FCC RADIO TEST REPORT

FCC ID	:	**2A3G3-WMU721X**
Equipment	:	**Wi-Fi 802.11ax 2x2 Tri-band Module**
Brand Name	:	**Emwicon**
Model Name	:	**WMU721X (X=2,3,4,5,6,7)**
Applicant	:	**Emwicon Corporation** **7F.-5, No. 258, Liancheng Rd., Zhonghe Dist., New Taipei City 235, Taiwan (R.O.C.)**
Manufacturer	:	**Emwicon Corporation** **7F.-5, No. 258, Liancheng Rd., Zhonghe Dist., New Taipei City 235, Taiwan (R.O.C.)**
Standard	:	**FCC Part 15 Subpart C §15.247**

The product was received on May 16, 2024 and testing was performed from Jun. 05, 2024 to Aug. 26, 2024. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval from Sporton International Inc. Wensan Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory
No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issue Date
FR450901C	01	Initial issue of report	Oct. 15, 2024

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.247(a)(2)	6dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Pass	-
3.2	15.247(b)	Power Output Measurement	Pass	-
3.3	15.247(e)	Power Spectral Density	Pass	-
3.4	15.247(d)	Conducted Band Edges	Pass	-
		Conducted Spurious Emission	Pass	-
3.5	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	Pass	0.10 dB under the limit at 2389.18 MHz
3.6	15.207	AC Conducted Emission	Pass	15.47 dB under the limit at 0.15 MHz
3.7	15.203	Antenna Requirement	Pass	-

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the section “Measurement Uncertainty”.

Disclaimer:

1. The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.
2. The purpose of different model name is for connector and interface.

Reviewed by: Keven Cheng

Report Producer: Rebecca Wu

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
General Specs	Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n/ax, Wi-Fi 5GHz 802.11a/n/ac/ax, and Wi-Fi 6GHz 802.11ax.
Sample 1	WMU7212
Sample 2	WMU7213
Sample 3	WMU7214-U
Sample 4	WMU7214-P
Sample 5	WMU7215-U
Sample 6	WMU7215-P
Sample 7	WMU7216-U
Sample 8	WMU7216-P
Sample 9	WMU7217-U
Sample 10	WMU7217-P
Antenna Type	**Dipole Antenna:** <Model: RFA-27-H60-B-C1035-1> <Model: RFA-27-H60-B-C1035-4> <Model: RFA-27-C2-B-C1035-1> <Model: RFA-27-C2-B-C1035-4> <Model: ADT7352> <Model: RFA-27-C55-U-B70-1> <Model: RFA-27-C55-U-B70-4> <Model: RFA-27-AP152R-C1035> <Model: RFA-27-AP152R-4BC1035> <Model: RFA-27-JP326-C1035> <Model: RFA-27-JP326-4BC1035> **PCB Antenna:** <Model: ATB7214>

Antenna information		
2400 MHz ~ 2483.5 MHz	Peak Gain (dBi)	<Model: RFA-27-H60-B-C1035-1>: 1.34 <Model: RFA-27-H60-B-C1035-4>: 1.34 <Model: RFA-27-C2-B-C1035-1>: 1.91 <Model: RFA-27-C2-B-C1035-4>: 1.91 <Model: RFA-27-C55-U-B70-1>: 1.84 <Model: RFA-27-C55-U-B70-4>: 1.84 <Model: RFA-27-JP326-C1035>: 2.79 <Model: RFA-27-JP326-4BC1035>: 2.79 <Model: RFA-27-AP152R-C1035>: 2.31 <Model: RFA-27-AP152R-4BC1035>: 2.31 <Model: ADT7352>: 2.66 <Model: ATB7214>: 2.57

Remark:

1. The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.
2. The Sample1~10 has identical PCB layout only path loss difference & the sample3~10 have same trace design only Connector is difference, above is declared by manufacturer.

1.1.1 Antenna Directional Gain

<For CDD Mode>

Follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)ii)

Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows:

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$.

G_{ANT} is set equal to the gain of the antenna having the highest gain.

For PSD measurements, the directional gain calculation.

Array Gain = 10 log(NANT/NSS) dB.

The directional gain “DG” is calculated as following table.

	Ant 0 (dBi)	Ant 1 (dBi)	DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
2.4GHz	2.79	2.79	2.79	5.80	0.00	0.00

Calculation example:

If a device has two antenna, G_{ANT0}= 2.79dBi; G_{ANT1}=2.79dBi

Directional gain of power measurement = max(2.79, 2.79) + 0 = 2.79 dBi

Directional gain of PSD derived from formula which is

10 x log { { [10^ (2.79 dBi / 20) + 10^ (2.79 dBi / 20)] ^ 2 } / 2 }

= 5.80dBi

Power limit reduction = Composite gain – 6dBi, (min = 0)

PSD limit reduction = Composite gain + PSD Array gain – 6dBi, (min = 0)

1.2 Modification of EUT

No modifications made to the EUT during the testing.

1.3 Testing Location

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	**Sporton Site No.**
	TH05-HY, CO07-HY, 03CH13-HY

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC designation No.: TW3786

1.4 Applicable Standards

According to the specifications declared by the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.247
- FCC KDB Publication No. 558074 D01 15.247 Meas Guidance v05r02
- FCC KDB 414788 D01 Radiated Test Site v01r01.
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ANSI C63.10-2013

Remark:

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. The TAF code is not including all the FCC KDB listed without accreditation.
3. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz)radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and only the worst case emissions were reported in this report.

b. AC power line Conducted Emission was tested under maximum output power.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437		

2.2 Test Mode

The 242-tone RU is covered by 20MHz channel, 484-tone RU is covered by 40MHz channel.

The power for 802.11n mode is smaller than 802.11ax mode, so all other conducted and radiated test is covered by 802.11ax mode.

The final test modes include the worst data rates for each modulation shown in the table below.

Single Antenna

Modulation	Data Rate
802.11b	1 Mbps
802.11g	6 Mbps

MIMO Antenna

Modulation	Data Rate
802.11n HT20 (Covered by HE20)	MCS0
802.11n HT40 (Covered by HE40)	MCS0
802.11ax HE20	MCS0
802.11ax HE40	MCS0

Test Cases	
AC Conducted Emission	Mode 1 :WLAN (2.4GHz) Link + Bluetooth Link + Adapter for Sample 1

Remark:
1. For Radiated Test Cases, the tests were performed with Sample 1, 2, 7, and 8.
2. For Conducted test items are verified Sample 1~10 and the worst case is Sample 7 the report only performed Sample 7 test results.
3. For Radiated spurious emissions, tests were performed using high-gain antennas in dipole &PCB antenna.

<Sample 1>

Ch. #	2400-2483.5 MHz
	802.11b
Low	01
Middle	-
High	-

<Sample 2>

Ch. #	2400-2483.5 MHz
	802.11b
Low	01
Middle	-
High	-

<Sample 7>

<Ant. 0>

Ch. #	2400-2483.5 MHz	
	802.11b	802.11g
Low	01	01
		02
		03
		04
Middle	06	06
High	11	10
		11

<Ant. 1>

Ch. #	2400-2483.5 MHz	
	802.11b	802.11g
Low	01	01
	02	02
		03
		04
		05
Middle	06	06
High	11	10
		11

MIMO <Ant. 0+1>

Ch. #	2400-2483.5 MHz		
	802.11n HT40	802.11ax HE20	802.11ax HE40
Low	-	01	03
		02	
		03	
		04	
Middle	-	06	06
High	09	10	09
		11	

<Sample 8>

<Ant. 0>

Ch. #	2400-2483.5 MHz	
	802.11b	802.11g
Low	01	01
		02
Middle	06	06
High	11	09
		10
		11

<Ant. 1>

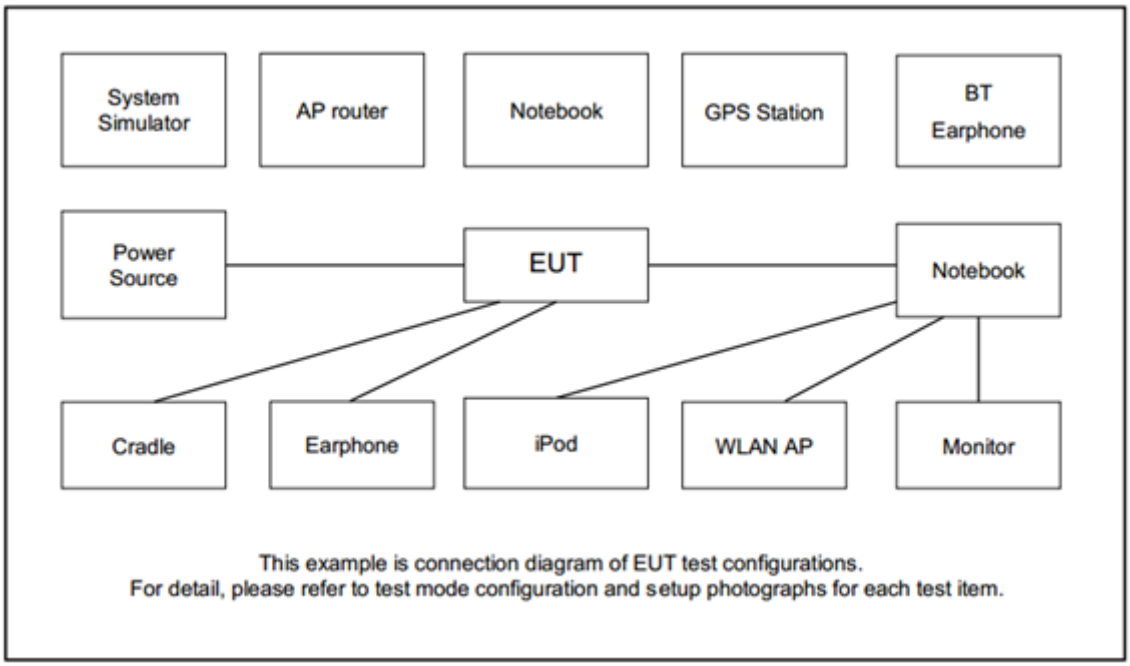
Ch. #	2400-2483.5 MHz	
	802.11b	802.11g
Low	01	01
		02
		03
Middle	06	06
High	11	09
		10
		11

MIMO <Ant. 0+1>

Ch. #	2400-2483.5 MHz		
	802.11n HT40	802.11ax HE20	802.11ax HE40
Low	-	01	03
		02	
Middle		03	04
		04	05
High	-	06	06
	09	08	07
		09	
		10	08
		11	09

Remark: For radiation spurious emission, the modulation and the data rate picked for testing are determined by the Max. RF conducted power.

