98	16.04	AV
4824	41.17	0.00	3.17	H	44.34	73.98	29.64	PK
4824	29.13	0.10	3.17	H	32.40	53.98	21.58	AV
7236	38.77	0.00	11.53	H	50.30	73.98	23.68	PK
7236	26.24	0.10	11.53	H	37.87	53.98	16.11	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	41.79	0.00	3.42	V	45.21	73.98	28.77	PK
4874	29.04	0.10	3.42	V	32.56	53.98	21.42	AV
7311	38.64	0.00	11.88	V	50.52	73.98	23.46	PK
7311	26.69	0.10	11.88	V	38.67	53.98	15.31	AV
4874	41.63	0.00	3.42	H	45.05	73.98	28.93	PK
4874	29.15	0.10	3.42	H	32.67	53.98	21.31	AV
7311	38.26	0.00	11.88	H	50.14	73.98	23.84	PK
7311	26.08	0.10	11.88	H	38.06	53.98	15.92	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	41.42	0.00	3.41	V	44.83	73.98	29.15	PK
4924	29.15	0.10	3.41	V	32.66	53.98	21.32	AV
7386	39.62	0.00	11.99	V	51.61	73.98	22.37	PK
7386	26.87	0.10	11.99	V	38.96	53.98	15.02	AV
4924	41.21	0.00	3.41	H	44.62	73.98	29.36	PK
4924	29.33	0.10	3.41	H	32.84	53.98	21.14	AV
7386	39.19	0.00	11.99	H	51.18	73.98	22.80	PK
7386	26.84	0.10	11.99	H	38.93	53.98	15.05	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	40.90	0.00	3.17	V	44.07	73.98	29.91	PK
4824	29.15	0.02	3.17	V	32.34	53.98	21.64	AV
7236	38.36	0.00	11.53	V	49.89	73.98	24.09	PK
7236	26.33	0.02	11.53	V	37.88	53.98	16.10	AV
4824	41.94	0.00	3.17	H	45.11	73.98	28.87	PK
4824	29.33	0.02	3.17	H	32.52	53.98	21.46	AV
7236	38.53	0.00	11.53	H	50.06	73.98	23.92	PK
7236	26.36	0.02	11.53	H	37.91	53.98	16.07	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	41.81	0.00	3.42	V	45.23	73.98	28.75	PK
4874	29.17	0.02	3.42	V	32.61	53.98	21.37	AV
7311	38.44	0.00	11.88	V	50.32	73.98	23.66	PK
7311	26.35	0.02	11.88	V	38.25	53.98	15.73	AV
4874	41.49	0.00	3.42	H	44.91	73.98	29.07	PK
4874	29.32	0.02	3.42	H	32.76	53.98	21.22	AV
7311	38.22	0.00	11.88	H	50.10	73.98	23.88	PK
7311	26.09	0.02	11.88	H	37.99	53.98	15.99	AV

