

TEST REPORT

FCC DTS ax Test for SM-X400
Certification

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-RF-2506-FC098

DATE OF ISSUE
June 25, 2025

Tested by
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TEST REPORT

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Applicant

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

Product Name

Tablet

Model Name

SM-X400

FCC ID

A3LSMX400

Date of Test

May 7, 2025 ~ June 19, 2025

FCC Classification

Digital Transmission System(DTS)

Test Standard Used

FCC Rule Part(s): Part 15.247

Test Results

PASS

Location of Test

☒ Permanent Testing Lab ☐ On Site Testing Lab
(Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea)

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	June 25, 2025	Initial Release

Notice

Content

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.

The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated.

The test results have only been applied with the test methods required by the standard(s).

The laboratory is not accredited for the test results marked *.

Information provided by the applicant is marked **.

Test results provided by external providers are marked ***.

When confirmation of authenticity of this test report is required, please contact www.hct.co.kr

The test results in this test report are not associated with the ((KS Q) ISO/IEC 17025) accreditation by KOLAS (Korea Laboratory Accreditation Scheme) / A2LA (American Association for Laboratory Accreditation) that are under the ILAC (International Laboratory Accreditation Cooperation) Mutual Recognition Agreement (MRA).

Data referencing: DTS ax Report (FCC ID: A3LSMX406B, Report No. HCT-RF-2506-FC090)

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1. EUT DESCRIPTION

Model	SM-X400		
Additional Model	-		
EUT Type	Tablet		
Power Supply	DC 3.86 V		
Frequency Range	2 412 MHz ~ 2 472 MHz		
Max. RF Output Power	<u>Peak Power</u>	SISO(Ant.1)	20.83 dBm
		MIMO_SDM(Ant.1+ Ant.2)	24.60 dBm
	<u>Average Power</u>	SISO(Ant.1)	15.38 dBm
		MIMO_SDM(Ant.1+ Ant.2)	18.64 dBm
Modulation Type	OFDM, OFDMA		
Number of Channels	13 Channels		
Antenna Specification	Type: Metal		
Serial number	Conducted : R32Y40016RE Radiated : R32Y400CS0N		

ANTENNA CONFIGURATIONS

1. Antenna configuration

Configurations	SISO		MIMO	
	ANT.1	ANT.2	CDD	SDM
802.11ax	O	X	X	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 bands simultaneously on each antenna.

Simultaneous transmission Scenario	5 GHz WiFi Ant.1	5 GHz WiFi Ant.2	BT	Test Case
Bluetooth + 5 GHz WiFi MIMO	on	on	on	Scenario1

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
ANT.1	-4.10	2/2	-1.19	-4.10
ANT.2	-4.30			

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.

$$\text{Directional gain(CDD)} = 10 \cdot \log \left(\left(10^{(\text{ANT.0 Gain}/20)} + 10^{(\text{ANT.1 Gain}/20)} \right)^2 / 2 \right) \text{ dBi}$$

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

Sample MIMO Calculation:

Ex) ANT.1 : 11.58 dBm ANT.2 : 12.08 dBm

$$\text{MIMO} = \text{ANT.1} + \text{ANT.2}$$

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

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 11, 2024 (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.

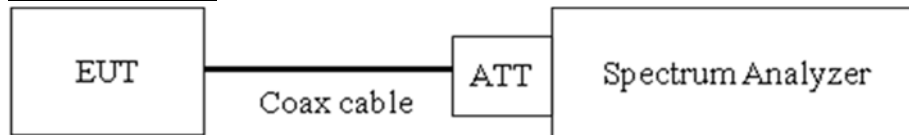
Parameter	Expanded Uncertainty ($\pm$ kHz)
X dB, 99% Bandwidth	95 (Confidence level about 95 %, $k=2$)
Frequency stability	28 (Confidence level about 95 %, $k=2$)

Parameter	Expanded Uncertainty ($\pm$ dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.54 (Confidence level about 95 %, $k=2$)
Conducted Output Power(Power Meter)	0.54 (Confidence level about 95 %, $k=2$)
Conducted Output Power(Signal Analyzer)	0.68 (Confidence level about 95 %, $k=2$)
Power Spectral Density	1.03 (Confidence level about 95 %, $k=2$)
Band Edge (Out of Band Emissions)	0.70 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.36 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.68 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.75 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.82 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (Above 40 GHz)	5.58 (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 $> 50/T$.

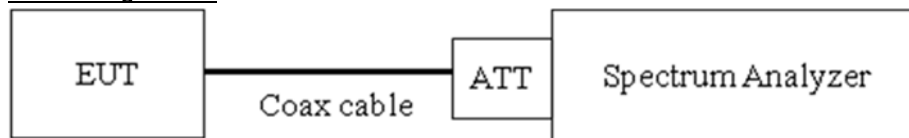
1. RBW = 8 MHz (the largest available value)
2. VBW = 8 MHz ($\geq$ RBW)
3. SPAN = 0 Hz
4. Detector = Peak
5. Number of points in sweep > 100
6. Trace mode = Clear write
7. Measure T_{total} and T_{on}
8. Calculate Duty Cycle = $T_{\text{on}} / T_{\text{total}}$ and Duty Cycle Factor = $10\log(1/\text{Duty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

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.

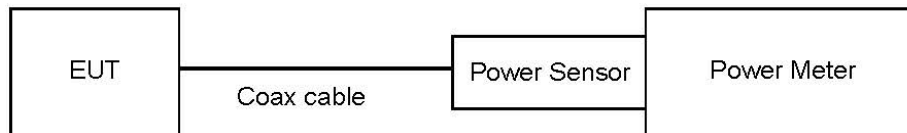
Note : We tested OBW using the automatic bandwidth measurement capability of a spectrum analyzer.

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

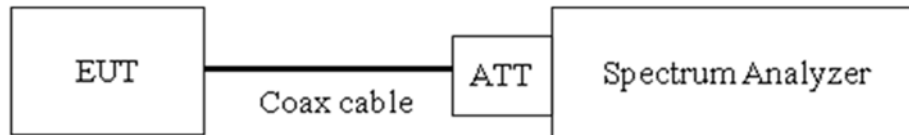
- Conducted Output Power(Peak) = Measured Value + ATT loss + Cable loss
- Conducted Output Power(Average) = Measured Value + ATT loss + Cable loss + Duty Cycle Factor

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

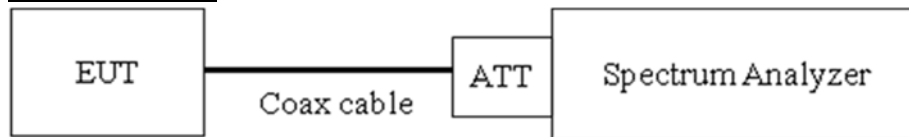
7.5. Conducted Band Edge (Out of Band Emissions) & Conducted Spurious Emissions

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) Allow trace to fully stabilize.
- 8) 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	10.72
100	10.78
200	10.83
300	10.85
400	10.88
500	10.92
600	10.94
700	10.98
800	11.00
900	11.03
1000	11.04
2000	11.19
2400	11.26
2500	11.26
3000	11.30
4000	11.39
5000	11.46
5150	11.48
6000	11.61
7000	11.70
8000	11.73
9000	11.81
10000	11.82
11000	11.84
12000	11.89
13000	12.00
14000	12.00
15000	12.11
16000	12.19
17000	12.16
18000	12.18
19000	12.27
20000	12.33
21000	12.30
22000	12.29
23000	12.48
24000	12.41

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

2. Factor = Attenuator loss + Cable loss

3. EUT cable loss = 0.68 dB

4. Total Port offset = 10.58 dB

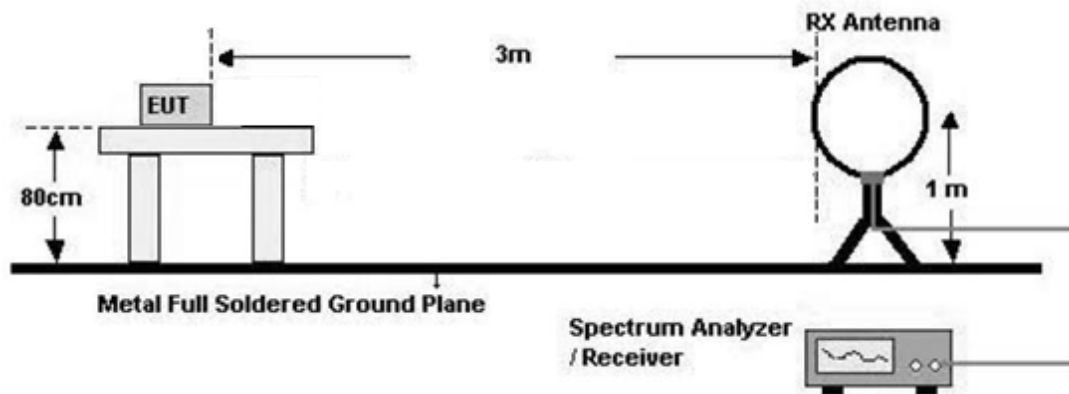
7.6. Radiated Test

Limit

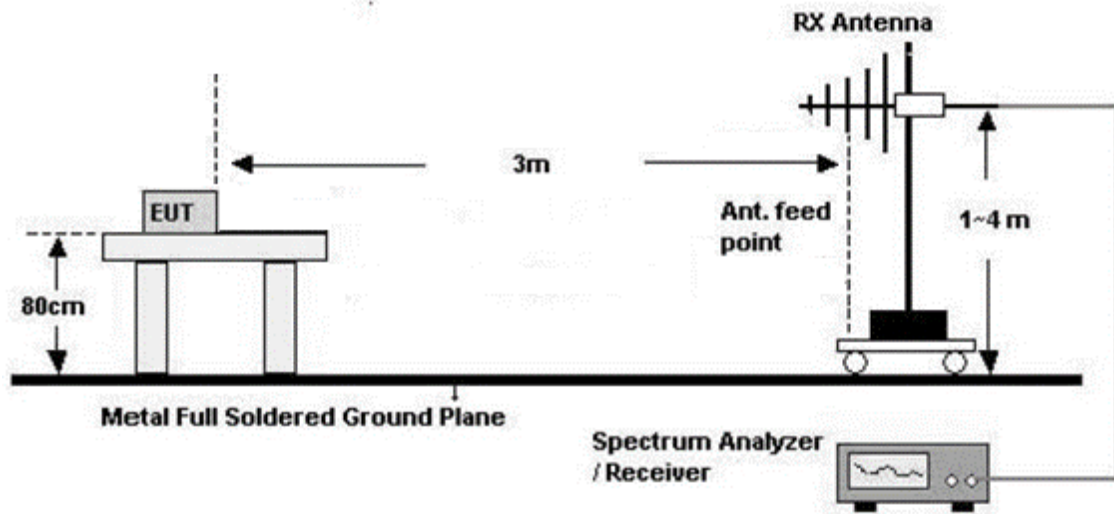
Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (m)
0.009 – 0.490	$2400/F(\text{kHz})$	300
0.490 – 1.705	$24000/F(\text{kHz})$	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

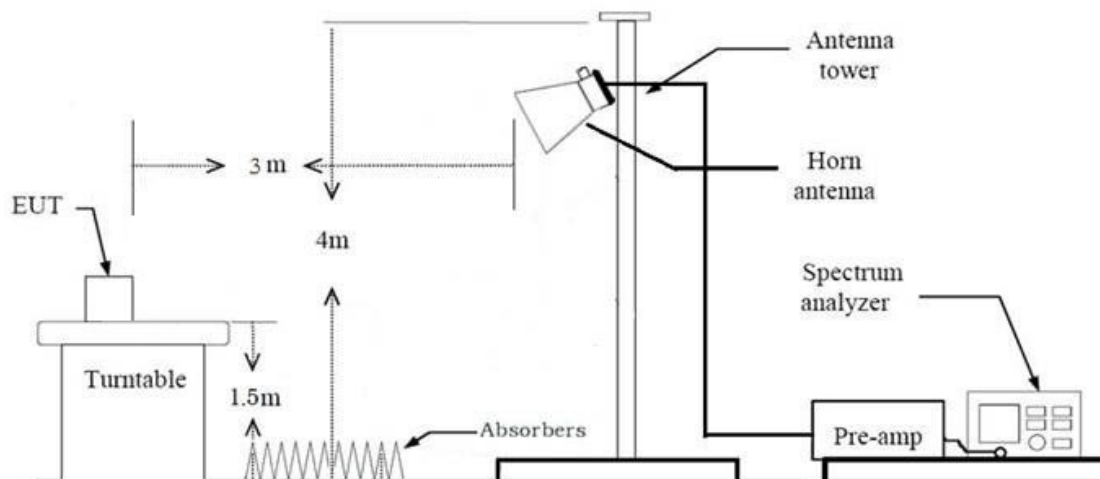
Below 30 MHz



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 = Max hold
 - 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 = Max hold
- 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 = $20 \log (\text{test distance} / \text{specific distance})$ (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 = Max hold
 - 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)

= Peak Measured Value

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

= Average Measured Value

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

= Average Measured Value + Duty Cycle Factor

- We apply to the offset in the range 1 GHz - 18 GHz.