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
2.	WLAN AP	Netgear	RAXE500	PY320300508	N/A	Unshielded, 1.8 m
3.	Notebook	DELL	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	Notebook	Acer	N18Q13	PD9AX201NG	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	Adapter	Sunward	AD36AM0506OQ	FCC DoC	N/A	Unshielded, 1.2m
6.	Fixture	AAEON	UPS-APLC2-A20-0432	N/A	N/A	N/A

2.5 EUT Operation Test Setup

The RF test items, utility “RTL8852C_USB_MP_Package_ALPHA_v.2.0.30” was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example:
The spectrum analyzer offset is derived from RF cable loss and attenuator factor.
Offset = RF cable loss + attenuator factor.
Following shows an offset computation example with cable loss 4.2 dB and 10 dB attenuator.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).
= 4.2 + 10 = 14.2 (dB)

3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB and 99% Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

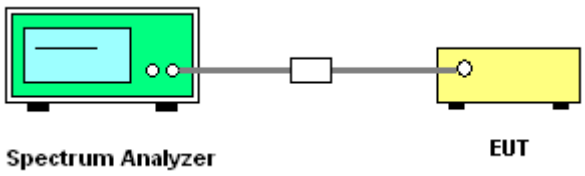
3.1.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.1.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 6.9.3 (OBW) and 11.8.1 (6dB BW).
2. The RF output of EUT is connected to the spectrum analyzer by RF cable and attenuator. The path loss is compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1-5% of the emission bandwidth and set the Video bandwidth (VBW) ≥ 3 * RBW.
6. Measure and record the results in the test report.

3.1.4 Test Setup



3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Please refer to Appendix A.

3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5 MHz, the limit for output power is 30 dBm. If transmitting antenna with directional gain greater than 6 dBi is used, the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

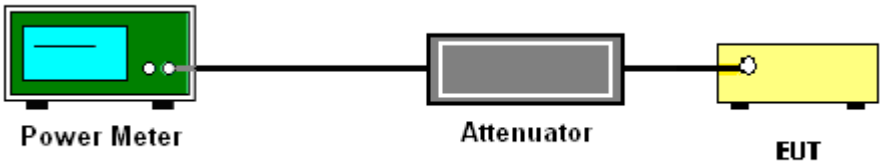
3.2.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.2.3 Test Procedures

1. For Average Power, the testing follows ANSI C63.10 Section 11.9.2.3.2 Method AVGPM-G
2. The RF output of EUT is connected to the power meter by RF cable and attenuator. The path loss is compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to transmit continuously.
4. Measure the conducted output power and record the results in the test report.
5. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

3.2.4 Test Setup



3.2.5 Test Result of Average Output Power

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8 dBm in any 3 kHz band at any time interval of continuous transmission.

3.3.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

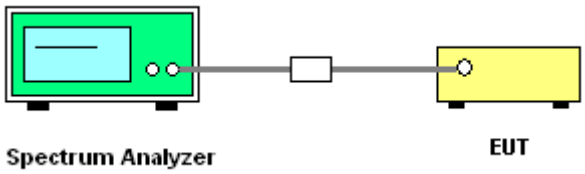
3.3.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 11.10.2 Method PKPSD.
2. The RF output of EUT is connected to the spectrum analyzer by RF cable and attenuator. The path loss is compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.
7. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

   Method (c): Measure and add 10 log(N_{ANT}) dB.

   With this technique, spectrum measurements are performed at each output of the device, but rather than summing the spectra or the spectral peaks across the outputs, the quantity 10 log(N_{ANT}) dB is added to each spectrum value before comparing to the emission limit. The addition of 10 log(N_{ANT}) dB serves to apportion the emission limit among the N_{ANT} outputs so that each output is permitted to contribute no more than $1/N_{ANT}$ th of the PSD limit .

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement.

3.4.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.4.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 11.11.3 Emission level measurement.
2. The RF output of EUT is connected to the spectrum analyzer by RF cable and attenuator. The path loss is compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.4.4 Test Setup

3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Please refer to Appendix A.

3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device is measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.5.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

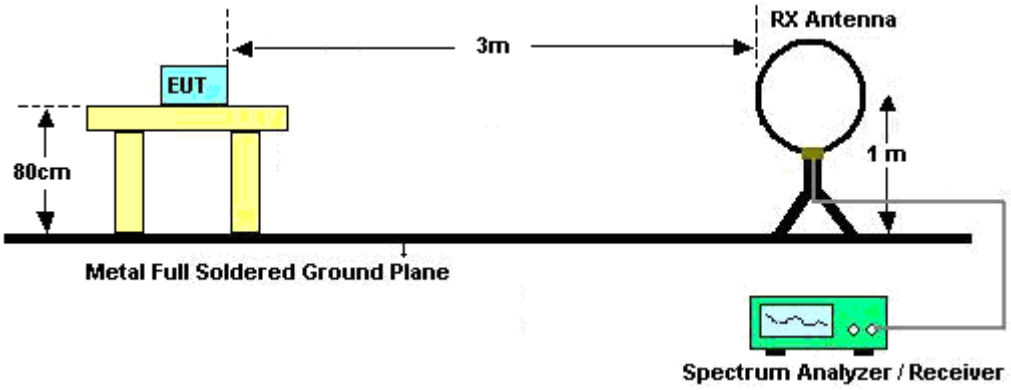
3.5.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 11.12.1 Radiated emission measurements.
2. The EUT is arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT is placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
4. The EUT is set 3 meters away from the receiving antenna, which is mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit line, the position is marked as “-“.

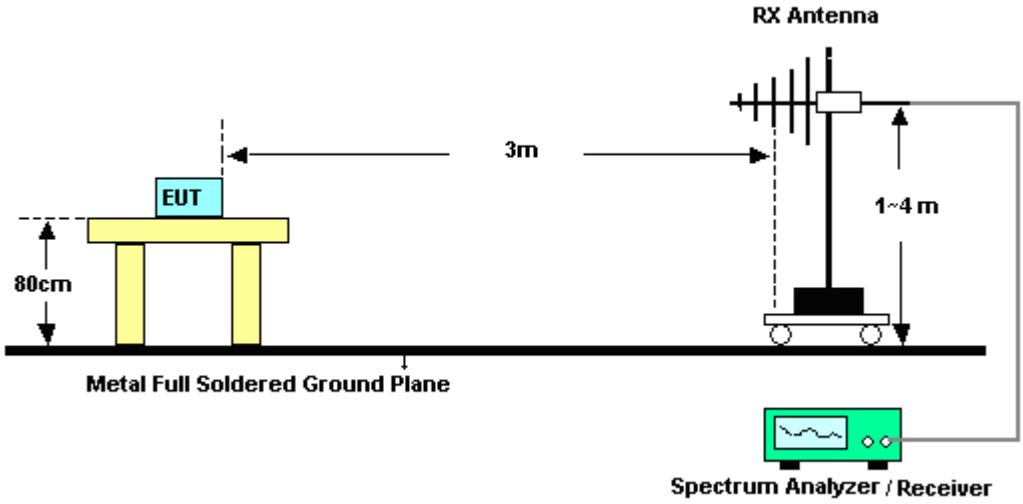
7. Radiated testing above 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading for scanning all frequencies. When there is no suspected emission found and the harmonic emission level is with at least 6 dB margin against average limit line, the position is marked as "-".
8. Use the following spectrum analyzer settings:
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Set RBW = 100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
   (3) Set RBW = 1 MHz, VBW= 3 MHz for f ≥ 1 GHz for peak measurement.
   For average measurement:
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.5.4 Test Setup

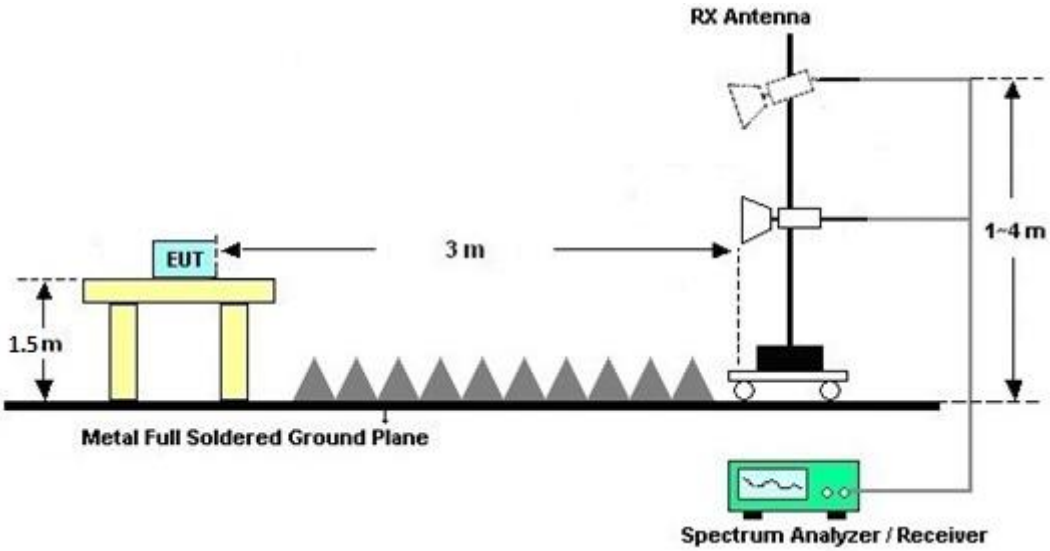
For radiated emissions below 30MHz



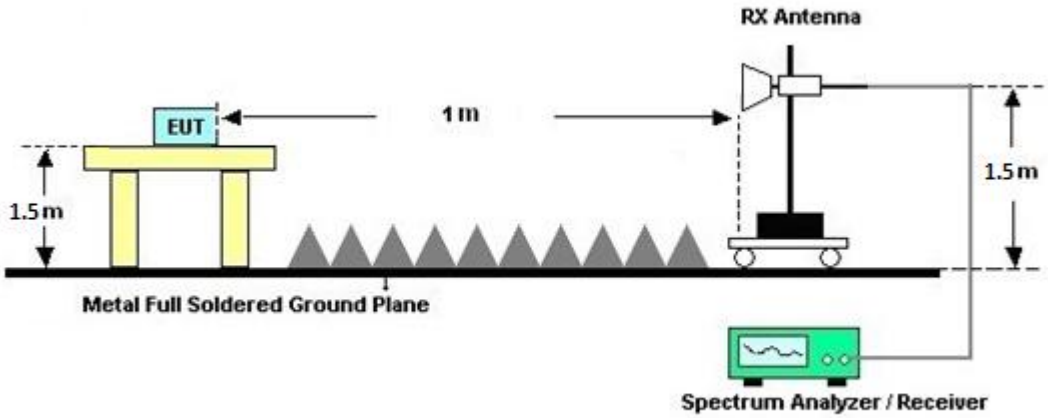
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



3.5.5 Test Results of Radiated Spurious Emissions (9kHz ~ 30MHz)

The low frequency, which starts from 9 kHz to 30 MHz, is pre-scanned and the result which is 20 dB lower than the limit line is not reported.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result comes out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C.