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

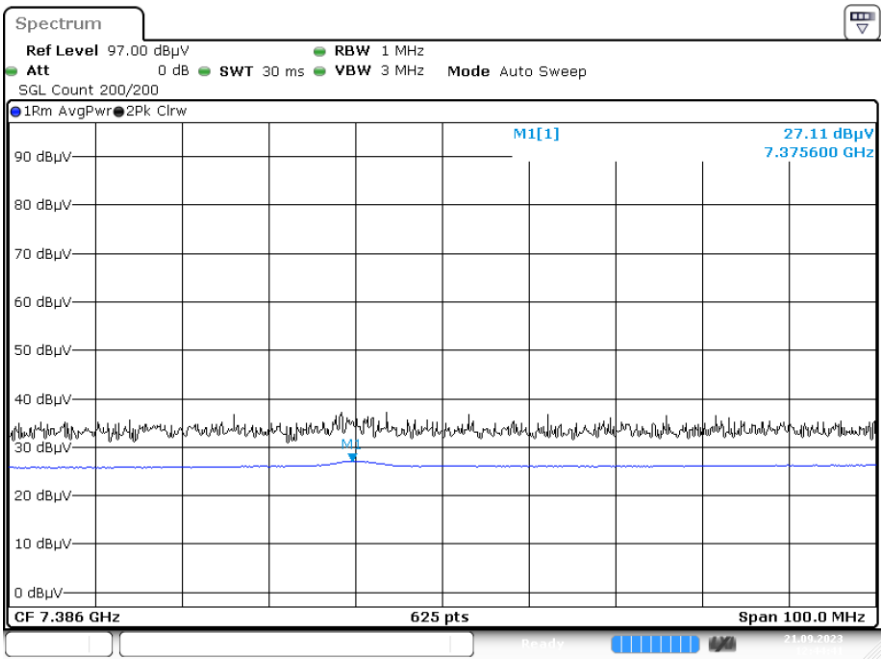
Frequency [MHz]	Measured Value [dBµV]	Duty Cycle Factor [dB]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
4924	41.63	0.00	3.41	V	45.04	73.98	28.94	PK
4924	29.13	0.02	3.41	V	32.56	53.98	21.42	AV
7386	38.80	0.00	11.99	V	50.79	73.98	23.19	PK
7386	26.54	0.02	11.99	V	38.55	53.98	15.43	AV
4924	41.60	0.00	3.41	H	45.01	73.98	28.97	PK
4924	29.33	0.02	3.41	H	32.76	53.98	21.22	AV
7386	39.33	0.00	11.99	H	51.32	73.98	22.66	PK
7386	26.34	0.02	11.99	H	38.35	53.98	15.63	AV

▣ Test Plots(52T RU 38)

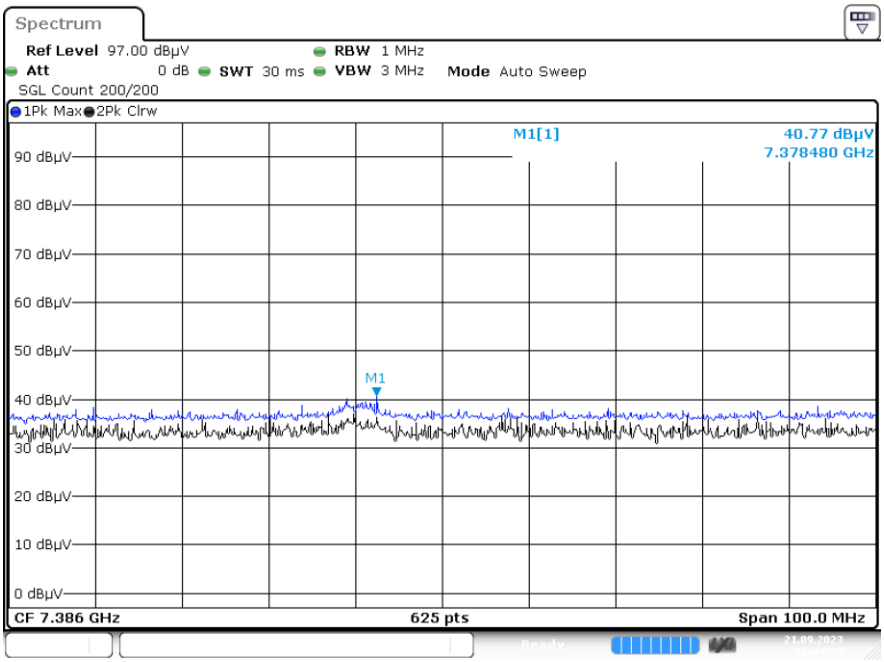
Note:

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-V)



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



9.7 RADIATED RESTRICTED BAND EDGES

[MIMO_CDD(Ant1+Ant2)]