- The offset = Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F)

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 : MCS0)

2. Band Edge (Conducted)

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

Tones	SRU/MRU	Channel	RU Index
26	SRU	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	-

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

(Worst case : MCS 0)

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

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

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

4. EUT Axis

- Radiated Spurious Emissions : Y, Z

- Radiated Restricted Band Edge : X

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

[RSE Worst case]

BW (MHz)	Test	Tones (T)	Offset
20	RSE	26	4
		SU	-

[Bandedge Worst case]

BW (MHz)	Test	Tones (T)	Offset	
			Lower	Upper
20	Band Edge	26	0	8
		52	37	40
		106	53	54
		242	61	61
		SU	-	-

Radiated test(Simultaneous transmission Scenario)

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

AC Power line Conducted Emissions

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

8. SUMMARY TEST OF RESULTS & DATA REFERENCING

8.1. Test result

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.
2. The decision rule applies 'simple acceptance'

8.2. Data Referencing

Equipment Class	Rule Part	Test item	Data Referencing	Comments
DTS (WLAN 2.4GHz)	15.247(a)(2)	6 dB Bandwidth	Y	-
	15.247(b)(3)	Conducted Maximum output power	Y	Spot-check
	15.247(e).	Power Spectral Density	Y	-
	15.247(d)	Band Edge (Out of Band Emissions)	Y	-
	15.207	AC Power line conducted Emissions	Y	-
	15.247(d) 15.205 15.209	Radiated Spurious Emissions	Y	Spot-check
	15.247(d) 15.205 15.209	Radiated Restricted Band Edge	Y	Spot-check

Spot-Check Result

1. Data was leveraged from model SM-X406B for the certification of SM-X400.
2. Please refer to the [FCC Evaluation] Report.

9. TEST RESULT

9.1 DUTY CYCLE

[SISO]

Mode	Tone (T)	Worst Data rate	T _{on} (ms)	T _{total} (ms)	Duty Cycle	Duty Cycle Factor (dB)
802.11ax (HE20)	26	MCS0	5.548	5.644	0.983	0.000
	52	MCS0	5.127	5.229	0.981	0.000
	106	MCS0	2.438	2.534	0.962	0.168
	242	MCS0	1.101	1.198	0.919	0.369
802.11ax(SU)	BW 20	MCS0	1.099	1.197	0.918	0.373

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

Mode	Tone (T)	Worst Data rate	T _{on} (ms)	T _{total} (ms)	Duty Cycle	Duty Cycle Factor (dB)
802.11ax (HE20)	26	MCS0	5.138	5.239	0.981	0.000
	52	MCS0	2.605	2.704	0.963	0.162
	106	MCS0	1.251	1.347	0.929	0.319
	242	MCS0	0.589	0.685	0.860	0.656
802.11ax(SU)	BW 20	MCS0	0.590	0.688	0.857	0.670

Test Plots

Note:

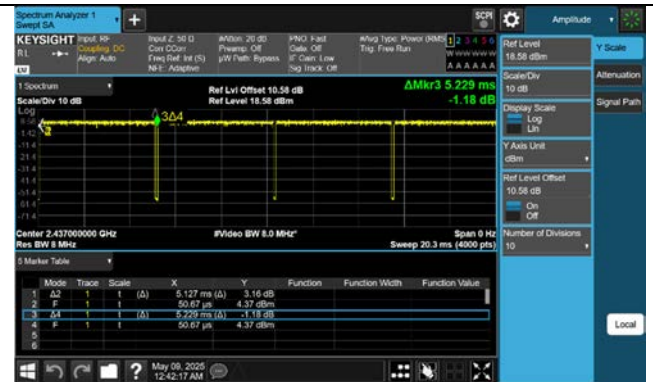
In order to simplify the report, attached plots were only the lowest data rate.

[SISO]

26 Tones (MCS 0)



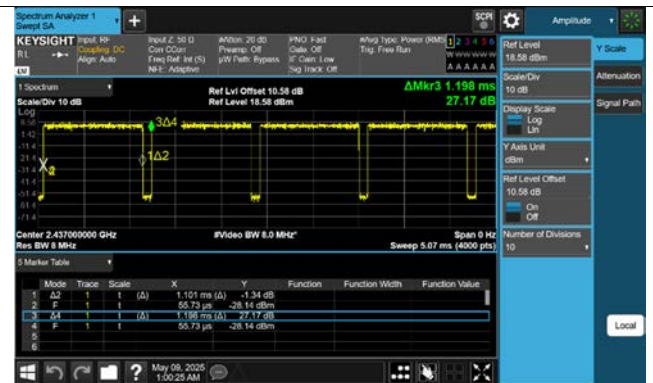
52 Tones (MCS 0)



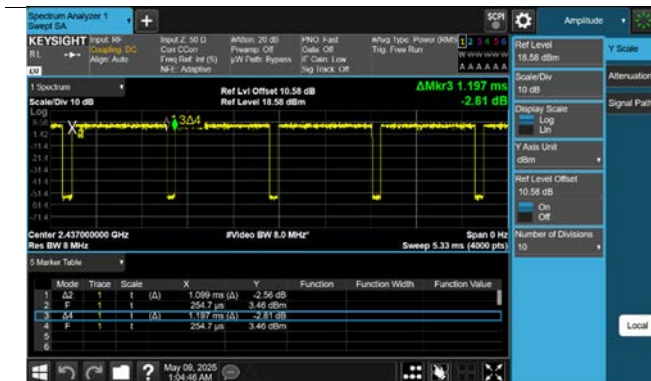
106 Tones (MCS 0)



242 Tones (MCS 0)



SU (MCS 0)

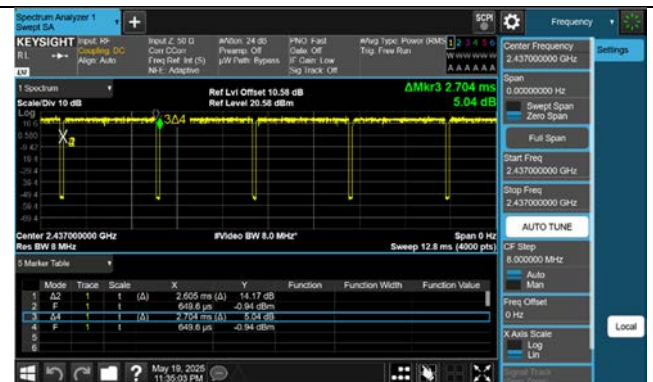


[MIMO_SDM(Ant.1+Ant.2)]

26 Tones (MCS 0)



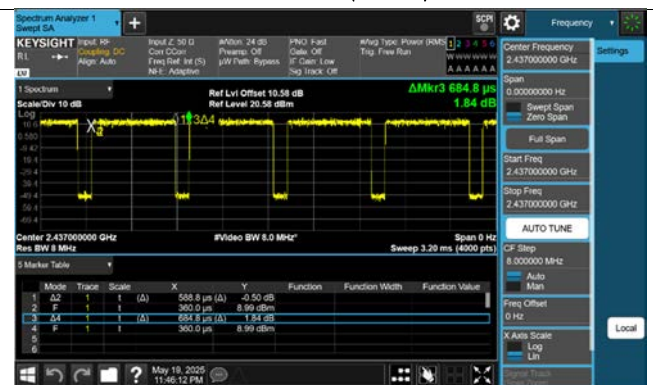
52 Tones (MCS 0)



106 Tones (MCS 0)



242 Tones (MCS 0)



SU (MCS 0)



9.2 6 dB BANDWIDTH

Limit : > 500 kHz

[ANT.1]

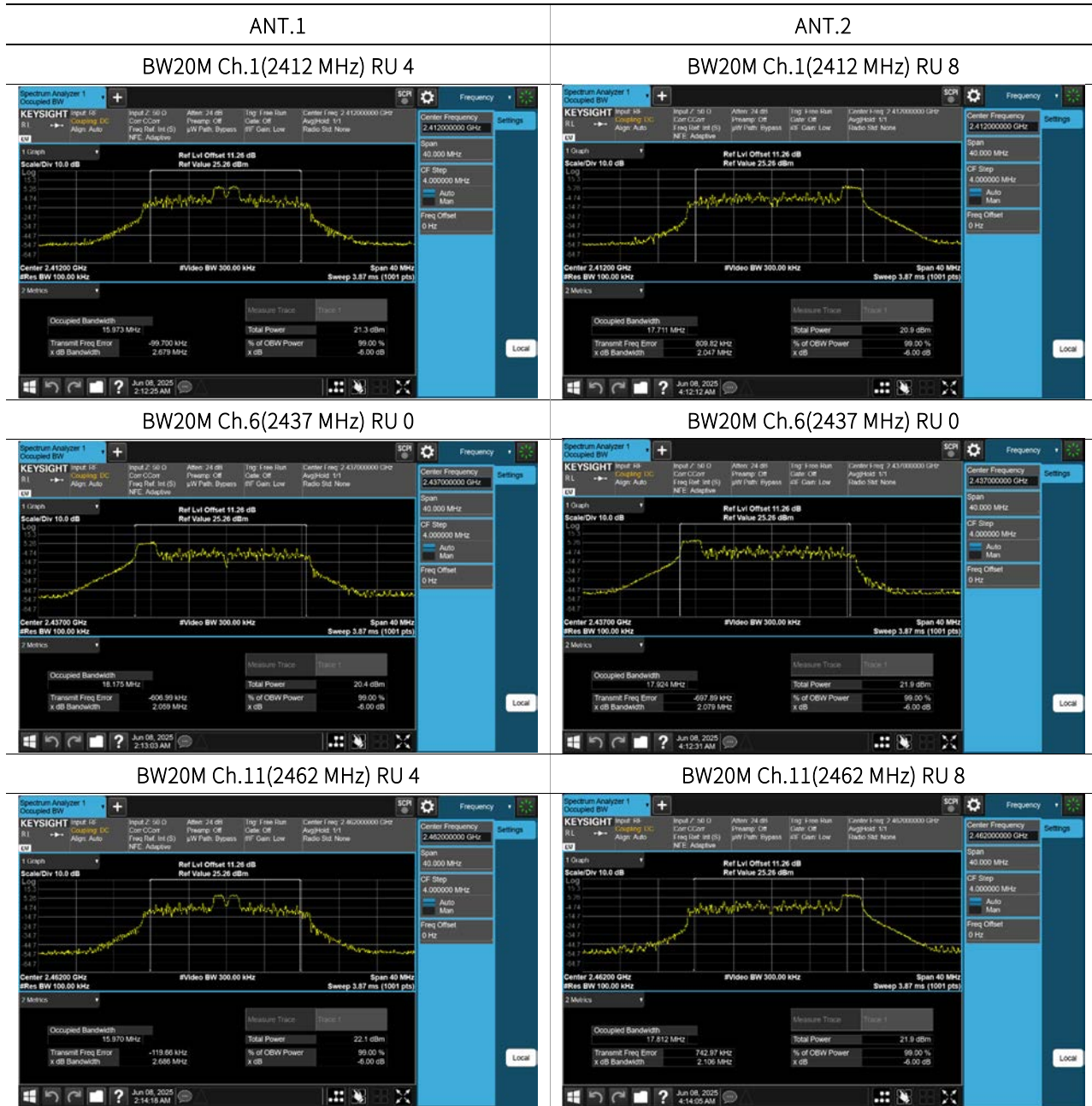
Mode	Freq. [MHz]	CH.	6dB Bandwidth [MHz]			99% Occupied Bandwidth [MHz]		
			RU Index : Low	RU Index : Mid	RU Index : High	RU Index : Low	RU Index : Mid	RU Index : High
			ANT1	ANT1	ANT1	ANT1	ANT1	ANT1
HE20 26T	2412	1	14.54	2.679	14.53	17.948	15.973	17.925
	2437	6	2.059	2.685	2.114	18.175	16.177	17.995
	2462	11	8.237	2.686	15.78	17.891	15.970	17.995
	2467	12	2.083	2.673	17.01	17.813	16.113	18.044
	2472	13	2.054	2.697	15.82	17.934	16.390	18.202
HE20 52T	2412	1	15.74	7.884	15.70	17.761	16.190	17.765
	2437	6	17.01	12.87	14.48	18.029	16.647	17.774
	2462	11	14.47	4.118	16.94	17.710	16.155	17.788
	2467	12	14.51	5.059	16.98	17.678	16.267	18.004
	2472	13	14.49	5.053	16.95	17.869	16.496	18.001
HE20 106T	2412	1	16.95	-	16.91	17.741	-	17.735
	2437	6	17.11	-	17.13	18.029	-	17.813
	2462	11	16.79	-	16.82	17.690	-	17.767
	2467	12	17.00	-	17.03	17.715	-	17.952
	2472	13	17.01	-	17.10	17.956	-	18.014
HE20 242T	2412	1	-	17.25	-	-	18.737	-
	2437	6	-	18.62	-	-	18.835	-
	2462	11	-	17.21	-	-	18.714	-
	2467	12	-	18.05	-	-	18.795	-
	2472	13	-	18.90	-	-	18.847	-
HE20 SU	2412	1	-	18.14	-	-	18.701	-
	2437	6	-	18.61	-	-	18.826	-
	2462	11	-	17.64	-	-	18.720	-
	2467	12	-	18.21	-	-	18.783	-
	2472	13	-	18.76	-	-	18.865	-