3.5.7 Duty Cycle

Please refer to Appendix D.

3.5.8 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix C.

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment 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.

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

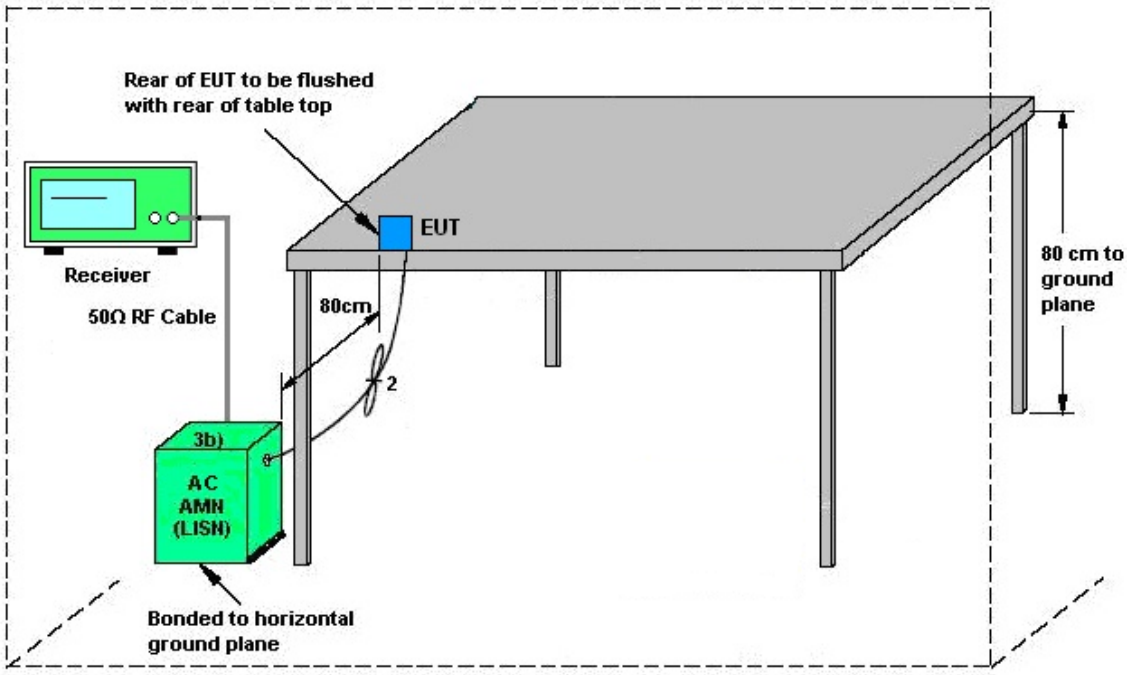
3.6.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.6.3 Test Procedures

1. The EUT is placed 0.4 meter away from the conducting wall of the shielding room, and is kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN shall be used.
6. Both Line and Neutral shall be tested in order to find out the maximum conducted emission.
7. The frequency range from 150 kHz to 30 MHz is scanned.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF bandwidth = 9kHz) with Maximum Hold Mode.

3.6.4 Test Setup



AMN = Artificial mains network (LISN)
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabilization network

3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

3.7 Antenna Requirements

3.7.1 Standard Applicable

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §§ 15.211, 15.213, 15.217, 15.219, 15.221, or § 15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

3.7.2 Antenna Anti-Replacement Construction

Antenna permanently attached.

4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1326	1GHz~18GHz	Aug. 17, 2023	Jun. 28, 2024~ Aug. 15, 2024	Aug. 16, 2024	Radiation (03CH13-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1212	1GHz~18GHz	Mar. 21, 2024	Aug. 16, 2024~ Aug. 26, 2024	Mar. 20, 2025	Radiation (03CH13-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA9170	00993	18GHz-40GHz	Nov. 24, 2023	Jun. 28, 2024~ Aug. 26, 2024	Nov. 23, 2024	Radiation (03CH13-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	40103 & 07	30MHz~1GHz	Apr. 12, 2024	Jun. 28, 2024~ Aug. 26, 2024	Apr. 11, 2025	Radiation (03CH13-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Sep. 12, 2023	Jun. 28, 2024~ Aug. 26, 2024	Sep. 11, 2024	Radiation (03CH13-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590074	1GHz~18GHz	May 15, 2024	Jun. 28, 2024~ Aug. 26, 2024	May 14, 2025	Radiation (03CH13-HY)
Preamplifier	EM Electronics	EM01G18G	060803	1GHz~18GHz	Jan. 09, 2024	Jun. 28, 2024~ Aug. 26, 2024	Jan. 08, 2025	Radiation (03CH13-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	May 27, 2024	Jun. 28, 2024~ Aug. 26, 2024	May 26, 2025	Radiation (03CH13-HY)
Amplifier	SONOMA	310N	187282	9kHz~1GHz	Dec. 13, 2023	Jun. 28, 2024~ Aug. 26, 2024	Dec. 12, 2024	Radiation (03CH13-HY)
EMI Test Receiver	Agilent	N9038A(MXE)	MY53290045	20Hz~8.4GHz	Apr. 17, 2024	Aug. 16, 2024~ Aug. 26, 2024	Apr. 16, 2025	Radiation (03CH13-HY)
Spectrum Analyzer	Keysight	N9010A	MY55370526	10Hz~44GHz	Jan. 18, 2024	Jun. 28, 2024~ Aug. 26, 2024	Jan. 17, 2025	Radiation (03CH13-HY)
Filter	Wainwright	WHKX12-2700 -3000-18000-6 0SS	SN2	3GHz High Pass Filter	Jul. 10, 2023	Jun. 28, 2024~ Jul. 08, 2024	Jul. 09, 2024	Radiation (03CH13-HY)
Filter	Wainwright	WHKX12-2700 -3000-18000-6 0SS	SN2	3GHz High Pass Filter	Jul. 09, 2024	Jul. 09, 2024~ Aug. 26, 2024	Jul. 08, 2025	Radiation (03CH13-HY)
Filter	Wainwright	WLK4-1000-15 30-8000-40SS	SN12	1.53GHz Low Pass Filter	Sep. 12, 2023	Jun. 28, 2024~ Aug. 26, 2024	Sep. 11, 2024	Radiation (03CH13-HY)
Filter	Wainwright	WHKX8-5872. 5-6750-18000- 40ST	SN5	6.75GHz High Pass Filter	Mar. 08, 2024	Jun. 28, 2024~ Aug. 26, 2024	Mar. 07, 2025	Radiation (03CH13-HY)
Filter	Wainwright	WHKX6-7268- 9200-26500-40 CD	SN4	9GHz High Pass Filter	May 22, 2024	Jun. 28, 2024~ Aug. 26, 2024	May 21, 2025	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0030/126E	30MHz~18GHz	Feb. 07, 2024	Jun. 28, 2024~ Aug. 26, 2024	Feb. 06, 2025	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	804793/4	30MHz~18GHz	Feb. 07, 2024	Jun. 28, 2024~ Aug. 26, 2024	Feb. 06, 2025	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24961/4	30MHz~18GHz	Feb. 07, 2024	Jun. 28, 2024~ Aug. 26, 2024	Feb. 06, 2025	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30MHz~40GHz	Dec. 18, 2023	Jun. 28, 2024~ Aug. 26, 2024	Dec. 17, 2024	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4 MY24971/4	9kHz~30MHz	Feb. 21, 2024	Jun. 28, 2024~ Aug. 26, 2024	Feb. 20, 2025	Radiation (03CH13-HY)
Hygrometer	TECPEL	DTM-303A	TP215159	N/A	Sep. 13, 2023	Jun. 28, 2024~ Aug. 26, 2024	Sep. 12, 2024	Radiation (03CH13-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Jun. 28, 2024~ Aug. 26, 2024	N/A	Radiation (03CH13-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Jun. 28, 2024~ Aug. 26, 2024	N/A	Radiation (03CH13-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Jun. 28, 2024~ Aug. 26, 2024	N/A	Radiation (03CH13-HY)
Software	Audix	N/A	RK-002392	N/A	N/A	Jun. 28, 2024~ Aug. 26, 2024	N/A	Radiation (03CH13-HY)