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	20.73	0.00	36.58	H	57.31	73.98	16.67	PK
2390.0	5.67	0.03	36.58	H	42.28	53.98	11.70	AV
2390.0	20.42	0.00	36.58	V	57.00	73.98	16.98	PK
2390.0	5.41	0.03	36.58	V	42.02	53.98	11.96	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	19.35	0.00	36.37	H	55.72	73.98	18.26	PK
2483.5	5.74	0.03	36.37	H	42.14	53.98	11.84	AV
2483.5	19.02	0.00	36.37	V	55.39	73.98	18.59	PK
2483.5	5.41	0.03	36.37	V	41.81	53.98	12.17	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
RU Index:	8
Operating Frequency	2467 MHz
Channel No.	12 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	18.37	0.00	36.58	H	54.95	73.98	19.03	PK
2390.0	5.75	0.03	36.58	H	42.36	53.98	11.62	AV
2390.0	18.02	0.00	36.58	V	54.60	73.98	19.38	PK
2390.0	5.41	0.03	36.58	V	42.02	53.98	11.96	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
RU Index:	8
Operating Frequency	2472 MHz
Channel No.	13 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	31.23	0.00	36.37	H	67.60	73.98	6.38	PK
2483.5	11.13	0.03	36.37	H	47.53	53.98	6.45	AV
2483.5	30.98	0.00	36.37	V	67.35	73.98	6.63	PK
2483.5	10.95	0.03	36.37	V	47.35	53.98	6.63	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	19.94	0.00	36.58	H	56.52	73.98	17.46	PK
2390.0	6.36	0.03	36.58	H	42.97	53.98	11.01	AV
2390.0	19.35	0.00	36.58	V	55.93	73.98	18.05	PK
2390.0	6.02	0.03	36.58	V	42.63	53.98	11.35	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	20.72	0.00	36.37	H	57.09	73.98	16.89	PK
2483.5	5.92	0.03	36.37	H	42.32	53.98	11.66	AV
2483.5	20.41	0.00	36.37	V	56.78	73.98	17.20	PK
2483.5	5.55	0.03	36.37	V	41.95	53.98	12.03	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
RU Index:	40
Operating Frequency	2467 MHz
Channel No.	12 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	18.34	0.00	36.58	H	54.92	73.98	19.06	PK
2390.0	5.65	0.03	36.58	H	42.26	53.98	11.72	AV
2390.0	18.02	0.00	36.58	V	54.60	73.98	19.38	PK
2390.0	5.32	0.03	36.58	V	41.93	53.98	12.05	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
RU Index:	40
Operating Frequency	2472 MHz
Channel No.	13 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	28.61	0.00	36.37	H	64.98	73.98	9.00	PK
2483.5	8.78	0.03	36.37	H	45.18	53.98	8.80	AV
2483.5	28.41	0.00	36.37	V	64.78	73.98	9.20	PK
2483.5	8.45	0.03	36.37	V	44.85	53.98	9.13	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	23.45	0.00	36.58	H	60.03	73.98	13.95	PK
2390.0	6.18	0.05	36.58	H	42.81	53.98	11.17	AV
2390.0	23.01	0.00	36.58	V	59.59	73.98	14.39	PK
2390.0	6.02	0.05	36.58	V	42.65	53.98	11.33	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	25.12	0.00	36.37	H	61.49	73.98	12.49	PK
2483.5	6.22	0.05	36.37	H	42.64	53.98	11.34	AV
2483.5	24.95	0.00	36.37	V	61.32	73.98	12.66	PK
2483.5	6.02	0.05	36.37	V	42.44	53.98	11.54	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
RU Index:	54
Operating Frequency	2467 MHz
Channel No.	12 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	18.02	0.00	36.58	H	54.60	73.98	19.38	PK
2390.0	5.59	0.05	36.58	H	42.22	53.98	11.76	AV
2390.0	17.51	0.00	36.58	V	54.09	73.98	19.89	PK
2390.0	5.32	0.05	36.58	V	41.95	53.98	12.03	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
RU Index:	54
Operating Frequency	2472 MHz
Channel No.	13 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	26.63	0.00	36.37	H	63.00	73.98	10.98	PK
2483.5	8.12	0.05	36.37	H	44.54	53.98	9.44	AV
2483.5	26.41	0.00	36.37	V	62.78	73.98	11.20	PK
2483.5	7.89	0.05	36.37	V	44.31	53.98	9.67	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	29.13	0.00	36.58	H	65.71	73.98	8.27	PK
# 2389~2390	13.47	0.10	36.58	H	50.15	53.98	3.83	AV
# 2388~2389	12.63	0.10	36.58	H	49.31	53.98	4.67	AV
2388	11.87	0.10	36.58	H	48.55	53.98	5.43	AV
2390	28.95	0.00	36.58	V	65.53	73.98	8.45	PK
# 2389~2390	13.15	0.10	36.58	V	49.83	53.98	4.15	AV
# 2388~2389	12.35	0.10	36.58	V	49.03	53.98	4.95	AV
2388	11.51	0.10	36.58	V	48.19	53.98	5.79	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	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	30.72	0.00	36.37	H	67.09	73.98	6.89	PK
2483.5	9.75	0.10	36.37	H	46.22	53.98	7.76	AV
2483.5	30.25	0.00	36.37	V	66.62	73.98	7.36	PK
2483.5	9.32	0.10	36.37	V	45.79	53.98	8.19	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
RU Index:	61
Operating Frequency	2467 MHz
Channel No.	12 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	19.73	0.00	36.58	H	56.31	73.98	17.67	PK
2390.0	6.46	0.10	36.58	H	43.14	53.98	10.84	AV
2390.0	19.51	0.00	36.58	V	56.09	73.98	17.89	PK
2390.0	6.12	0.10	36.58	V	42.8	53.98	11.18	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
RU Index:	61
Operating Frequency	2472 MHz
Channel No.	13 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	24.25	0.00	36.37	H	60.62	73.98	13.36	PK
2483.5	6.63	0.10	36.37	H	43.10	53.98	10.88	AV
2483.5	24.01	0.00	36.37	V	60.38	73.98	13.60	PK
2483.5	6.32	0.10	36.37	V	42.79	53.98	11.19	AV