[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
			ANT2	ANT2	ANT2	ANT2	ANT2	ANT2
HE20 26T	2412	1	17.03	2.637	2.047	18.099	16.131	17.711
	2437	6	2.079	2.628	6.998	17.924	16.258	17.956
	2462	11	16.97	2.657	2.106	18.095	16.172	17.812
	2467	12	13.24	2.668	2.055	17.999	16.195	17.830
	2472	13	14.48	2.633	2.027	17.870	16.086	17.917
HE20 52T	2412	1	17.02	12.85	14.50	17.993	16.379	17.656
	2437	6	16.97	10.42	15.71	17.791	16.390	17.790
	2462	11	16.99	10.38	14.50	17.931	16.398	17.678
	2467	12	16.95	10.42	15.70	17.834	16.338	17.746
	2472	13	14.49	10.37	15.73	17.762	16.262	17.780
HE20 106T	2412	1	16.98	-	15.80	17.947	-	17.626
	2437	6	17.05	-	17.04	17.907	-	17.795
	2462	11	17.02	-	17.03	17.948	-	17.669
	2467	12	17.01	-	16.97	17.919	-	17.694
	2472	13	16.96	-	16.95	17.798	-	17.728
HE20 242T	2412	1	-	17.83	-	-	18.737	-
	2437	6	-	18.83	-	-	18.798	-
	2462	11	-	17.85	-	-	18.770	-
	2467	12	-	18.35	-	-	18.761	-
	2472	13	-	17.99	-	-	18.747	-
HE20 SU	2412	1	-	17.48	-	-	18.758	-
	2437	6	-	18.62	-	-	18.826	-
	2462	11	-	18.49	-	-	18.756	-
	2467	12	-	18.53	-	-	18.769	-
	2472	13	-	18.50	-	-	18.752	-

Test Plots

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



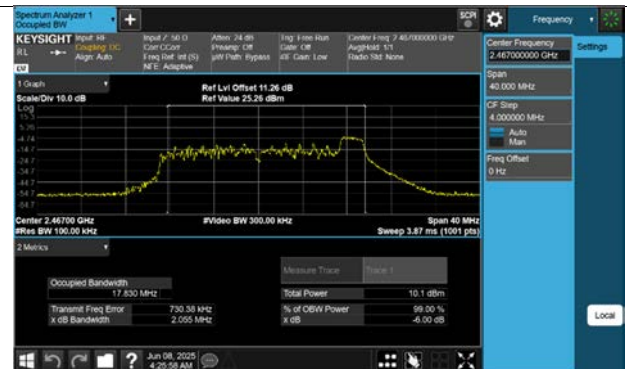
ANT.1

BW20M Ch.12(2467 MHz) RU 0

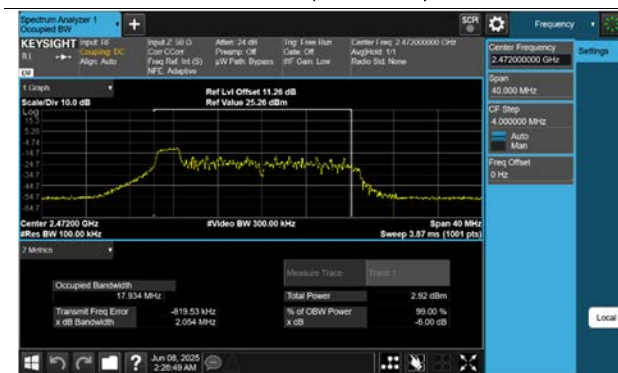


ANT.2

BW20M Ch.12(2467 MHz) RU 8



BW20M Ch.13(2472 MHz) RU 0



BW20M Ch.13(2472 MHz) RU 8



9.3 OUTPUT POWER

Note:

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

Peak Power

[SISO Ant.1]

Mode	Freq. [MHz]	CH.	Total Peak Power [dBm]		
			RU Index : Low	RU Index : Mid	RU Index : High
			ANT1	ANT1	ANT1
HE20 26T	2412	1	18.27	20.68	18.17
	2437	6	19.22	20.75	19.99
	2462	11	18.68	20.83	18.30
	2467	12	10.22	11.35	8.89
	2472	13	0.00	0.80	-0.61
HE20 52T	2412	1	18.71	20.17	18.56
	2437	6	19.25	20.12	20.09
	2462	11	19.23	20.54	18.75
	2467	12	11.57	12.46	10.35
	2472	13	0.22	0.78	-0.49
HE20 106T	2412	1	19.24	-	19.09
	2437	6	19.71	-	20.12
	2462	11	19.75	-	19.44
	2467	12	11.77	-	10.84
	2472	13	0.38	-	-0.20
HE20 242T	2412	1	-	18.43	-
	2437	6	-	19.09	-
	2462	11	-	18.83	-
	2467	12	-	10.54	-
	2472	13	-	-0.74	-
HE20 SU	2412	1	-	18.56	-
	2437	6	-	19.27	-
	2462	11	-	18.79	-
	2467	12	-	10.29	-
	2472	13	-	-0.73	-

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

Mode	Freq. [MHz]	CH.	Total Peak Power [dBm]									Limit [dBm]
			RU Index : Low			RU Index : Mid			RU Index : High			
			ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	
HE20 26T	2412	1	17.92	19.02	21.51	20.50	21.44	24.01	17.93	20.30	22.29	30
	2437	6	18.88	19.22	22.06	20.74	20.55	23.66	19.65	18.88	22.29	30
	2462	11	18.66	20.01	22.40	20.87	22.21	24.60	18.34	20.94	22.84	30
	2467	12	10.08	9.95	13.03	11.36	12.27	14.85	8.75	10.75	12.87	30
	2472	13	0.18	0.00	3.01	0.91	0.90	3.92	0.00	0.00	3.01	30
HE20 52T	2412	1	18.68	19.50	22.12	19.87	20.95	23.45	18.27	20.68	22.65	30
	2437	6	19.05	19.56	22.32	20.18	20.24	23.22	19.81	19.32	22.58	30
	2462	11	19.33	20.36	22.88	20.62	21.49	24.09	18.68	21.16	23.10	30
	2467	12	11.57	11.60	14.60	12.44	12.92	15.70	10.39	12.17	14.38	30
	2472	13	0.22	0.00	3.01	0.81	0.66	3.74	0.00	0.00	3.01	30
HE20 106T	2412	1	19.19	20.07	22.66	-	-	-	19.08	21.06	23.19	30
	2437	6	19.60	19.83	22.73	-	-	-	20.05	19.74	22.91	30
	2462	11	19.72	20.91	23.37	-	-	-	19.45	21.49	23.60	30
	2467	12	11.73	12.13	14.94	-	-	-	10.96	12.56	14.84	30
	2472	13	0.39	0.00	3.19	-	-	-	0.00	0.00	3.01	30
HE20 242T	2412	1	-	-	-	18.38	19.92	22.23	-	-	-	30
	2437	6	-	-	-	19.06	18.99	22.04	-	-	-	30
	2462	11	-	-	-	18.85	20.48	22.75	-	-	-	30
	2467	12	-	-	-	10.59	11.69	14.19	-	-	-	30
	2472	13	-	-	-	0.00	0.00	3.01	-	-	-	30
HE20 SU	2412	1	-	-	-	18.74	19.80	22.31	-	-	-	30
	2437	6	-	-	-	19.13	19.02	22.08	-	-	-	30
	2462	11	-	-	-	18.86	20.56	22.80	-	-	-	30
	2467	12	-	-	-	10.24	11.72	14.05	-	-	-	30
	2472	13	-	-	-	0.00	0.00	3.01	-	-	-	30

Average Power

Note:

1. Total Power [dBm] = Measured Power [dBm] + Duty Cycle Factor [dB]

[SISO Ant.1]

Mode	Freq. [MHz]	CH.	Total Average Power [dBm]		
			RU Index : Low	RU Index : Mid	RU Index : High
			ANT1	ANT1	ANT1
HE20 26T	2412	1	7.22	10.78	7.01
	2437	6	7.79	10.64	8.91
	2462	11	7.56	10.90	6.88
	2467	12	-0.93	1.07	-2.72
	2472	13	-10.63	-9.31	-11.77
HE20 52T	2412	1	8.06	10.34	7.85
	2437	6	8.38	10.04	9.43
	2462	11	8.47	10.58	7.81
	2467	12	0.73	2.13	-1.03
	2472	13	-10.21	-9.25	-11.29
HE20 106T	2412	1	9.35	-	9.04
	2437	6	9.26	-	9.97
	2462	11	9.59	-	9.11
	2467	12	1.39	-	0.12
	2472	13	-9.71	-	-10.60
HE20 242T	2412	1	-	9.33	-
	2437	6	-	9.66	-
	2462	11	-	9.46	-
	2467	12	-	0.86	-
	2472	13	-	-10.14	-
HE20 SU	2412	1	-	13.78	-
	2437	6	-	15.38	-
	2462	11	-	10.32	-
	2467	12	-	1.00	-
	2472	13	-	-10.07	-