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	TECPEL	DTM-303A	TP201996	N/A	Nov. 07, 2023	Jun. 05, 2024~ Aug. 23, 2024	Nov. 06, 2024	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	15I00041SNO 10 (NO:248)	10MHz~6GHz	Jan. 10, 2024	Jun. 05, 2024~ Aug. 23, 2024	Jan. 09, 2025	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101564	10Hz~40GHz	Sep. 12, 2023	Jun. 05, 2024~ Aug. 23, 2024	Sep. 11, 2024	Conducted (TH05-HY)
Switch Control Mainframe	EM Electronics	ETF-058	EC1208382 (BOX1)	N/A	Jan. 02, 2024	Jun. 05, 2024~ Aug. 23, 2024	Jan. 01, 2025	Conducted (TH05-HY)
Software	Sporton	BTWIFI_Final_ version:1.0(20 24-04-26)	N/A	Conducted Items	N/A	Jun. 05, 2024~ Aug. 23, 2024	N/A	Conducted (TH05-HY)
AC Power Source	ACPOWER	AFC-11003G	F317040033	N/A	N/A	Jul. 10, 2024	N/A	Conduction (CO07-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Jul. 10, 2024	N/A	Conduction (CO07-HY)
Pulse Limiter	SCHWARZBE CK	VTSD 9561-F N	9561-F N00373	9kHz-200MHz	Oct. 20, 2023	Jul. 10, 2024	Oct. 19, 2024	Conduction (CO07-HY)
RF Cable	HUBER + SUHNER	RG 214/U	1358175	9kHz~30MHz	Mar. 14, 2024	Jul. 10, 2024	Mar. 13, 2025	Conduction (CO07-HY)
Two-Line V-Network	TESEQ	NNB 51	45051	N/A	Mar. 10, 2024	Jul. 10, 2024	Mar. 09, 2025	Conduction (CO07-HY)
Four-Line V-Network	TESEQ	NNB 52	36122	N/A	Mar. 07, 2024	Jul. 10, 2024	Mar. 06, 2025	Conduction (CO07-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102317	9kHz~3.6GHz	Sep. 20, 2023	Jul. 10, 2024	Sep. 19, 2024	Conduction (CO07-HY)

5 Measurement Uncertainty

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.44 dB**

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**6.50 dB**

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 6000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.20 dB**

Uncertainty of Radiated Emission Measurement (6000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.60 dB**

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.30 dB**

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Mina Liu	Temperature:	21~25	°C
Test Date:	2024/06/05 ~ 2024/08/23	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band Single Antenna										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Occupied BW (MHz)		6dB BW (MHz)		6dB BW Limit (MHz)	Pass/Fail
					Ant0	Ant1	Ant0	Ant1		
11b	1Mbps	1	1	2412	14.99	14.99	10.10	11.05	0.50	Pass
11b	1Mbps	1	6	2437	14.94	14.99	10.10	11.07	0.50	Pass
11b	1Mbps	1	11	2462	14.99	14.94	11.07	10.09	0.50	Pass
11g	6Mbps	1	1	2412	17.03	17.03	16.32	16.33	0.50	Pass
11g	6Mbps	1	6	2437	17.58	17.43	16.32	16.32	0.50	Pass
11g	6Mbps	1	11	2462	17.03	17.03	16.32	16.33	0.50	Pass

TEST RESULTS DATA
Average Output Power

2.4GHz Band Single Antenna																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant0	Ant1	SUM	Ant0	Ant1	Ant0	Ant1	Ant0	Ant1	Ant0	Ant1	
11b	1Mbps	1	1	2412	19.90	19.00		30.00	30.00	2.79	2.79	22.69	21.79	36.00	36.00	Pass
11b	1Mbps	1	2	2417	-	19.30		-	30.00	2.79	2.79	-	22.09	-	36.00	Pass
11b	1Mbps	1	6	2437	19.80	21.70		30.00	30.00	2.79	2.79	22.59	24.49	36.00	36.00	Pass
11b	1Mbps	1	11	2462	19.90	19.50		30.00	30.00	2.79	2.79	22.69	22.29	36.00	36.00	Pass
11g	6Mbps	1	1	2412	15.50	13.60		30.00	30.00	2.79	2.79	18.29	16.39	36.00	36.00	Pass
11g	6Mbps	1	2	2417	16.50	15.80		30.00	30.00	2.79	2.79	19.29	18.59	36.00	36.00	Pass
11g	6Mbps	1	3	2422	18.20	17.30		30.00	30.00	2.79	2.79	20.99	20.09	36.00	36.00	Pass
11g	6Mbps	1	4	2427	20.10	18.40		30.00	30.00	2.79	2.79	22.89	21.19	36.00	36.00	Pass
11g	6Mbps	1	5	2432	-	19.50		-	30.00	2.79	2.79	-	22.29	-	36.00	Pass
11g	6Mbps	1	6	2437	21.90	21.50		30.00	30.00	2.79	2.79	24.69	24.29	36.00	36.00	Pass
11g	6Mbps	1	9	2452	20.60	19.30		30.00	30.00	2.79	2.79	23.39	22.09	36.00	36.00	Pass
11g	6Mbps	1	10	2457	19.00	17.50		30.00	30.00	2.79	2.79	21.79	20.29	36.00	36.00	Pass
11g	6Mbps	1	11	2462	16.30	16.10		30.00	30.00	2.79	2.79	19.09	18.89	36.00	36.00	Pass

2.4GHz Band MIMO																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant0	Ant1	SUM	Ant0	Ant1	Ant0	Ant1	Ant0	Ant1	Ant0	Ant1	
HT20	MCS0	2	1	2412	13.70	11.40	15.71	30.00		2.79		18.50		36.00		Pass
HT20	MCS0	2	2	2417	15.30	13.00	17.31	30.00		2.79		20.10		36.00		Pass
HT20	MCS0	2	3	2422	16.60	14.20	18.57	30.00		2.79		21.36		36.00		Pass
HT20	MCS0	2	4	2427	17.50	15.20	19.51	30.00		2.79		22.30		36.00		Pass
HT20	MCS0	2	6	2437	19.90	16.40	21.50	30.00		2.79		24.29		36.00		Pass
HT20	MCS0	2	8	2447	18.90	16.80	20.99	30.00		2.79		23.78		36.00		Pass
HT20	MCS0	2	9	2452	17.40	15.70	19.64	30.00		2.79		22.43		36.00		Pass
HT20	MCS0	2	10	2457	15.10	13.40	17.34	30.00		2.79		20.13		36.00		Pass
HT20	MCS0	2	11	2462	13.30	11.30	15.42	30.00		2.79		18.21		36.00		Pass
HT40	MCS0	2	3	2422	12.90	10.30	14.80	30.00		2.79		17.59		36.00		Pass
HT40	MCS0	2	4	2427	12.30	9.90	14.27	30.00		2.79		17.06		36.00		Pass
HT40	MCS0	2	5	2432	13.80	11.40	15.77	30.00		2.79		18.56		36.00		Pass
HT40	MCS0	2	6	2437	13.90	11.00	15.70	30.00		2.79		18.49		36.00		Pass
HT40	MCS0	2	8	2447	10.80	8.90	12.96	30.00		2.79		15.75		36.00		Pass
HT40	MCS0	2	9	2452	10.70	8.60	12.79	30.00		2.79		15.58		36.00		Pass

Note: Measured power (dBm) has offset with cable loss.

TEST RESULTS DATA
Peak Power Spectral Density

2.4GHz Band Single Antenna												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak PSD (dBm/3kHz)			DG (dBi)		Peak PSD Limit (dBm/3kHz)		Pass/Fail
					Ant0	Ant1	Worse + 3.01	Ant0	Ant1	Ant0	Ant1	
11b	1Mbps	1	1	2412	-4.78	-5.62		2.79	2.79	8.00	8.00	Pass
11b	1Mbps	1	2	2417		-5.49		2.79	2.79	8.00	8.00	Pass
11b	1Mbps	1	6	2437	-4.79	-3.36		2.79	2.79	8.00	8.00	Pass
11b	1Mbps	1	11	2462	-4.89	-5.44		2.79	2.79	8.00	8.00	Pass
11g	6Mbps	1	1	2412	-11.90	-14.08		2.79	2.79	8.00	8.00	Pass
11g	6Mbps	1	2	2417	-10.82	-11.86		2.79	2.79	8.00	8.00	Pass
11g	6Mbps	1	3	2422	-9.61	-10.43		2.79	2.79	8.00	8.00	Pass
11g	6Mbps	1	4	2427	-8.53	-9.26		2.79	2.79	8.00	8.00	Pass
11g	6Mbps	1	5	2432		-8.18		2.79	2.79	8.00	8.00	Pass
11g	6Mbps	1	6	2437	-5.88	-6.88		2.79	2.79	8.00	8.00	Pass
11g	6Mbps	1	9	2452	-7.94	-8.63		2.79	2.79	8.00	8.00	Pass
11g	6Mbps	1	10	2457	-8.93	-10.23		2.79	2.79	8.00	8.00	Pass
11g	6Mbps	1	11	2462	-11.49	-11.75		2.79	2.79	8.00	8.00	Pass

Measured power density (dBm) has offset with cable loss.

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band MIMO											
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	99% Occupied BW (MHz)		6dB BW (MHz)		6dB BW Limit (MHz)	Pass/Fail
						Ant0	Ant1	Ant0	Ant1		
HE20	MCS0	2	1	2412	Full	19.13	19.18	18.98	18.97	0.50	Pass
HE20	MCS0	2	6	2437	Full	19.18	19.18	19.03	19.02	0.50	Pass
HE20	MCS0	2	11	2462	Full	18.98	18.98	18.70	18.70	0.50	Pass
HE40	MCS0	2	3	2422	Full	38.66	38.66	38.06	37.96	0.50	Pass
HE40	MCS0	2	6	2437	Full	38.66	38.66	38.06	38.07	0.50	Pass
HE40	MCS0	2	9	2452	Full	38.66	38.66	37.96	37.94	0.50	Pass

TEST RESULTS DATA
Average Output Power

2.4GHz Band MIMO																	
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Average Conducted Power (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
						Ant0	Ant1	SUM	Ant0	Ant1	Ant0	Ant1	Ant0	Ant1	Ant0	Ant1	
HE20	MCS0	2	1	2412	Full	13.80	11.50	15.81	30.00		2.79		18.60		36.00		Pass
HE20	MCS0	2	2	2417	Full	15.40	13.10	17.41	30.00		2.79		20.20		36.00		Pass
HE20	MCS0	2	3	2422	Full	16.70	14.30	18.67	30.00		2.79		21.46		36.00		Pass
HE20	MCS0	2	4	2427	Full	17.60	15.30	19.61	30.00		2.79		22.40		36.00		Pass
HE20	MCS0	2	6	2437	Full	20.00	16.50	21.60	30.00		2.79		24.39		36.00		Pass
HE20	MCS0	2	8	2447	Full	19.00	16.90	21.09	30.00		2.79		23.88		36.00		Pass
HE20	MCS0	2	9	2452	Full	17.50	15.80	19.74	30.00		2.79		22.53		36.00		Pass
HE20	MCS0	2	10	2457	Full	15.20	13.50	17.44	30.00		2.79		20.23		36.00		Pass
HE20	MCS0	2	11	2462	Full	13.40	11.40	15.52	30.00		2.79		18.31		36.00		Pass
HE40	MCS0	2	3	2422	Full	13.00	10.40	14.90	30.00		2.79		17.69		36.00		Pass
HE40	MCS0	2	4	2427	Full	12.40	10.00	14.37	30.00		2.79		17.16		36.00		Pass
HE40	MCS0	2	5	2432	Full	13.90	11.50	15.87	30.00		2.79		18.66		36.00		Pass
HE40	MCS0	2	6	2437	Full	14.00	11.40	15.90	30.00		2.79		18.69		36.00		Pass
HE40	MCS0	2	8	2447	Full	10.90	9.00	13.06	30.00		2.79		15.85		36.00		Pass
HE40	MCS0	2	9	2452	Full	10.80	8.70	12.89	30.00		2.79		15.68		36.00		Pass

Note: Measured power (dBm) has offset with cable loss.