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
2390.0	26.51	0.00	36.58	H	63.09	73.98	10.89	PK
2390.0	12.57	0.02	36.58	H	49.17	53.98	4.81	AV
2390.0	26.30	0.00	36.58	V	62.88	73.98	11.10	PK
2390.0	12.12	0.02	36.58	V	48.72	53.98	5.26	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
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	20.06	0.00	36.37	H	56.43	73.98	17.55	PK
2483.5	7.05	0.02	36.37	H	43.44	53.98	10.54	AV
2483.5	19.85	0.00	36.37	V	56.22	73.98	17.76	PK
2483.5	6.85	0.02	36.37	V	43.24	53.98	10.74	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2467 MHz
Channel No.	12 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	17.62	0.00	36.58	H	54.20	73.98	19.78	PK
2390.0	5.85	0.10	36.58	H	42.53	53.98	11.45	AV
2390.0	17.45	0.00	36.58	V	54.03	73.98	19.95	PK
2390.0	5.55	0.10	36.58	V	42.23	53.98	11.75	AV

Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	0
Operating Frequency	2472 MHz
Channel No.	13 Ch

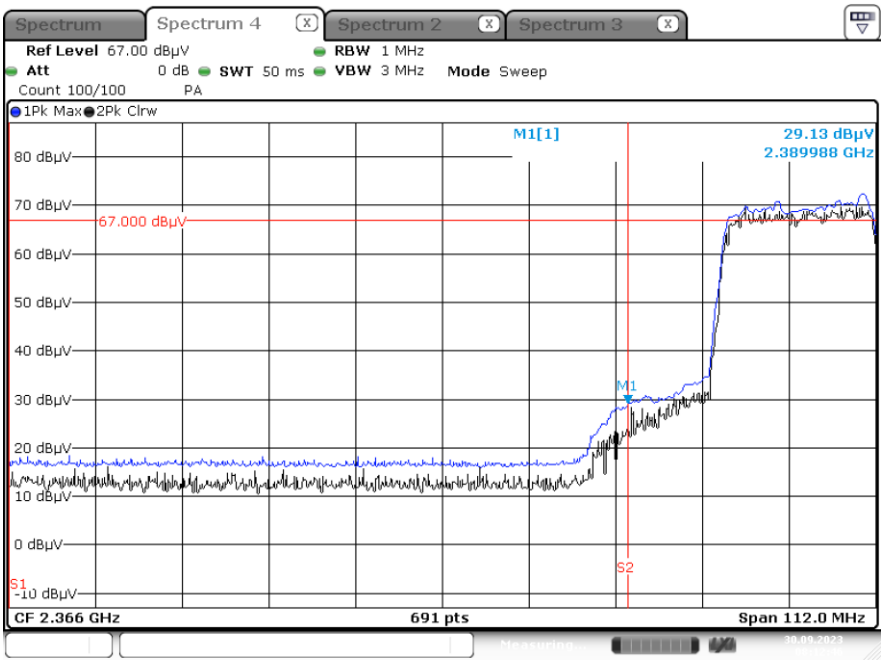
Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	A.F+C.L +D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	23.12	0.00	36.37	H	59.49	73.98	14.49	PK
2483.5	7.44	0.10	36.37	H	43.91	53.98	10.07	AV
2483.5	29.95	0.00	36.37	V	66.32	73.98	7.66	PK
2483.5	7.01	0.10	36.37	V	43.48	53.98	10.50	AV