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

Mode	Freq. [MHz]	CH.	Total Average Power [dBm]									Limit [dBm]
			RU Index : Low			RU Index : Mid			RU Index : High			
			ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	
HE20 26T	2412	1	6.87	7.28	10.09	10.56	11.45	14.04	6.78	9.47	11.34	30
	2437	6	7.99	8.30	11.16	10.75	10.62	13.70	9.04	7.89	11.51	30
	2462	11	7.64	8.39	11.04	11.00	11.94	14.51	7.04	9.79	11.64	30
	2467	12	0.00	-0.11	1.92	1.00	2.11	4.60	-1.48	0.00	1.54	30
	2472	13	-5.92	-6.54	-8.48	-4.41	-3.63	-6.36	-6.82	-6.92	-9.19	30
HE20 52T	2412	1	7.87	8.25	11.08	10.17	10.62	13.41	7.69	10.20	12.13	30
	2437	6	8.65	9.09	11.88	10.27	10.58	13.44	9.66	8.80	12.26	30
	2462	11	8.58	9.35	11.99	10.81	11.45	14.15	7.99	10.59	12.49	30
	2467	12	0.90	0.78	3.85	2.27	2.79	5.55	-0.67	1.29	3.48	30
	2472	13	-5.28	-5.66	-7.75	-4.23	-3.89	-6.40	-6.20	-5.95	-8.41	30
HE20 106T	2412	1	9.09	9.60	12.36	-	-	-	8.87	10.98	13.06	30
	2437	6	9.52	9.91	12.73	-	-	-	10.13	9.69	12.93	30
	2462	11	9.80	10.53	13.19	-	-	-	9.29	11.37	13.46	30
	2467	12	1.52	1.89	4.72	-	-	-	0.24	2.38	4.45	30
	2472	13	-4.74	-4.74	-7.06	-	-	-	-5.47	-4.82	-7.55	30
HE20 242T	2412	1	-	-	-	9.25	10.51	12.93	-	-	-	30
	2437	6	-	-	-	9.99	9.96	12.99	-	-	-	30
	2462	11	-	-	-	9.78	11.14	13.52	-	-	-	30
	2467	12	-	-	-	1.12	2.22	4.72	-	-	-	30
	2472	13	-	-	-	-4.99	-4.65	-7.15	-	-	-	30
HE20 SU	2412	1	-	-	-	14.08	15.34	17.76	-	-	-	30
	2437	6	-	-	-	15.62	15.64	18.64	-	-	-	30
	2462	11	-	-	-	10.57	11.80	14.24	-	-	-	30
	2467	12	-	-	-	1.18	2.30	4.79	-	-	-	30
	2472	13	-	-	-	-5.02	-4.56	-7.05	-	-	-	30

9.4 POWER SPECTRAL DENSITY

Limit : 8 [dBm/3 kHz]

Note :

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

2. Total PSD = Measured Value + Duty Cycle Factor

[SISO Ant.1]

Mode	Freq. [MHz]	CH.	Total Power Spectral Density [dBm/MHz]		
			RU Index : Low	RU Index : Mid	RU Index : High
			ANT1	ANT1	ANT1
HE20 26T	2412	1	-9.236	-6.150	-9.059
	2437	6	-8.693	-6.128	-7.517
	2462	11	-8.831	-5.890	-9.085
	2467	12	-17.437	-15.820	-19.034
	2472	13	-27.241	-26.085	-28.486
HE20 52T	2412	1	-10.393	-9.103	-10.854
	2437	6	-10.791	-9.348	-9.705
	2462	11	-10.106	-8.933	-10.899
	2467	12	-18.134	-17.547	-19.556
	2472	13	-28.824	-28.904	-30.295
HE20 106T	2412	1	-12.084	-	-12.039
	2437	6	-12.077	-	-11.704
	2462	11	-11.871	-	-12.162
	2467	12	-20.381	-	-21.219
	2472	13	-31.755	-	-32.228
HE20 242T	2412	1	-	-15.272	-
	2437	6	-	-15.367	-
	2462	11	-	-15.231	-
	2467	12	-	-23.633	-
	2472	13	-	-34.565	-
HE20 SU	2412	1	-	-11.041	-
	2437	6	-	-9.796	-
	2462	11	-	-14.394	-
	2467	12	-	-23.895	-
	2472	13	-	-35.346	-

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

Mode	Freq. [MHz]	CH.	Total Power Spectral Density [dBm/MHz]									Limit [dBm/3 kHz]
			RU Index : Low			RU Index : Mid			RU Index : High			
			ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	
HE20 26T	2412	1	-9.858	-9.560	-6.696	-6.414	-5.705	-3.035	-10.146	-7.166	-5.395	8
	2437	6	-9.013	-8.317	-5.641	-6.266	-6.265	-3.255	-7.819	-8.670	-5.213	8
	2462	11	-8.762	-8.340	-5.536	-6.362	-5.058	-2.651	-9.744	-7.035	-5.171	8
	2467	12	-17.568	-17.958	-14.748	-15.904	-14.617	-12.203	-19.552	-16.726	-14.903	8
	2472	13	-27.740	-28.902	-25.272	-26.453	-26.208	-23.318	-28.720	-28.885	-25.791	8
HE20 52T	2412	1	-11.089	-10.886	-7.976	-9.750	-9.024	-6.361	-11.305	-9.058	-7.027	8
	2437	6	-10.994	-9.785	-7.337	-9.702	-8.877	-6.259	-9.710	-10.671	-7.153	8
	2462	11	-10.513	-9.434	-6.929	-8.770	-8.187	-5.458	-11.235	-8.271	-6.494	8
	2467	12	-18.292	-18.544	-15.406	-17.481	-17.310	-14.384	-20.309	-17.997	-15.990	8
	2472	13	-29.536	-30.479	-26.971	-28.928	-29.178	-26.041	-30.668	-30.564	-27.605	8
HE20 106T	2412	1	-12.697	-11.976	-9.311	-	-	-	-12.789	-11.219	-8.923	8
	2437	6	-12.795	-12.314	-9.538	-	-	-	-12.424	-12.783	-9.590	8
	2462	11	-11.909	-11.773	-8.830	-	-	-	-12.501	-10.975	-8.661	8
	2467	12	-20.692	-20.277	-17.469	-	-	-	-21.323	-19.836	-17.506	8
	2472	13	-32.008	-32.517	-29.245	-	-	-	-32.679	-32.219	-29.433	8
HE20 242T	2412	1	-	-	-	-15.303	-14.183	-11.697	-	-	-	8
	2437	6	-	-	-	-15.115	-14.872	-11.982	-	-	-	8
	2462	11	-	-	-	-14.779	-13.735	-11.215	-	-	-	8
	2467	12	-	-	-	-23.870	-22.567	-20.160	-	-	-	8
	2472	13	-	-	-	-32.976	-35.007	-30.864	-	-	-	8
HE20 SU	2412	1	-	-	-	-10.761	-8.473	-6.457	-	-	-	8
	2437	6	-	-	-	-9.167	-9.125	-6.135	-	-	-	8
	2462	11	-	-	-	-13.895	-11.447	-9.490	-	-	-	8
	2467	12	-	-	-	-23.328	-23.015	-20.158	-	-	-	8
	2472	13	-	-	-	-35.131	-33.293	-31.105	-	-	-	8