TEST RESULTS DATA
Peak Power Spectral Density

2.4GHz Band MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Peak PSD (dBm/3kHz)			DG (dBi)		Peak PSD Limit (dBm/3kHz)		Pass/Fail
						Ant0	Ant1	Worse + 3.01	Ant0	Ant1	Ant0	Ant1	
HE20	MCS0	2	1	2412	Full	-12.30	-14.73	-9.29	5.80		8.00		Pass
HE20	MCS0	2	2	2417	Full	-10.74	-12.92	-7.73	5.80		8.00		Pass
HE20	MCS0	2	3	2422	Full	-9.35	-11.73	-6.34	5.80		8.00		Pass
HE20	MCS0	2	4	2427	Full	-8.64	-10.99	-5.63	5.80		8.00		Pass
HE20	MCS0	2	6	2437	Full	-6.65	-9.20	-3.64	5.80		8.00		Pass
HE20	MCS0	2	8	2447	Full	-7.53	-9.38	-4.52	5.80		8.00		Pass
HE20	MCS0	2	9	2452	Full	-8.91	-10.74	-5.90	5.80		8.00		Pass
HE20	MCS0	2	10	2457	Full	-10.96	-12.68	-7.95	5.80		8.00		Pass
HE20	MCS0	2	11	2462	Full	-11.61	-13.33	-8.60	5.80		8.00		Pass
HE40	MCS0	2	3	2422	Full	-16.32	-18.51	-13.31	5.80		8.00		Pass
HE40	MCS0	2	4	2427	Full	-17.06	-19.22	-14.05	5.80		8.00		Pass
HE40	MCS0	2	5	2432	Full	-15.21	-17.62	-12.20	5.80		8.00		Pass
HE40	MCS0	2	6	2437	Full	-15.42	-18.74	-12.41	5.80		8.00		Pass
HE40	MCS0	2	8	2447	Full	-18.39	-20.30	-15.38	5.80		8.00		Pass
HE40	MCS0	2	9	2452	Full	-19.19	-20.89	-16.18	5.80		8.00		Pass

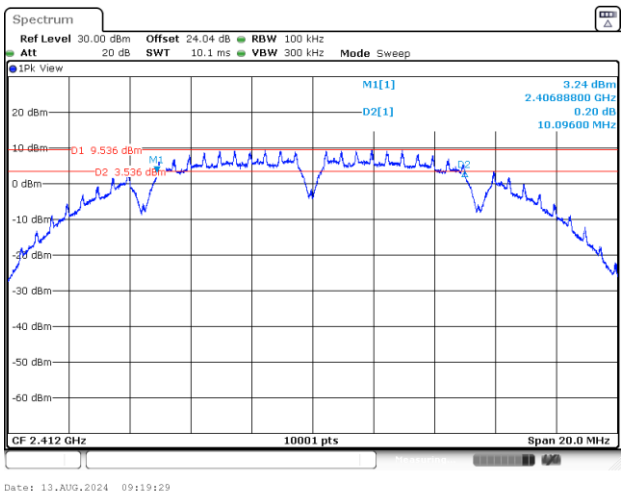
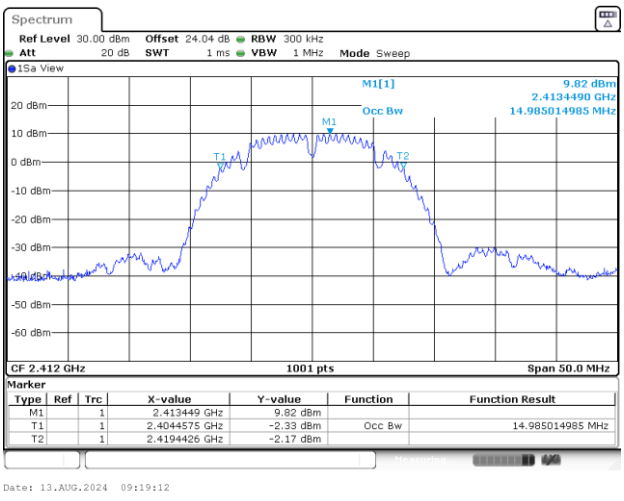
Measured power density (dBm) has offset with cable loss.

6dB and 99% Occupied Bandwidth

<SISO Mode>

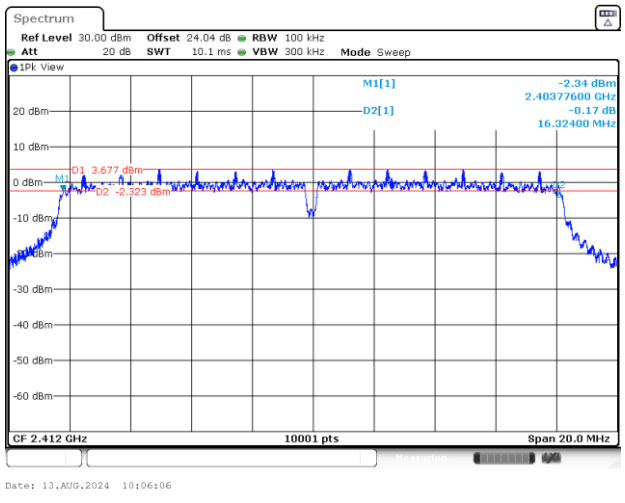
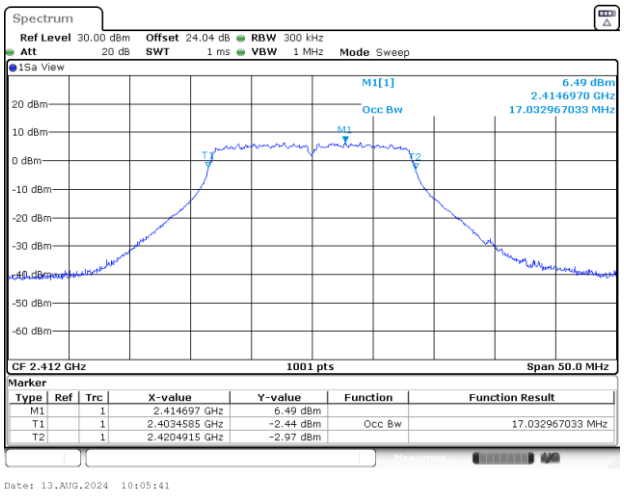
<Ant. 0>

<802.11b>

6dB Bandwidth	99% Occupied Bandwidth
	

Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

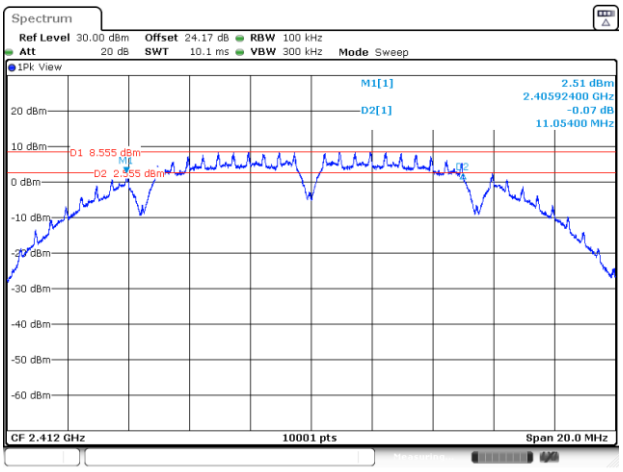
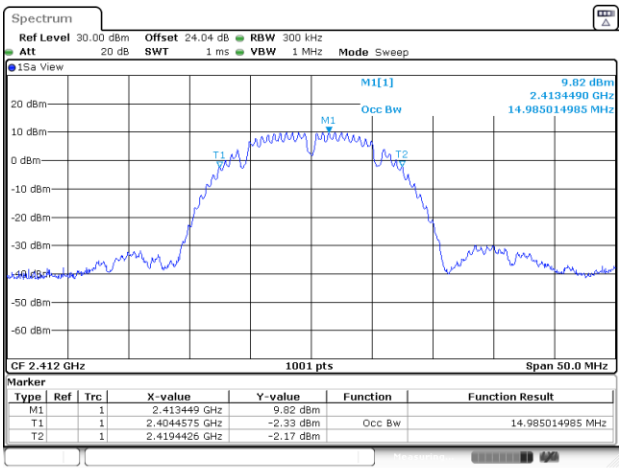
<802.11g>