▣ Test Plots [MIMO_CDD(Ant1+Ant2)]

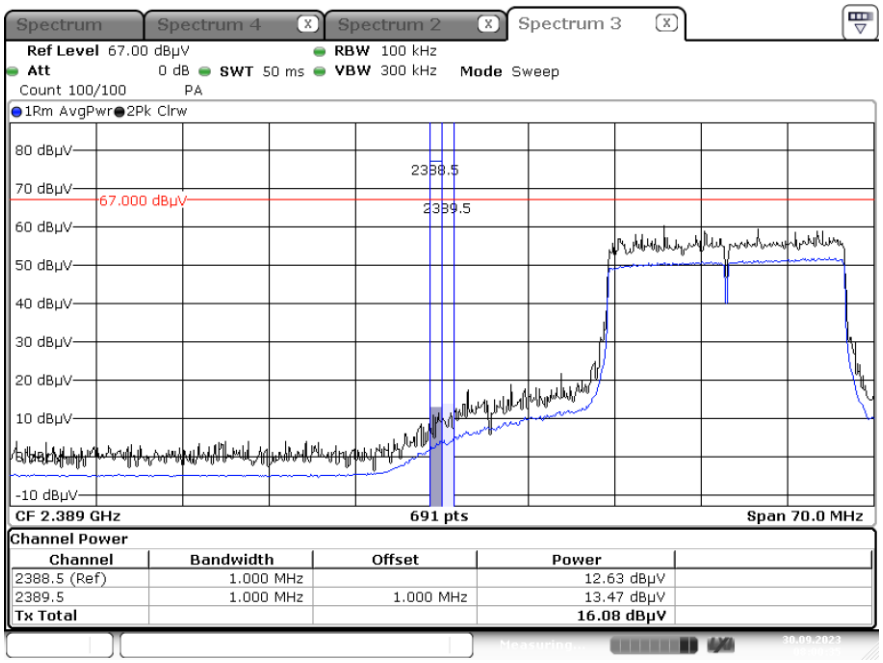
Note:

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

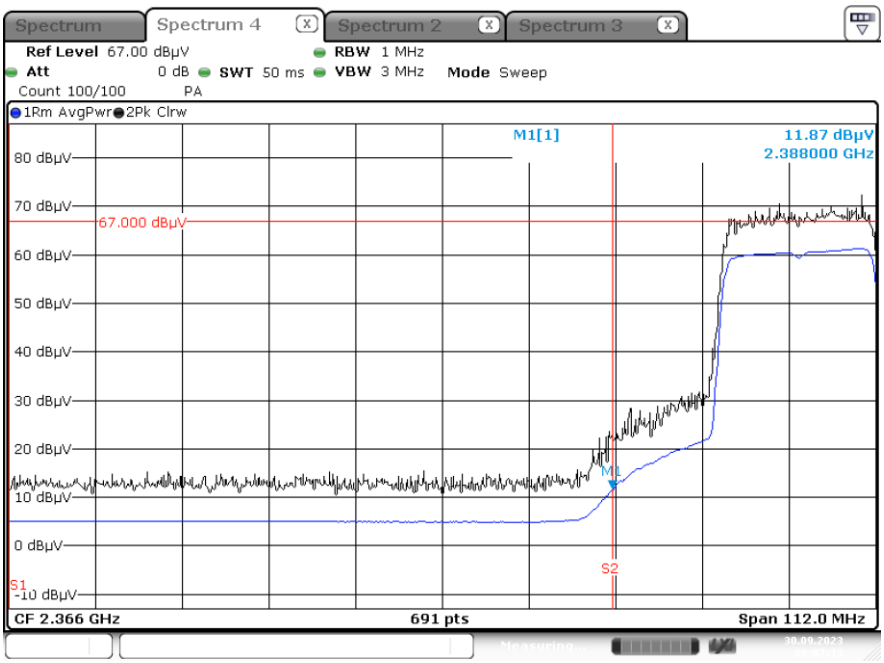
Peak result(802.11ax(HE20), MCS0, 242 Tone, RU 61 ch.1, X-H)
[Standard Method Used 2310 ~ 2390 MHz]