Test Plots

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

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

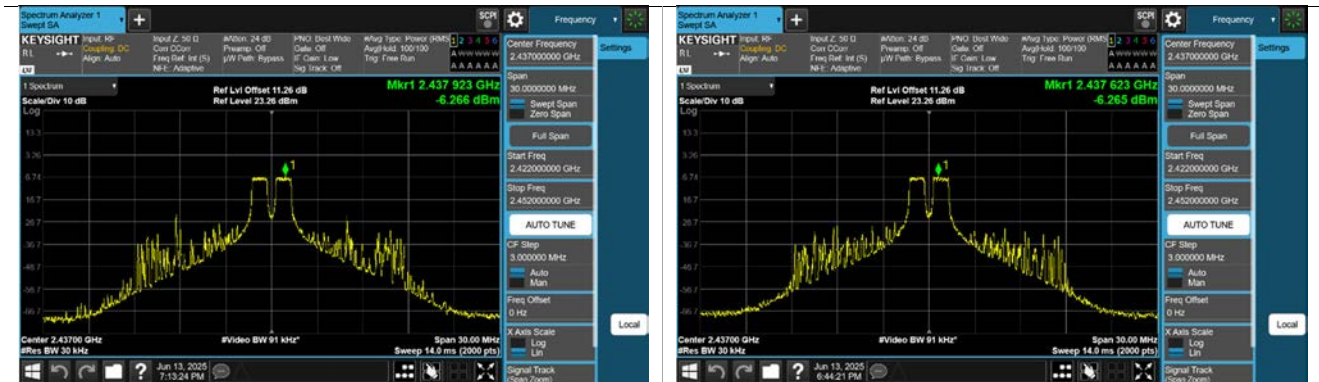
ANT.1

ANT.2

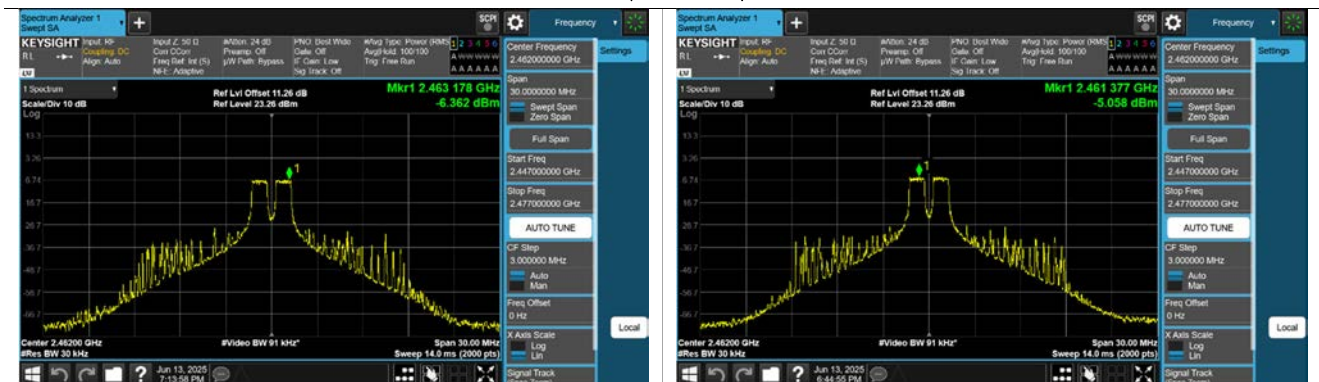
BW20M Ch.1(2412 MHz) 26T RU 4



BW20M Ch.6(2437 MHz) 26T RU 4



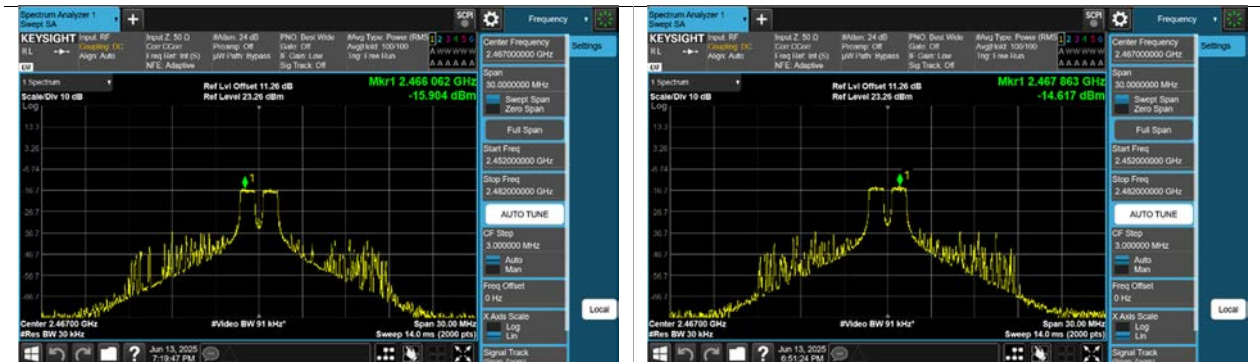
BW20M Ch.11(2462 MHz) 26T RU 4



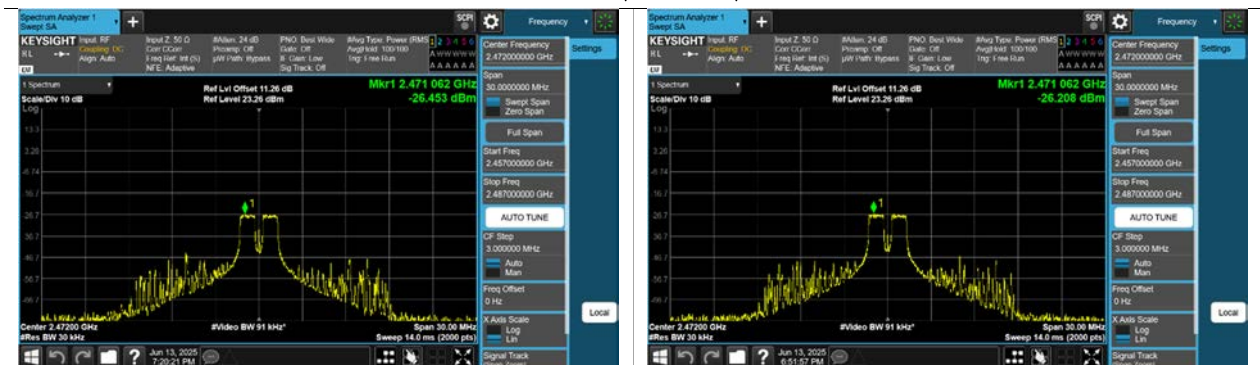
ANT.1

ANT.2

BW20M Ch.12(2467 MHz) RU 4



BW20M Ch.13(2472 MHz) RU 4



9.5 BAND EDGE / CONDUCTED SPURIOUS EMISSIONS

Band Edge

Limit : 30 dBc

[SISO Ant.1]

Mode	Freq. [MHz]	CH.	RU Index	Measured Position	Band edge [dB]
HE20 26T	2412	1	Low	Lowest Bandedge	31.786
	2462	11	High	Highest Bandedge	48.074
	2467	12	High	Highest Bandedge	41.120
	2472	13	High	Highest Bandedge	30.100
HE20 52T	2412	1	Low	Lowest Bandedge	34.730
	2462	11	High	Highest Bandedge	54.444
	2467	12	High	Highest Bandedge	47.465
	2472	13	High	Highest Bandedge	31.620
HE20 106T	2412	1	Low	Lowest Bandedge	35.865
	2462	11	High	Highest Bandedge	52.498
	2467	12	High	Highest Bandedge	44.742
	2472	13	High	Highest Bandedge	30.741
HE20 242T	2412	1	Low	Lowest Bandedge	38.277
	2462	11	High	Highest Bandedge	50.581
	2467	12	High	Highest Bandedge	43.437
	2472	13	High	Highest Bandedge	30.430
HE20 SU	2412	1	Low	Lowest Bandedge	37.340
	2462	11	High	Highest Bandedge	51.340
	2467	12	High	Highest Bandedge	45.410
	2472	13	High	Highest Bandedge	31.930

[MIMO_SDM(Ant. 1)]

Mode	Freq. [MHz]	CH.	RU Index	Measured Position	Band edge [dB]
HE20 26T	2412	1	Low	Lowest Bandedge	32.989
	2462	11	High	Highest Bandedge	55.374
	2467	12	High	Highest Bandedge	47.839
	2472	13	High	Highest Bandedge	31.016
HE20 52T	2412	1	Low	Lowest Bandedge	34.503
	2462	11	High	Highest Bandedge	53.924
	2467	12	High	Highest Bandedge	45.533
	2472	13	High	Highest Bandedge	30.686
HE20 106T	2412	1	Low	Lowest Bandedge	38.227
	2462	11	High	Highest Bandedge	52.843
	2467	12	High	Highest Bandedge	44.010
	2472	13	High	Highest Bandedge	31.460
HE20 242T	2412	1	Low	Lowest Bandedge	37.720
	2462	11	High	Highest Bandedge	50.954
	2467	12	High	Highest Bandedge	43.077
	2472	13	High	Highest Bandedge	32.180
HE20 SU	2412	1	Low	Lowest Bandedge	37.368
	2462	11	High	Highest Bandedge	51.571
	2467	12	High	Highest Bandedge	45.047
	2472	13	High	Highest Bandedge	31.243

[MIMO_SDM(Ant. 2)]

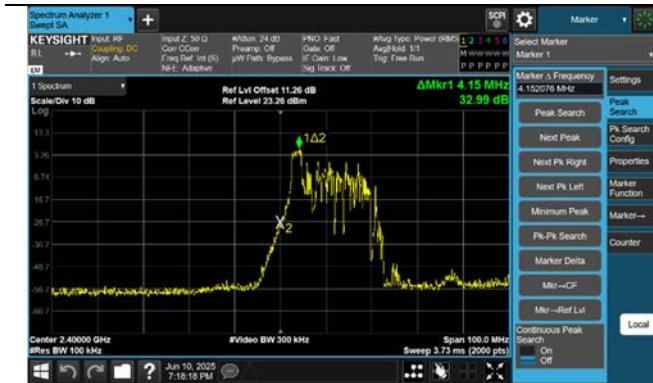
Mode	Freq. [MHz]	CH.	RU Index	Measured Position	Band edge [dB]
HE20 26T	2412	1	Low	Lowest Bandedge	33.335
	2462	11	High	Highest Bandedge	57.494
	2467	12	High	Highest Bandedge	50.486
	2472	13	High	Highest Bandedge	32.737
HE20 52T	2412	1	Low	Lowest Bandedge	34.581
	2462	11	High	Highest Bandedge	56.059
	2467	12	High	Highest Bandedge	48.455
	2472	13	High	Highest Bandedge	30.739
HE20 106T	2412	1	Low	Lowest Bandedge	35.710
	2462	11	High	Highest Bandedge	54.587
	2467	12	High	Highest Bandedge	46.022
	2472	13	High	Highest Bandedge	31.464
HE20 242T	2412	1	Low	Lowest Bandedge	39.848
	2462	11	High	Highest Bandedge	51.563
	2467	12	High	Highest Bandedge	45.168
	2472	13	High	Highest Bandedge	33.109
HE20 SU	2412	1	Low	Lowest Bandedge	35.477
	2462	11	High	Highest Bandedge	50.937
	2467	12	High	Highest Bandedge	46.191
	2472	13	High	Highest Bandedge	32.744

Test Plots

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

[MIMO_SDM(Ant. 1)]

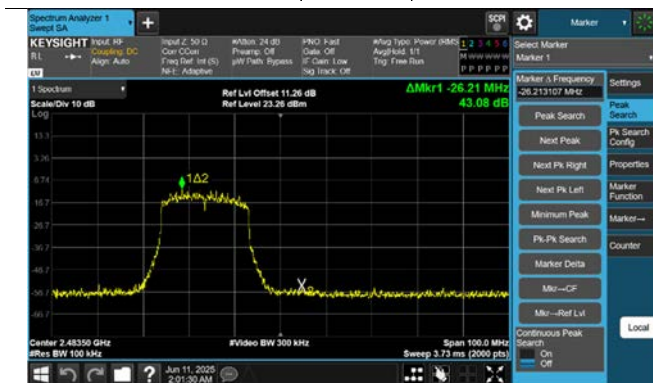
BW 20M Ch.1(2412 MHz) 26T RU 0



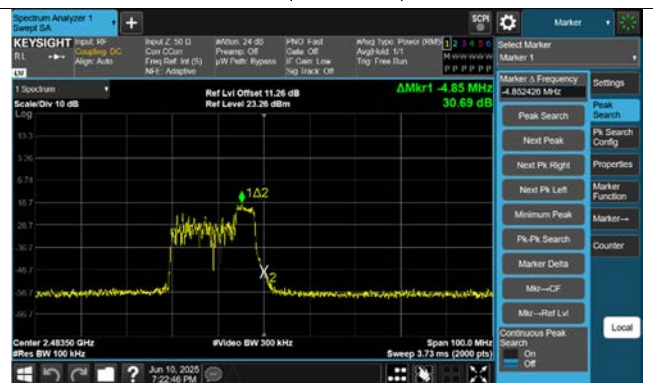
BW 20M Ch.11(2462 MHz) 242T RU 61



BW 20M Ch.12(2467 MHz) 242T RU 61



BW 20M Ch.13(2472 MHz) 52T RU 40



[MIMO_SDM(Ant. 2)]

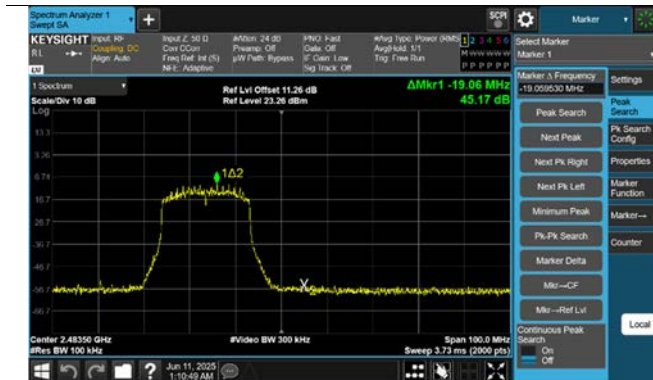
BW 20M Ch.1(2412 MHz) 26T RU 0



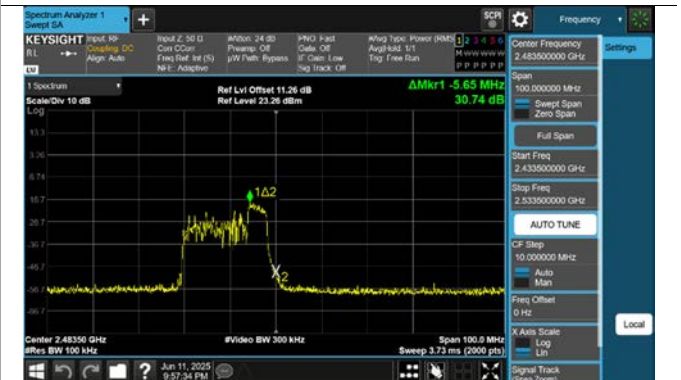
BW 20M Ch.11(2462 MHz) SU



BW 20M Ch.12(2467 MHz) 242T RU 61



BW 20M Ch.13(2472 MHz) 52T RU 40



Conducted Spurious Emissions

Limit : 30 dBc

[SISO ANT.1]

Mode	Freq. [MHz]	CH.	Conducted Spurious Emissions [dB]		
			RU Index : Low	RU Index : Mid	RU Index : High
			ANT1	ANT1	ANT1
HE20 26T	2412	1	63.415	69.843	64.027
	2437	6	66.286	64.953	67.026
	2462	11	61.648	64.081	60.669
	2467	12	52.907	54.612	52.033
	2472	13	43.608	45.093	42.147
HE20 52T	2412	1	62.816	64.641	62.260
	2437	6	65.622	65.326	65.232
	2462	11	61.828	62.430	59.578
	2467	12	50.574	53.812	50.075
	2472	13	41.796	42.965	40.933
HE20 106T	2412	1	60.686	-	63.122
	2437	6	63.065	-	62.394
	2462	11	59.807	-	59.378
	2467	12	50.140	-	51.350
	2472	13	39.127	-	38.750
HE20 242T	2412	1	-	59.732	-
	2437	6	-	59.982	-
	2462	11	-	55.945	-
	2467	12	-	47.132	-
	2472	13	-	37.888	-
HE20 SU	2412	1	-	62.119	-
	2437	6	-	62.535	-
	2462	11	-	59.833	-
	2467	12	-	48.435	-
	2472	13	-	36.186	-

[MIMO_SDM(Ant. 1)]