6dB Bandwidth	99% Occupied Bandwidth
	

Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

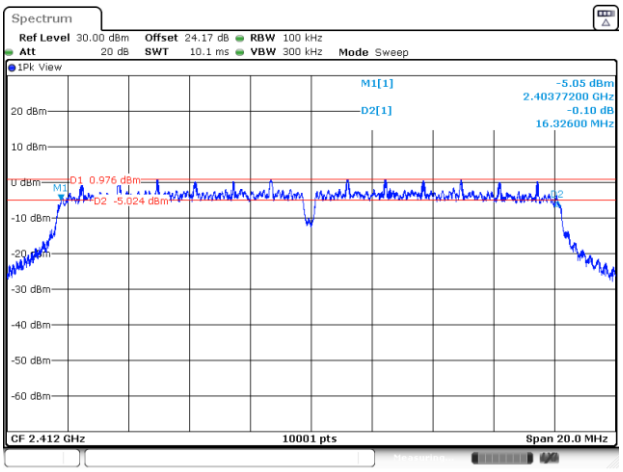
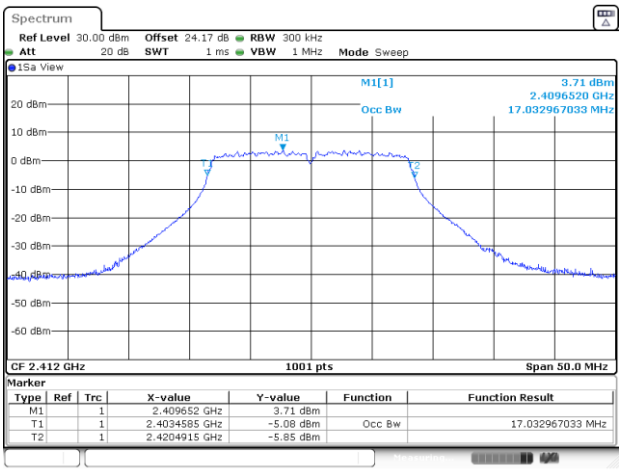
<Ant. 1>

<802.11b>

6dB Bandwidth	99% Occupied Bandwidth
	

Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

<802.11g>

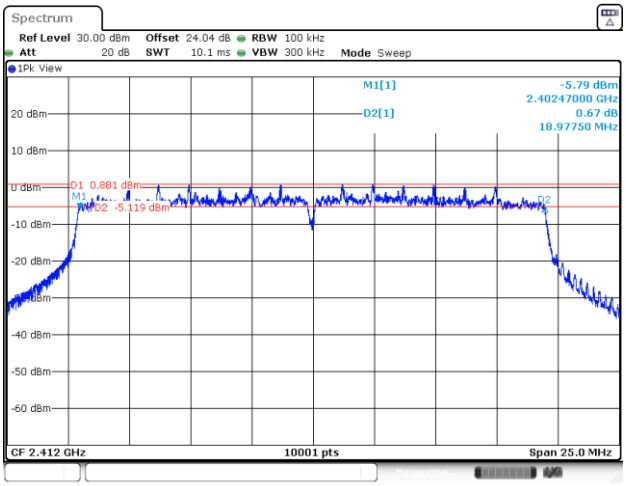
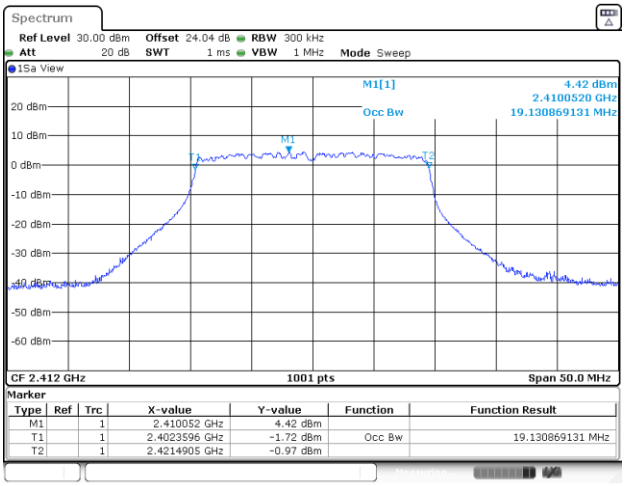
6dB Bandwidth	99% Occupied Bandwidth
	

Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

<MIMO Mode>

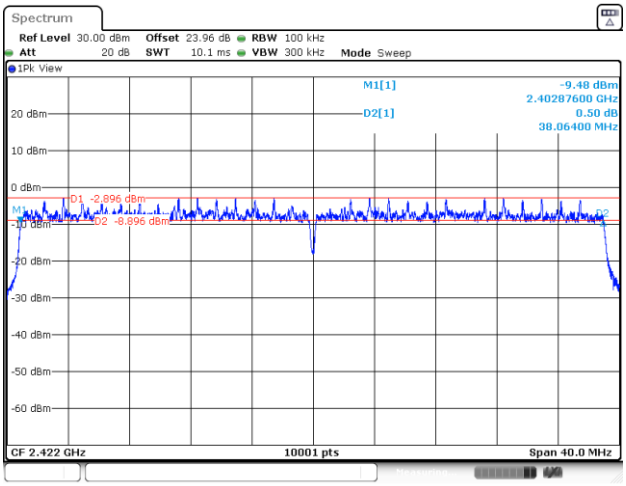
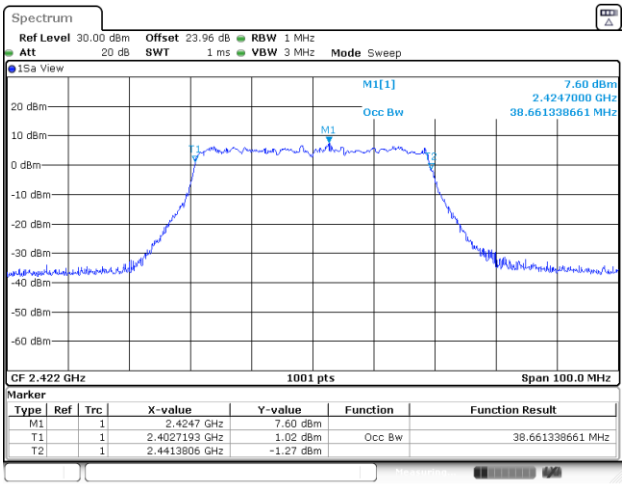
MIMO <Ant. 0+1>

<802.11ax HE20>

6dB Bandwidth	99% Occupied Bandwidth
	

Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

<802.11ax HE40>

6dB Bandwidth	99% Occupied Bandwidth
	

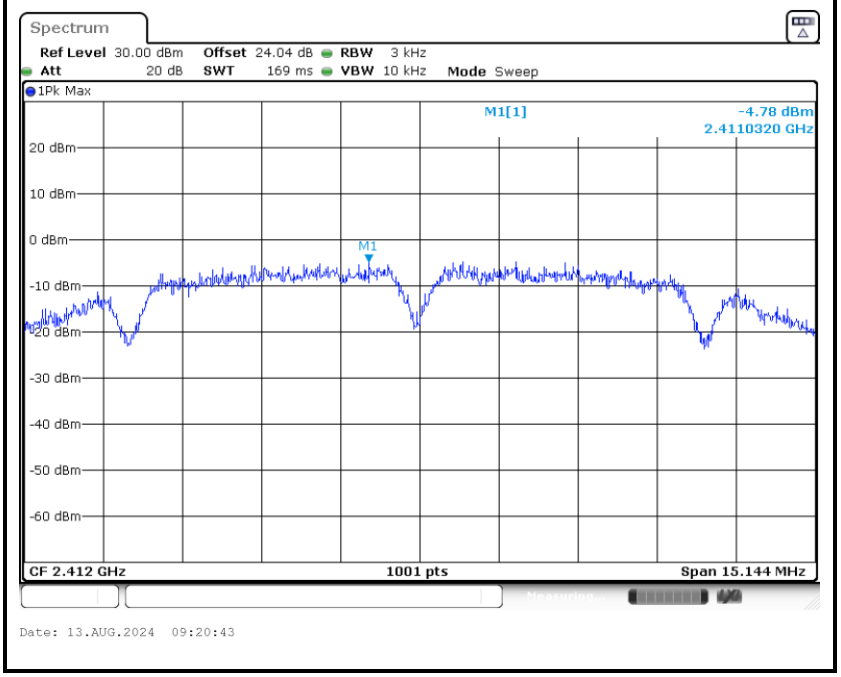
Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

Power Spectral Density(dBm/3kHz)

<802.11b>

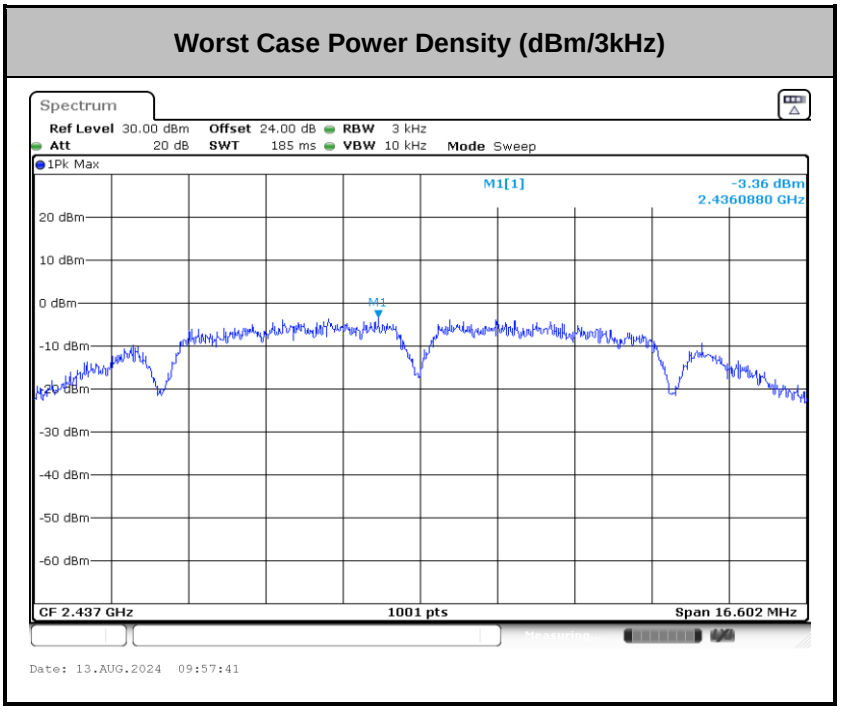
<Ant.0>

Worst Case Power Density (dBm/3kHz)