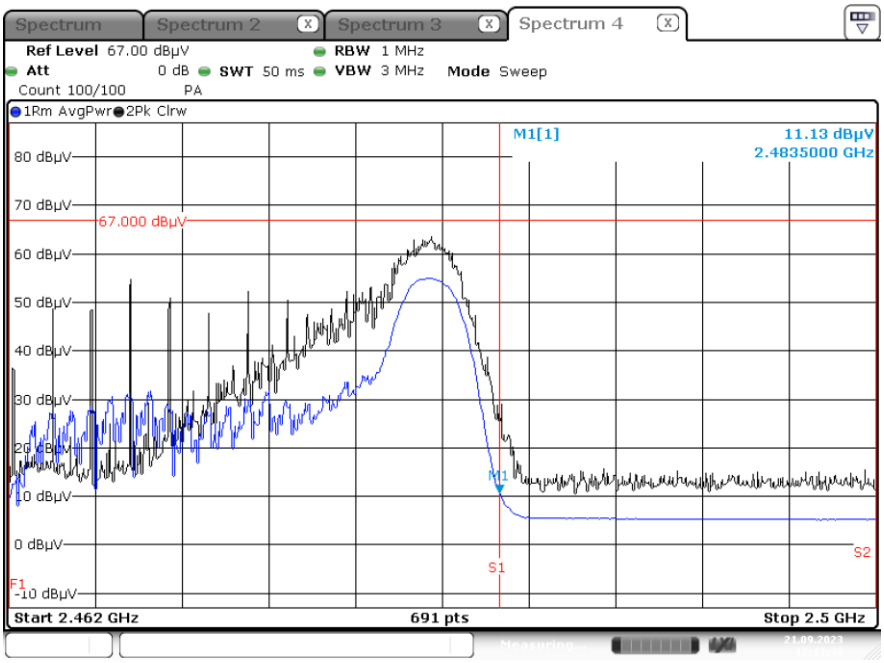
Average result(802.11ax(HE20), MCS0, 242 Tone, RU 61 ch.1, X-H)
[Integration Method Used_# 2388 ~ 2389 MHz, # 2389 ~ 2390 MHz]



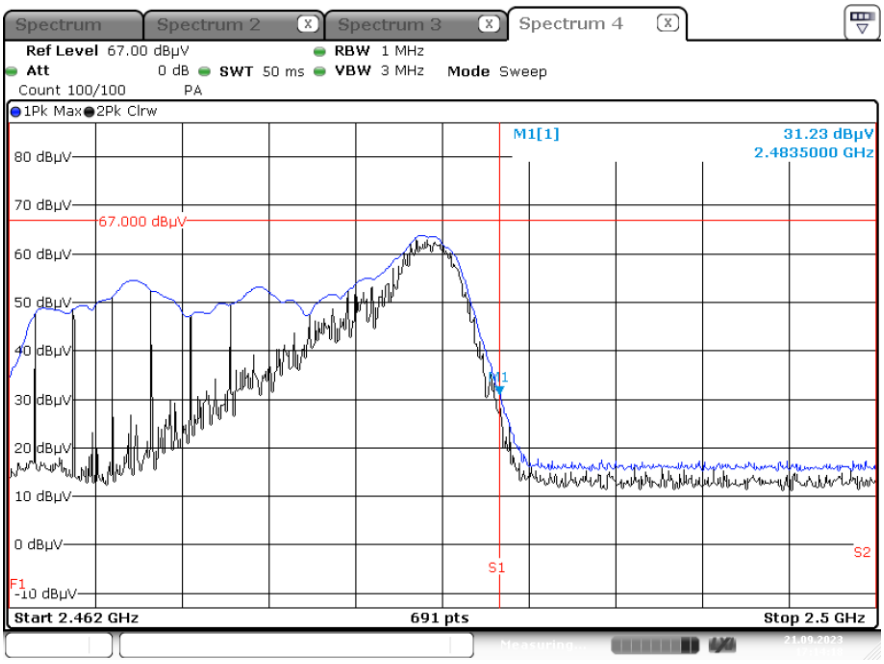
Average result(802.11ax(HE20), MCS0, 242 Tone, RU 61 ch.1, X-H)
[Standard Method Used 2310 ~ 2388 MHz]