Mode	Freq. [MHz]	CH.	Conducted Spurious Emissions [dB]		
			RU Index : Low	RU Index : Mid	RU Index : High
			ANT1	ANT1	ANT1
HE20 26T	2412	1	65.590	68.398	64.409
	2437	6	66.133	68.813	67.791
	2462	11	63.210	63.767	61.378
	2467	12	53.803	56.127	53.497
	2472	13	44.708	45.001	43.731
HE20 52T	2412	1	63.305	64.341	63.262
	2437	6	64.893	64.904	65.898
	2462	11	59.962	63.577	59.667
	2467	12	51.811	54.572	50.812
	2472	13	43.433	43.910	40.743
HE20 106T	2412	1	61.021	-	61.330
	2437	6	62.590	-	63.825
	2462	11	58.937	-	59.563
	2467	12	51.104	-	49.323
	2472	13	39.742	-	37.968
HE20 242T	2412	1	-	59.987	-
	2437	6	-	60.588	-
	2462	11	-	58.206	-
	2467	12	-	48.401	-
	2472	13	-	37.004	-
HE20 SU	2412	1	-	62.814	-
	2437	6	-	62.957	-
	2462	11	-	57.533	-
	2467	12	-	48.750	-
	2472	13	-	37.948	-

[MIMO_SDM(Ant. 2)]

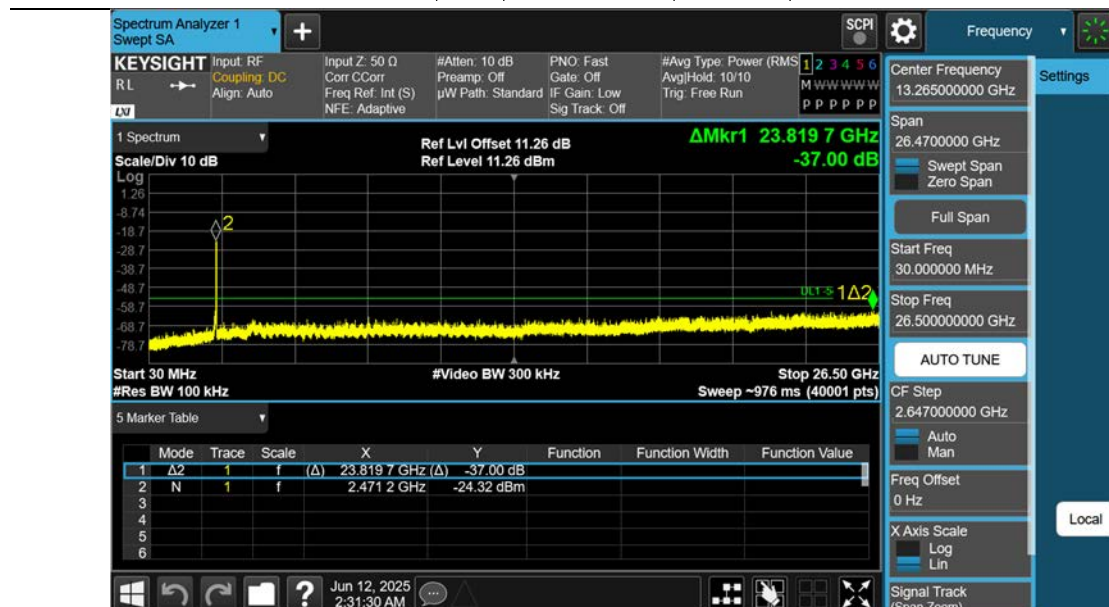
Mode	Freq. [MHz]	CH.	Conducted Spurious Emissions [dB]		
			RU Index : Low	RU Index : Mid	RU Index : High
			ANT1	ANT1	ANT1
HE20 26T	2412	1	61.719	69.521	66.854
	2437	6	65.665	65.652	65.128
	2462	11	60.978	65.831	64.067
	2467	12	54.461	56.498	53.486
	2472	13	43.131	43.493	41.022
HE20 52T	2412	1	63.563	65.519	62.708
	2437	6	63.950	66.037	62.748
	2462	11	61.753	63.496	62.291
	2467	12	54.543	54.935	55.996
	2472	13	40.350	43.134	41.189
HE20 106T	2412	1	63.248	-	62.745
	2437	6	62.788	-	62.303
	2462	11	60.199	-	61.245
	2467	12	53.213	-	52.697
	2472	13	38.861	-	40.934
HE20 242T	2412	1	-	60.208	-
	2437	6	-	59.352	-
	2462	11	-	59.104	-
	2467	12	-	52.270	-
	2472	13	-	35.579	-
HE20 SU	2412	1	-	62.825	-
	2437	6	-	62.516	-
	2462	11	-	60.105	-
	2467	12	-	49.673	-
	2472	13	-	36.405	-

Test Plots

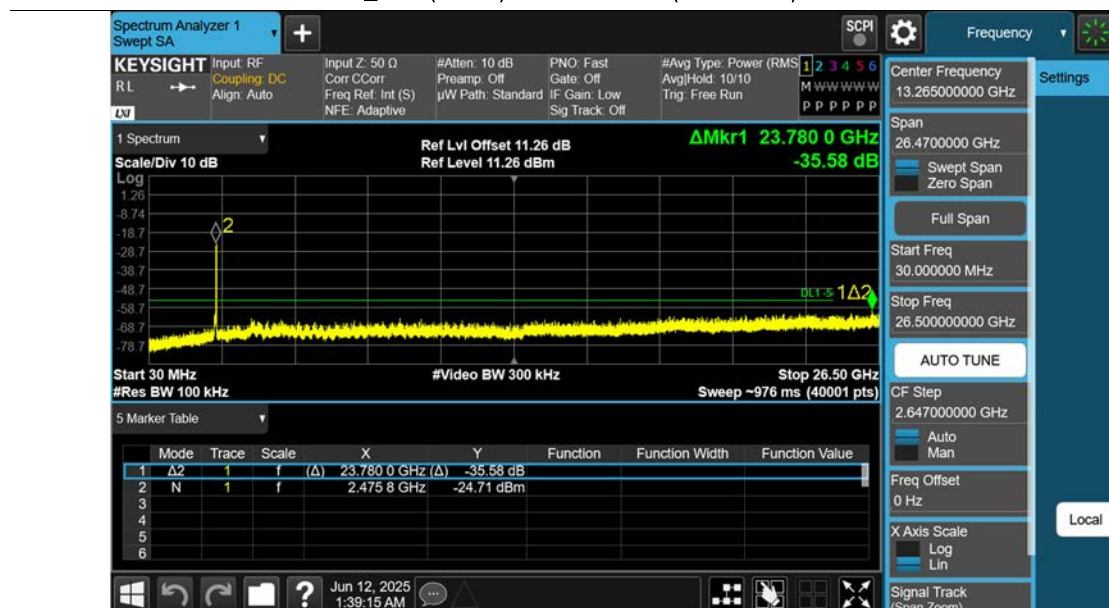
Note:

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

MIMO_SDM(Ant. 1) BW20M Ch.13(2 472 MHz) 242T RU 61



MIMO_SDM(Ant. 2) BW20M Ch. 13(2 472 MHz) 242T RU 61



Limit

ANT.1 : -54.32 dBm, ANT.2 : -54.71 dBm

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]	[dB μ V/m]	[dB/m]	[H/V]	[dB μ V/m]	[dB μ V/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 (dB μ V) + Distance extrapolation factor

Frequency Range : Below 1 GHz

Frequency	Measured Value	A.F+C.L	POL	Total	Limit	Margin
[MHz]	[dB μ V/m]	[dB/m]	[H/V]	[dB μ V/m]	[dB μ V/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_SDM(Ant.1+Ant.2)]

Band : DTS			Operation Mode :		802.11ax_HE20 26T RU4			
CH.1 2412 MHz			Transfer Rate :		MCS0			
Frequency [MHz]	Measured value [dBμV]	D.C.F [dB]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4824	54.08	0.00	-9.69	V	44.39	73.98	29.59	PK
4824	43.32	0.00	-9.69	V	33.63	53.98	20.35	AV
7236	52.25	0.00	-3.08	V	49.17	73.98	24.81	PK
7236	39.73	0.00	-3.08	V	36.65	53.98	17.33	AV
4824	54.60	0.00	-9.69	H	44.91	73.98	29.07	PK
4824	43.79	0.00	-9.69	H	34.10	53.98	19.88	AV
7236	51.56	0.00	-3.08	H	48.48	73.98	25.50	PK
7236	39.88	0.00	-3.08	H	36.80	53.98	17.18	AV

Band : DTS			Operation Mode :		802.11ax_HE20 26T RU4			
CH.6 2437 MHz			Transfer Rate :		MCS0			
Frequency [MHz]	Measured value [dBμV]	D.C.F [dB]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4874	57.48	0.00	-9.58	V	47.90	73.98	26.08	PK
4874	45.92	0.00	-9.58	V	36.34	53.98	17.64	AV
7311	51.63	0.00	-3.11	V	48.52	73.98	25.46	PK
7311	39.75	0.00	-3.11	V	36.64	53.98	17.34	AV
4874	56.10	0.00	-9.58	H	46.52	73.98	27.46	PK
4874	45.51	0.00	-9.58	H	35.93	53.98	18.05	AV
7311	51.42	0.00	-3.11	H	48.31	73.98	25.67	PK
7311	39.74	0.00	-3.11	H	36.63	53.98	17.35	AV

Band : DTS			Operation Mode :		802.11ax_HE20 26T RU4			
CH.11 2462 MHz			Transfer Rate :		MCS0			
Frequency [MHz]	Measured value [dBμV]	D.C.F [dB]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4924	55.92	0.00	-9.43	V	46.49	73.98	27.49	PK
4924	45.01	0.00	-9.43	V	35.58	53.98	18.40	AV
7386	51.05	0.00	-2.99	V	48.06	73.98	25.92	PK
7386	39.48	0.00	-2.99	V	36.49	53.98	17.49	AV
4924	56.35	0.00	-9.43	H	46.92	73.98	27.06	PK
4924	44.59	0.00	-9.43	H	35.16	53.98	18.82	AV
7386	50.77	0.00	-2.99	H	47.78	73.98	26.20	PK
7386	39.47	0.00	-2.99	H	36.48	53.98	17.50	AV

Band : DTS			Operation Mode :		802.11ax_HE20 SU			
CH.1 2412 MHz			Transfer Rate :		MCS0			
Frequency [MHz]	Measured value [dBμV]	D.C.F [dB]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4824	54.31	0.00	-9.69	V	44.62	73.98	29.36	PK
4824	43.00	0.67	-9.69	V	33.98	53.98	20.00	AV
7236	52.17	0.00	-3.08	V	49.09	73.98	24.89	PK
7236	39.78	0.67	-3.08	V	37.37	53.98	16.61	AV
4824	54.29	0.00	-9.69	H	44.60	73.98	29.38	PK
4824	43.27	0.67	-9.69	H	34.25	53.98	19.73	AV
7236	52.33	0.00	-3.08	H	49.25	73.98	24.73	PK
7236	39.84	0.67	-3.08	H	37.43	53.98	16.55	AV

Band : DTS			Operation Mode :		802.11ax_HE20 SU			
CH.6 2437 MHz			Transfer Rate :		MCS0			
Frequency [MHz]	Measured value [dBμV]	D.C.F [dB]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4874	56.89	0.00	-9.58	V	47.31	73.98	26.67	PK
4874	45.24	0.67	-9.58	V	36.33	53.98	17.65	AV
7311	51.90	0.00	-3.11	V	48.79	73.98	25.19	PK
7311	39.78	0.67	-3.11	V	37.34	53.98	16.64	AV
4874	56.71	0.00	-9.58	H	47.13	73.98	26.85	PK
4874	44.69	0.67	-9.58	H	35.78	53.98	18.20	AV
7311	51.34	0.00	-3.11	H	48.23	73.98	25.75	PK
7311	39.77	0.67	-3.11	H	37.33	53.98	16.65	AV