<Ant. 1>

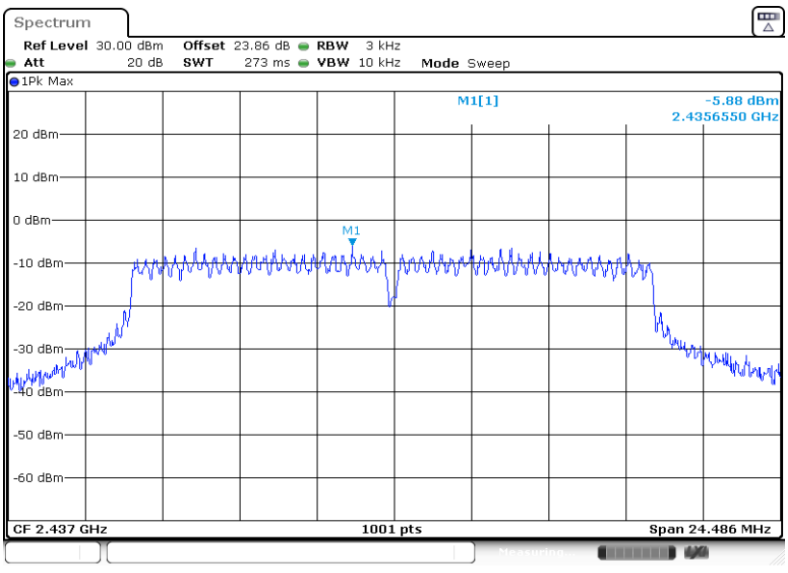
Worst Case Power Density (dBm/3kHz)



<802.11g>

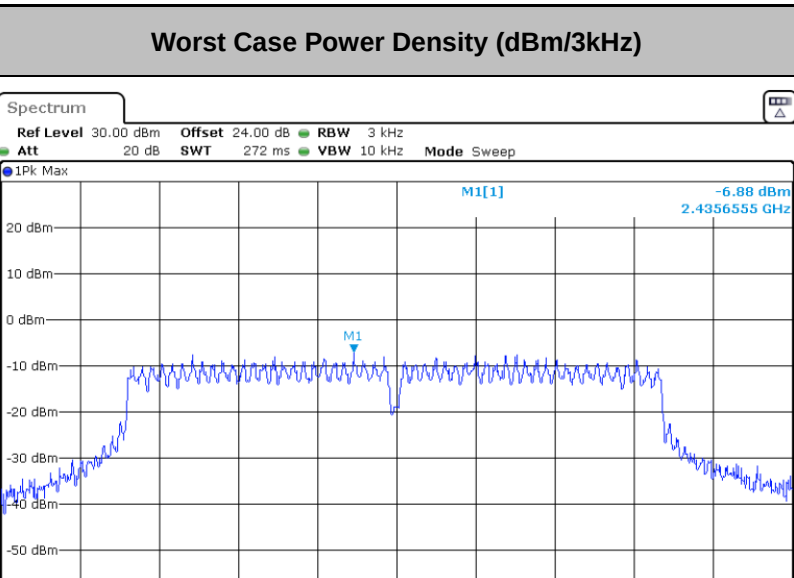
<Ant. 0>

Worst Case Power Density (dBm/3kHz)

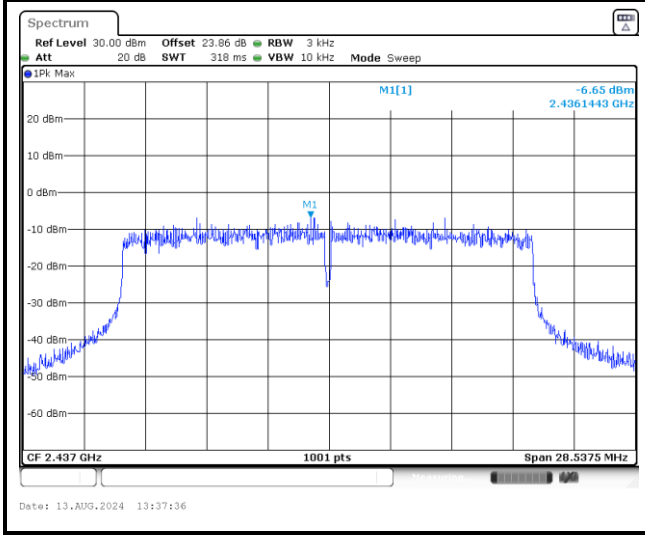
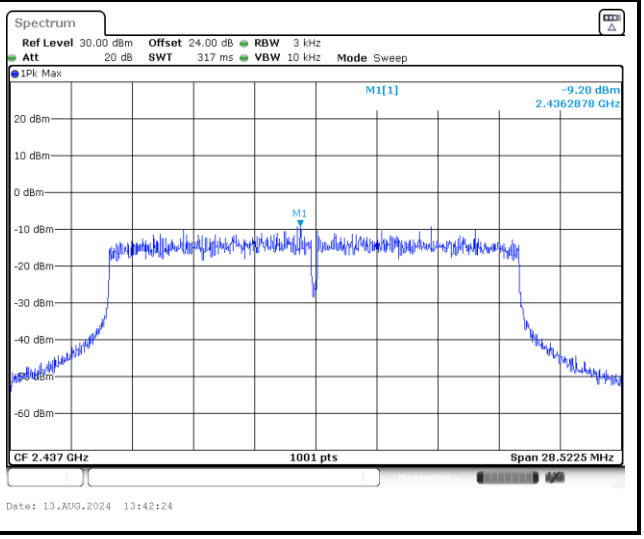


<Ant. 1>

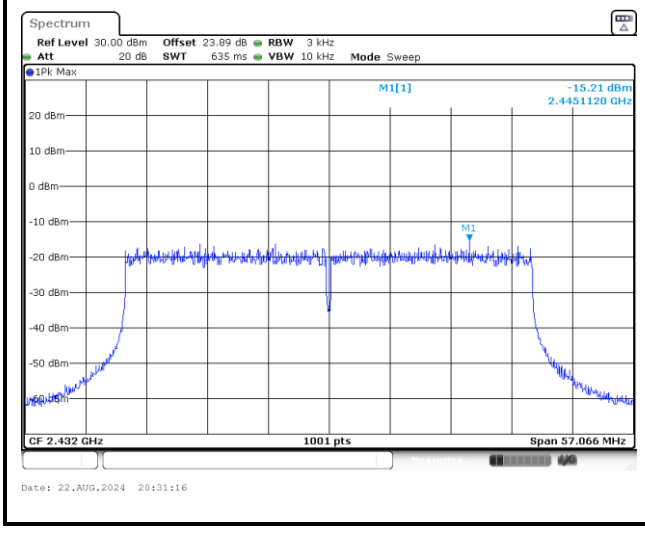
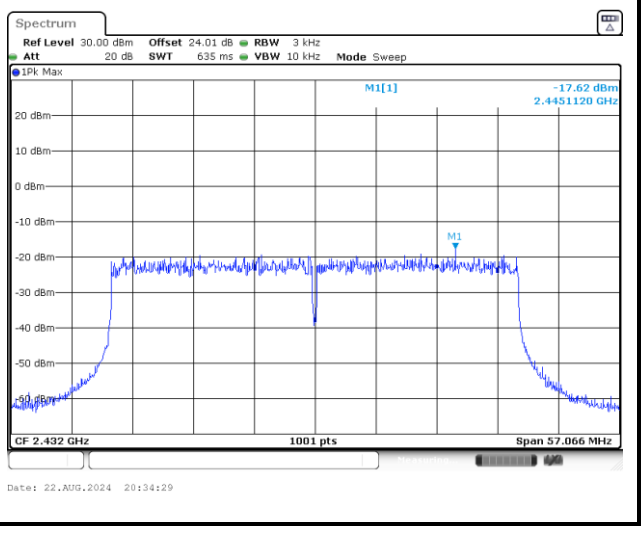
Worst Case Power Density (dBm/3kHz)



<802.11ax HE20>

Maximum Power Density Plot (dBm/3kHz)	
MIMO Ant 0	**MIMO Ant 1**
	

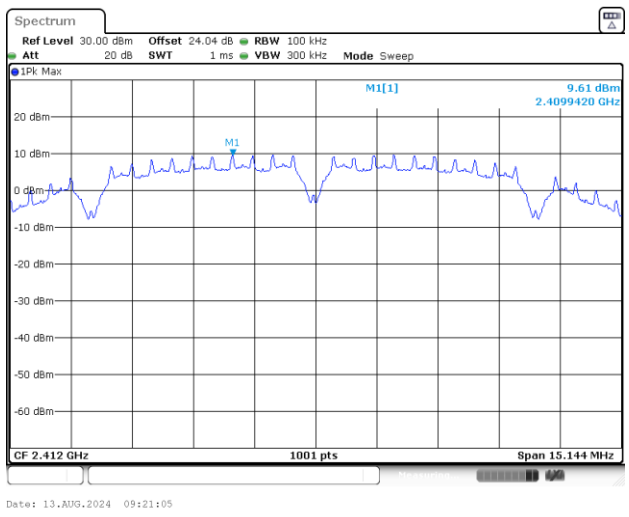
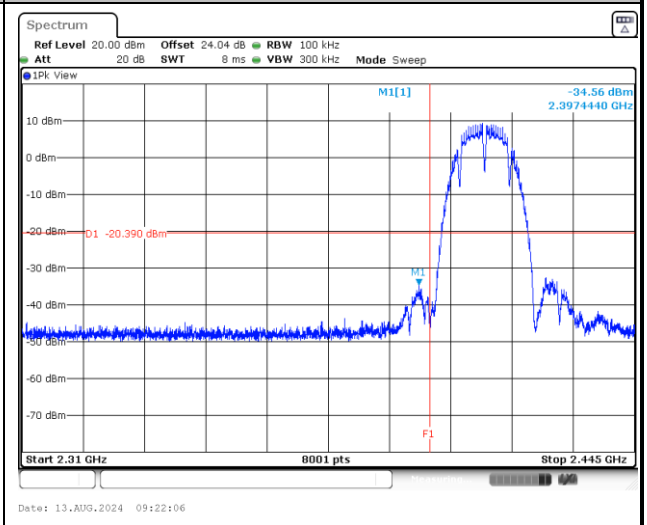
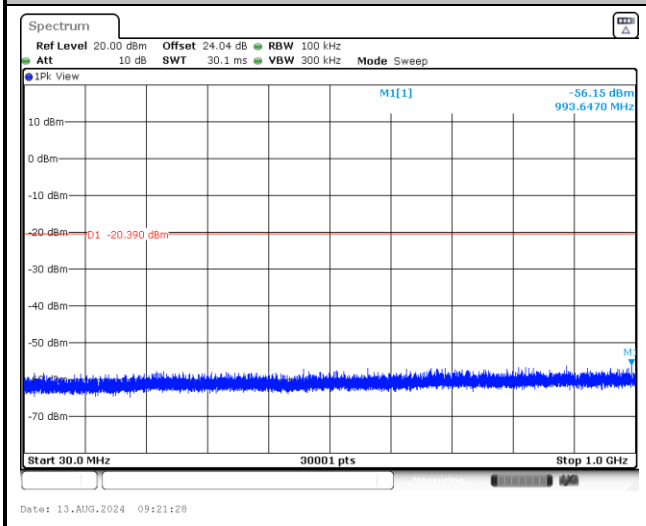
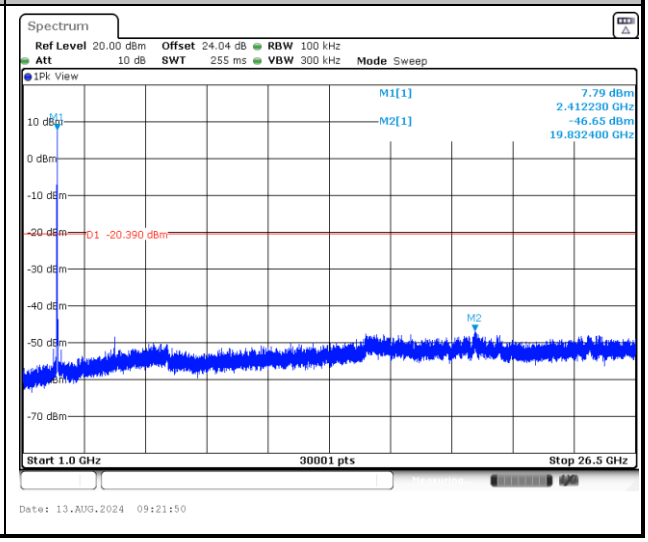
<802.11ax HE40>