Average result(802.11ax(HE20), MCS0, 26 Tone, RU 8 ch.13, X-H)



Peak result(802.11ax(HE20), MCS0, 26 Tone, RU 8 ch.13, 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	MY49432108	03/02/2024	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	10545	02/06/2024	Annual
DC Power Supply	E3632A	Agilent	KR75303243	04/24/2024	Annual
Attenuator(10 dB)(DC-26.5 GHz)	8493C	HP	07560	06/12/2024	Annual
Attenuator(10 dB)(DC-26.5 GHz)	8493C	HP	08285	06/02/2024	Annual
Attenuator(20 dB)	18N-20dB	Rohde & Schwarz	8	03/08/2024	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
Bluetooth Tester	CBT	Rohde & Schwarz	100808	02/16/2024	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.

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
EM1000 / Controller	EM1000	Audix	060520	N/A	N/A
Turn Table	N/A	Audix	N/A	N/A	N/A
Amp & Filter Bank Switch Controller	FBSM-01B	T&M system	TM19050002	N/A	N/A
Loop Antenna	1513	Schwarzbeck	1513-333	03/17/2024	Biennial
Hybrid Antenna	VULB 9168	Schwarzbeck	9168-0895	08/16/2024	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	9120D-1300	01/18/2024	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	9120D-2296	05/18/2024	Biennial
Horn Antenna (15 GHz ~ 40 GHz)	BBHA9170	Schwarzbeck	BBHA9170342	09/29/2024	Biennial
Spectrum Analyzer	FSV(10 Hz ~ 40 GHz)	Rohde & Schwarz	101055	05/12/2024	Annual
Band Reject Filter	WRCJV2400/2483.5-2370/2520-60/12SS	Wainwright Instruments	2	01/05/2024	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
High Pass Filter (7 GHz ~ 18 GHz)	WHKX10-7150-8000-18000-50SS	Wainwright Instruments	1	03/02/2024	Annual
Power Amplifier	CBL18265035	CERNEX	22966	12/01/2023	Annual
Power Amplifier	CBL26405040	CERNEX	25956	03/02/2024	Annual
Bluetooth Tester	TC-3000C	TESCOM	3000C000175	03/28/2024	Annual
RF Switching System	FMSR-05B (HPF(3~18GHz) + LNA1(1~18GHz))	T&M system	S1L1	01/17/2024	Annual
RF Switching System	FMSR -05B (ATT(10dB) + LNA1(1~18GHz))	T&M system	S1L2	01/17/2024	Annual
RF Switching System	FMSR -05B (ATT(3dB) + LNA1(1~18GHz))	T&M system	S1L3	01/17/2024	Annual
RF Switching System	FMSR -05B (LNA1(1~18GHz))	T&M system	S1L4	01/17/2024	Annual
RF Switching System	FMSR -05B (HPF(7~18GHz) + LNA2(6~18GHz))	T&M system	S1L5	01/17/2024	Annual
RF Switching System	FMSR -05B (Thru(30MHz ~ 18GHz))	T&M system	S1L6	01/17/2024	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-FC057-P