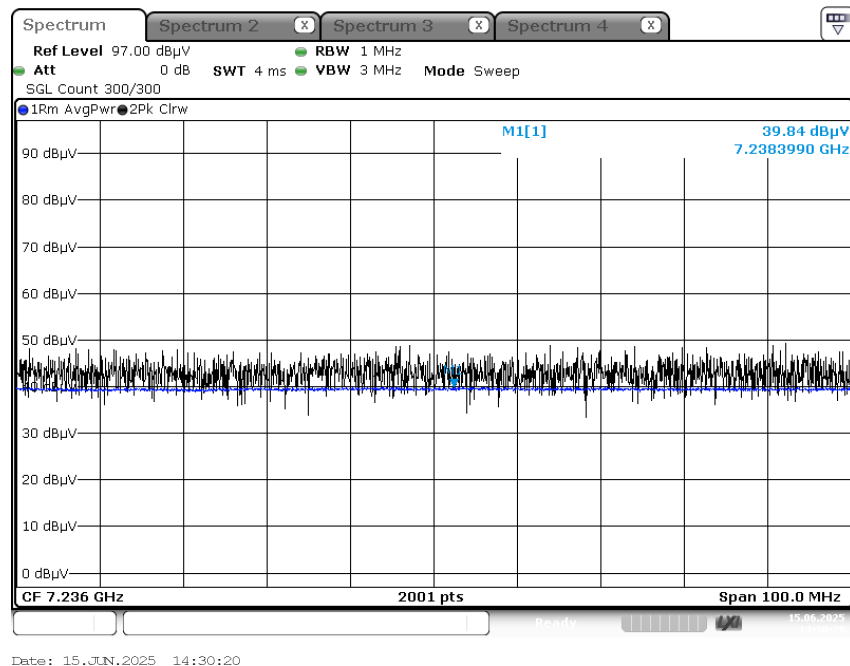
Band : DTS			Operation Mode :		802.11ax_HE20 SU			
CH.11 2462 MHz			Transfer Rate :		MCS0			
Frequency [MHz]	Measured value [dBμV]	D.C.F [dB]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4924	54.65	0.00	-9.43	V	45.22	73.98	28.76	PK
4924	43.37	0.67	-9.43	V	34.61	53.98	19.37	AV
7386	51.14	0.00	-2.99	V	48.15	73.98	25.83	PK
7386	39.46	0.67	-2.99	V	37.14	53.98	16.84	AV
4924	54.80	0.00	-9.43	H	45.37	73.98	28.61	PK
4924	43.36	0.67	-9.43	H	34.60	53.98	19.38	AV
7386	51.26	0.00	-2.99	H	48.27	73.98	25.71	PK
7386	39.50	0.67	-2.99	H	37.18	53.98	16.80	AV

Test Plots

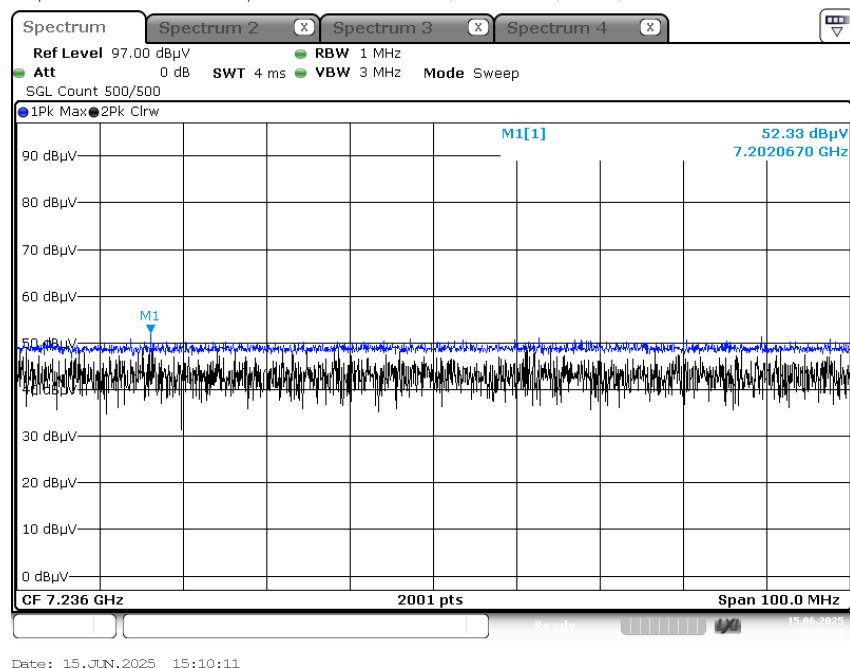
[MIMO_SDM(Ant.1+Ant.2)]

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

Radiated Spurious Emissions plot – Average result (802.11ax(HE20), Ch.1 3rd Harmonic, Y-H, SU)



Radiated Spurious Emissions plot – Peak result (802.11ax(HE20), Ch.1 3rd Harmonic, Z-H, SU)



9.7 RADIATED RESTRICTED BAND EDGES

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

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

Operation Mode :	802.11ax	Tone & RU Index :	SU			MCS index :	MCS0
Channel No. :	1	Frequency :	2412 MHz			Band :	DTS
Frequency [MHz]	Measured Value [dBμv]	Duty Cycle Factor [dB]	ANT. POL [H/V]	Total [dBμv/m]	Limit [dBμv/m]	Margin [dB]	Measurement Type
2310 - 2390	70.70	0.00	H	70.70	73.98	3.28	PK
2310 - 2390	49.85	0.67	H	50.52	53.98	3.46	AV

Operation Mode :	802.11ax_20	Tone & RU Index :	242T & 61			MCS index :	MCS0
Channel No. :	1	Frequency :	2412 MHz			Band :	DTS
Frequency [MHz]	Measured Value [dBμv]	Duty Cycle Factor [dB]	ANT. POL [H/V]	Total [dBμv/m]	Limit [dBμv/m]	Margin [dB]	Measurement Type
2310 - 2390	56.42	0.00	H	56.42	73.98	17.56	PK
2310 - 2390	44.72	0.66	H	45.37	53.98	8.61	AV

Operation Mode :	802.11ax_20	Tone & RU Index :	106T & 53			MCS index :	MCS0
Channel No. :	1	Frequency :	2412 MHz			Band :	DTS
Frequency [MHz]	Measured Value [dBμv]	Duty Cycle Factor [dB]	ANT. POL [H/V]	Total [dBμv/m]	Limit [dBμv/m]	Margin [dB]	Measurement Type
2310 - 2390	56.85	0.00	H	56.85	73.98	17.13	PK
2310 - 2390	44.69	0.32	H	45.01	53.98	8.97	AV

Operation Mode :	802.11ax_20	Tone & RU Index :	52T & 37			MCS index :	MCS0
Channel No. :	1	Frequency :	2412 MHz			Band :	DTS
Frequency [MHz]	Measured Value [dBμv]	Duty Cycle Factor [dB]	ANT. POL [H/V]	Total [dBμv/m]	Limit [dBμv/m]	Margin [dB]	Measurement Type
2310 - 2390	56.34	0.00	H	56.34	73.98	17.64	PK
2310 - 2390	44.63	0.16	H	44.79	53.98	9.19	AV

Operation Mode :	802.11ax_20	Tone & RU Index :	26T & 0		MCS index :	MCS0	
Channel No. :	1	Frequency :	2412 MHz		Band :	DTS	
Frequency [MHz]	Measured Value [dBμv]	Duty Cycle Factor [dB]	ANT. POL [H/V]	Total [dBμv/m]	Limit [dBμv/m]	Margin [dB]	Measurement Type
2310 - 2390	56.32	0.00	H	56.32	73.98	17.66	PK
2310 - 2390	44.46	0.00	H	44.46	53.98	9.52	AV

Operation Mode :	802.11ax	Tone & RU Index :	SU			MCS index :	MCS0
Channel No. :	11	Frequency :	2462 MHz			Band :	DTS
Frequency [MHz]	Measured Value [dBμv]	Duty Cycle Factor [dB]	ANT. POL [H/V]	Total [dBμv/m]	Limit [dBμv/m]	Margin [dB]	Measurement Type
2483.5 - 2500	68.83	0.00	H	68.83	73.98	5.15	PK
2483.5 - 2500	48.26	0.67	H	48.93	53.98	5.05	AV

Operation Mode:	802.11ax_20	Tone & RU Index :	242T & 61			MCS index :	MCS0
Channel No.:	11	Frequency :	2462 MHz			Band :	DTS
Frequency [MHz]	Measured Value [dBμv]	Duty Cycle Factor [dB]	ANT. POL [H/V]	Total [dBμv/m]	Limit [dBμv/m]	Margin [dB]	Measurement Type
2483.5 - 2500	68.36	0.00	H	68.36	73.98	5.62	PK
2483.5 - 2500	48.23	0.66	H	48.89	53.98	5.09	AV

Operation Mode:	802.11ax_20	Tone & RU Index :	106T & 54			MCS index :	MCS0
Channel No.:	11	Frequency :	2462 MHz			Band :	DTS
Frequency [MHz]	Measured Value [dBμv]	Duty Cycle Factor [dB]	ANT. POL [H/V]	Total [dBμv/m]	Limit [dBμv/m]	Margin [dB]	Measurement Type
2483.5 - 2500	69.08	0.00	H	69.08	73.98	4.90	PK
2483.5 - 2500	47.89	0.32	H	48.20	53.98	5.78	AV

Operation Mode :	802.11ax_20	Tone & RU Index :	52T & 40			MCS index :	MCS0
Channel No. :	11	Frequency :	2462 MHz			Band :	DTS
Frequency [MHz]	Measured Value [dBμv]	Duty Cycle Factor [dB]	ANT. POL [H/V]	Total [dBμv/m]	Limit [dBμv/m]	Margin [dB]	Measurement Type
2483.5 - 2500	68.46	0.00	H	68.46	73.98	5.52	PK
2483.5 - 2500	47.67	0.16	H	47.84	53.98	6.14	AV

Operation Mode:	802.11ax_20	Tone & RU Index :	26T & 8			MCS index :	MCS0
Channel No. :	11	Frequency :	2462 MHz			Band :	DTS
Frequency [MHz]	Measured Value [dBμv]	Duty Cycle Factor [dB]	ANT. POL [H/V]	Total [dBμv/m]	Limit [dBμv/m]	Margin [dB]	Measurement Type
2483.5 - 2500	68.32	0.00	H	68.32	73.98	5.66	PK
2483.5 - 2500	47.35	0.00	H	47.35	53.98	6.63	AV

Operation Mode :	802.11ax	Tone & RU Index :	SU			MCS index :	MCS0
Channel No. :	12	Frequency :	2467 MHz			Band :	DTS
Frequency [MHz]	Measured Value [dBμv]	Duty Cycle Factor [dB]	ANT. POL [H/V]	Total [dBμv/m]	Limit [dBμv/m]	Margin [dB]	Measurement Type
2483.5 - 2500	63.78	0.00	H	63.78	73.98	10.20	PK
2483.5 - 2500	44.33	0.67	H	45.00	53.98	8.98	AV

Operation Mode:	802.11ax_20	Tone & RU Index :	242T & 61			MCS index :	MCS0
Channel No.:	12	Frequency :	2467 MHz			Band :	DTS
Frequency [MHz]	Measured Value [dBμv]	Duty Cycle Factor [dB]	ANT. POL [H/V]	Total [dBμv/m]	Limit [dBμv/m]	Margin [dB]	Measurement Type
2483.5 - 2500	63.04	0.00	H	63.04	73.98	10.94	PK
2483.5 - 2500	44.03	0.66	H	44.68	53.98	9.30	AV

Operation Mode:	802.11ax_20	Tone & RU Index :	106T & 54			MCS index :	MCS0
Channel No.:	12	Frequency :	2467 MHz			Band :	DTS
Frequency [MHz]	Measured Value [dBμv]	Duty Cycle Factor [dB]	ANT. POL [H/V]	Total [dBμv/m]	Limit [dBμv/m]	Margin [dB]	Measurement Type
2483.5 - 2500	63.16	0.00	H	63.16	73.98	10.82	PK
2483.5 - 2500	44.25	0.32	H	44.56	53.98	9.42	AV

Operation Mode :	802.11ax_20	Tone & RU Index :	52T & 40			MCS index :	MCS0
Channel No. :	12	Frequency :	2467 MHz			Band :	DTS
Frequency [MHz]	Measured Value [dBμv]	Duty Cycle Factor [dB]	ANT. POL [H/V]	Total [dBμv/m]	Limit [dBμv/m]	Margin [dB]	Measurement Type
2483.5 - 2500	62.95	0.00	H	62.95	73.98	11.03	PK
2483.5 - 2500	44.36	0.16	H	44.52	53.98	9.46	AV

Operation Mode:	802.11ax_20	Tone & RU Index :	26T & 0			MCS index :	MCS0
Channel No. :	12	Frequency :	2467 MHz			Band :	DTS
Frequency [MHz]	Measured Value [dBμv]	Duty Cycle Factor [dB]	ANT. POL [H/V]	Total [dBμv/m]	Limit [dBμv/m]	Margin [dB]	Measurement Type
2483.5 - 2500	62.62	0.00	H	62.62	73.98	11.36	PK
2483.5 - 2500	43.86	0.00	H	43.86	53.98	10.12	AV

Operation Mode:	802.11ax	Tone & RU Index :		SU		MCS index :	MCS0
Channel No.:	13	Frequency:		2472 MHz		Band :	DTS
Frequency [MHz]	Measured Value [dBμv]	Duty Cycle Factor [dB]	ANT. POL [H/V]	Total [dBμv/m]	Limit [dBμv/m]	Margin [dB]	Measurement Type
2483.5 - 2500	70.47	0.00	H	70.47	73.98	3.51	PK
2483.5 - 2500	48.08		H	48.08	53.98	5.90	AV

Operation Mode:	802.11ax_20	Tone & RU Index :	242T & 61			MCS index :	MCS0
Channel No.:	13	Frequency :	2472 MHz			Band :	DTS
Frequency [MHz]	Measured Value [dBμv]	Duty Cycle Factor [dB]	ANT. POL [H/V]	Total [dBμv/m]	Limit [dBμv/m]	Margin [dB]	Measurement Type
2483.5 - 2500	68.74	0.00	H	68.74	73.98	5.24	PK
2483.5 - 2500	47.40	0.66	H	48.06	53.98	5.92	AV

Operation Mode:	802.11ax_20	Tone & RU Index :	106T & 54			MCS index :	MCS0
Channel No.:	13	Frequency :	2472 MHz			Band :	DTS
Frequency [MHz]	Measured Value [dBμv]	Duty Cycle Factor [dB]	ANT. POL [H/V]	Total [dBμv/m]	Limit [dBμv/m]	Margin [dB]	Measurement Type
#2483.5 - 2500	60.09	0.00	H	60.09	73.98	13.89	PK
2483.5 - 2500	50.17	0.32	H	50.49	53.98	3.49	AV

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

Operation Mode :	802.11ax_20	Tone & RU Index :	52T & 40			MCS index :	MCS0
Channel No. :	13	Frequency :	2472 MHz			Band :	DTS
Frequency [MHz]	Measured Value [dBμv]	Duty Cycle Factor [dB]	ANT. POL [H/V]	Total [dBμv/m]	Limit [dBμv/m]	Margin [dB]	Measurement Type
#2483.5 - 2500	60.92	0.00	H	60.92	73.98	13.06	PK
2483.5 - 2500	50.81	0.16	H	50.98	53.98	3.00	AV

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

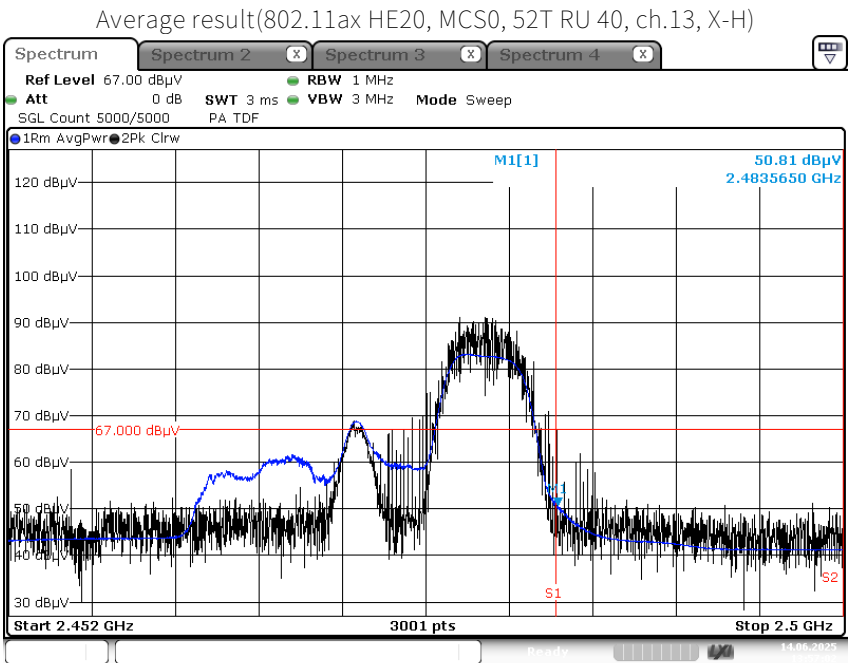
Operation Mode:	802.11ax_20	Tone & RU Index :	26T & 8			MCS index :	MCS0
Channel No.:	13	Frequency :	2472 MHz			Band :	DTS
Frequency [MHz]	Measured Value [dBμv]	Duty Cycle Factor [dB]	ANT. POL [H/V]	Total [dBμv/m]	Limit [dBμv/m]	Margin [dB]	Measurement Type
#2483.5 - 2500	63.34	0.00	H	63.34	73.98	10.64	PK
#2483.5 - 2500	49.46	0.00	H	49.46	53.98	4.52	AV

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

Test Plots

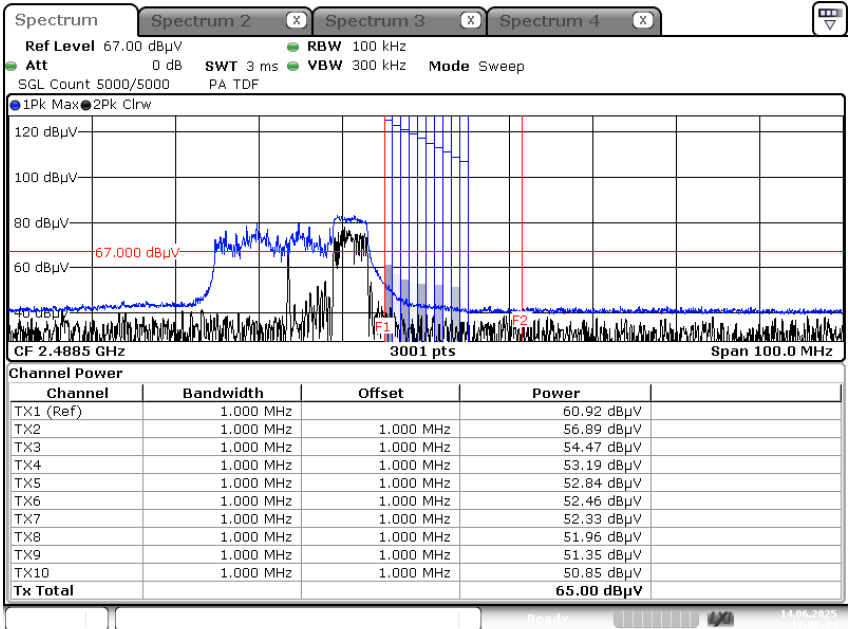
[MIMO_SDM(Ant.1+Ant.2)]

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



Date: 14.JUN.2025 13:57:02

Integration method Used_Peak result(802.11ax HE20, MCS0, 52T RU 40, ch.13, X-H)



Date: 14.JUN.2025 13:56:24

10. LIST OF TEST EQUIPMENT

Conducted Test

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
LISN	ENV216	Rohde & Schwarz	102245	07/17/2025	Annual
EMI Test Receiver	ESR	Rohde & Schwarz	101910	07/02/2025	Annual
Temperature Chamber	SU-642	ESPEC	93008124	02/11/2026	Annual
Signal Analyzer	N9030A	Keysight	MY55410508	08/23/2025	Annual
Signal Analyzer	N9030B	Keysight	MY56320554	02/03/2026	Annual
Power Meter	N1911A	Agilent	MY45100523	02/21/2026	Annual
Power Sensor	N1921A	Agilent	MY57820067	02/04/2026	Annual
Directional Coupler	87300B	Agilent	3116A03621	10/21/2025	Annual
Power Splitter	11667B	Hewlett Packard	10545	01/23/2026	Annual
DC Power Supply	E3632A	Agilent	MY50360067	02/11/2026	Annual
Attenuator(10 dB)(DC-26.5 GHz)	8493C-010	Agilent	08285	05/19/2026	Annual
Attenuator(20 dB)	18N-20dB	Rohde & Schwarz	8	02/18/2026	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
Automation Software	FCC WLAN Conducted	HCT CO., LTD	-	-	-

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 & Turn Table)	CO3000	Innco system	CO3000/ 15421/57580623/G	N/A	N/A
Antenna Position Tower	MA4640	Innco system	9320422	04/03/2026	Biennial
Turn Table	N/A	Innco system	5930623	N/A	N/A
Loop Antenna	FMZB 1513	Schwarzbeck	1513-175	01/06/2027	Biennial
Hybrid Antenna	VULB 9168	Schwarzbeck	9168-1135	08/19/2026	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	9120D-1151	07/14/2025	Biennial
Horn Antenna (15 GHz ~ 40 GHz)	BBHA9170	Schwarzbeck	BBHA9170124	03/23/2027	Biennial
Amp & Filter Bank Switch Controller	FBSM-01B	T&M system	TM2009001	N/A	N/A
Band Reject Filter	WRCJV2400/2483.5- 2370/2520-60/12SS	Wainwright Instruments	2	12/26/2025	Annual
Band Reject Filter	WRCJV12-4900-5100-5900- 6100-50SS	Wainwright Instruments	5	05/27/2026	Annual
Band Reject Filter	WRCJV12-4900-5100-5900- 6100-50SS	Wainwright Instruments	6	05/27/2026	Annual
Band Reject Filter	WRCJV5100/5850-40/50- 8EEK	Wainwright Instruments	1	01/09/2026	Annual
RF Switching System	FMSR-05B (HPF(3~18GHz) + LNA1(1~18GHz))	T&M system	S5L1	03/11/2026	Annual
RF Switching System	FMSR -05B (ATT(10dB) + LNA1(1~18GHz))	T&M system	S5L2	03/11/2026	Annual
RF Switching System	FMSR -05B (ATT(3dB) + LNA1(1~18GHz))	T&M system	S5L3	03/11/2026	Annual
RF Switching System	FMSR -05B (LNA1(1~18GHz))	T&M system	S5L4	03/11/2026	Annual
RF Switching System	FMSR -05B (HPF(7~18GHz) + LNA2(6~18GHz))	T&M system	S5L5	03/11/2026	Annual
RF Switching System	FMSR -05B (Thru(30MHz ~ 18GHz))	T&M system	S5L6	03/11/2026	Annual
Power Amplifier	CBL18265035	CERNEX	22966	11/07/2025	Annual
Power Amplifier	CBL26405040	CERNEX	25956	02/19/2026	Annual
Bluetooth Tester	TC-3000C	TESCOM	3000C000175	03/12/2026	Annual
Spectrum Analyzer	FSV40 (9 kHz ~ 40 GHz)	Rohde & Schwarz	101510	09/24/2025	Annual
Automation Software	FCC WLAN Radiated	HCT CO., LTD	-	-	-

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-2506-FC098-P