Maximum Power Density Plot (dBm/3kHz)	
MIMO Ant 0	**MIMO Ant 1**
	

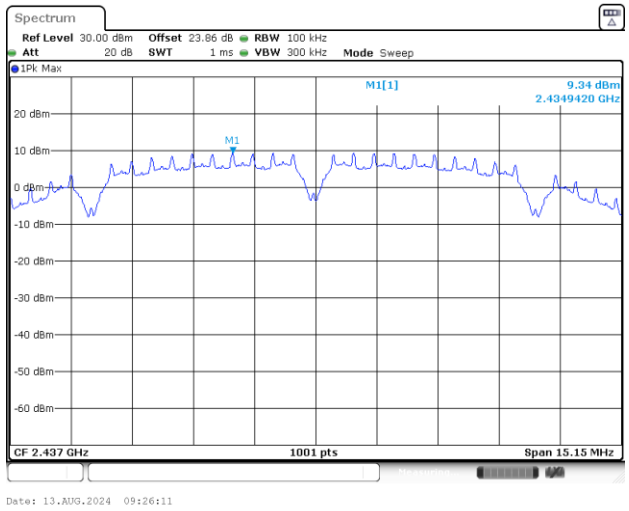
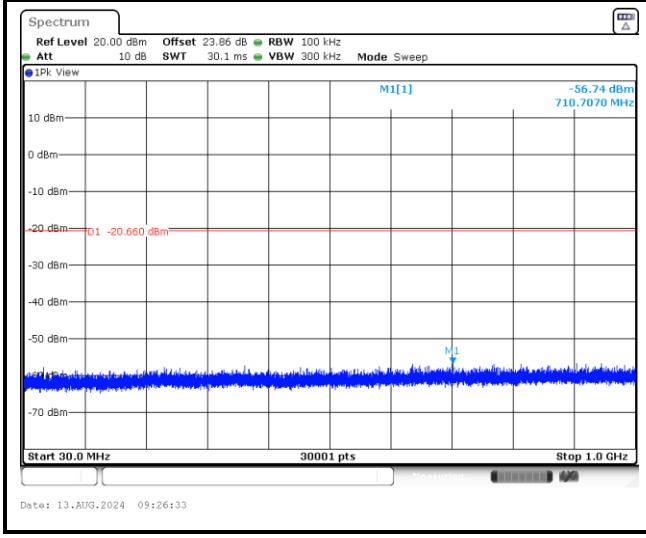
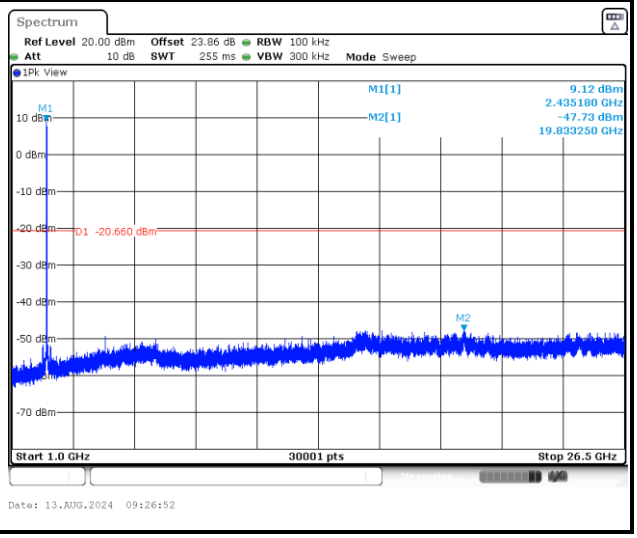
Band Edges and Spurious Emission

Number of TX = 1, Ant. 0 (Measured)

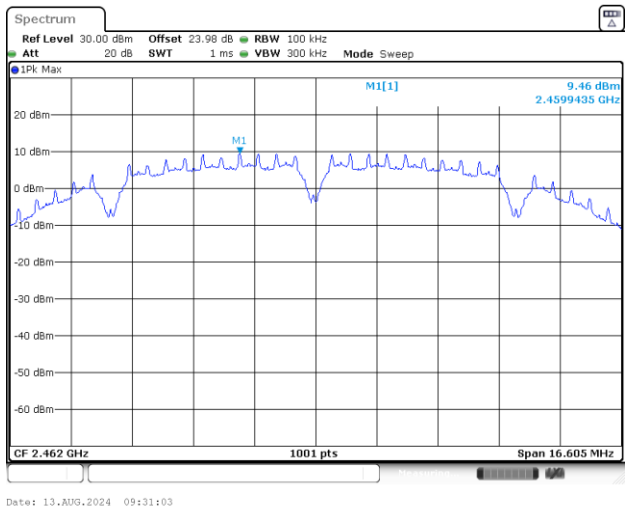
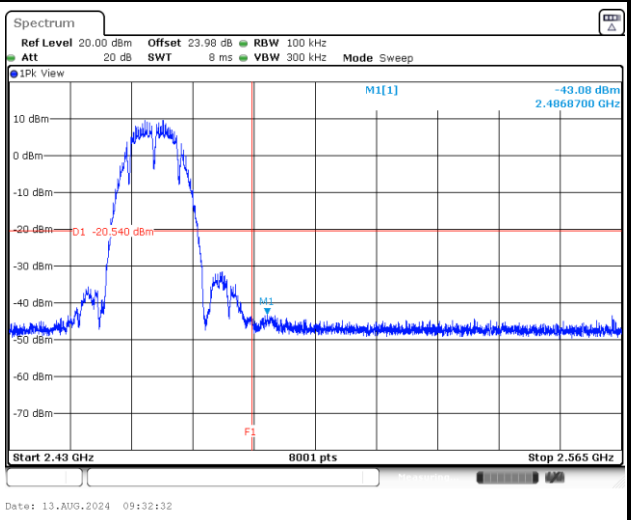
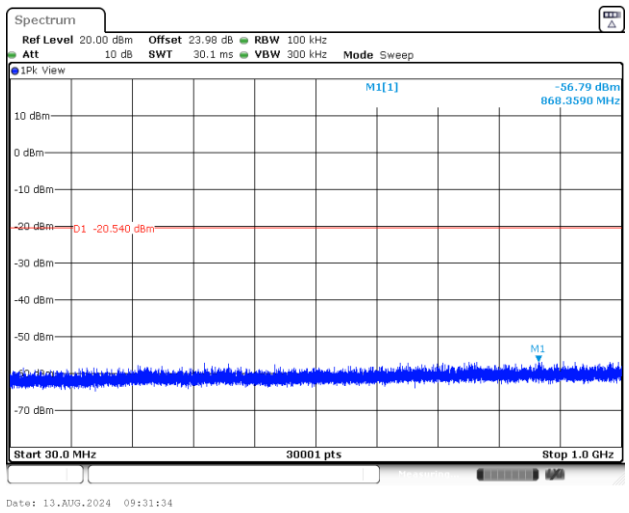
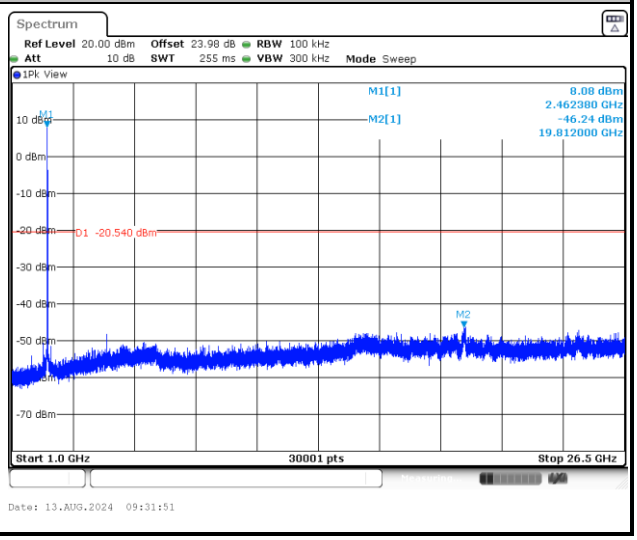
Test Mode :	802.11b	Test Channel :	01

100kHz PSD reference Level	Low Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

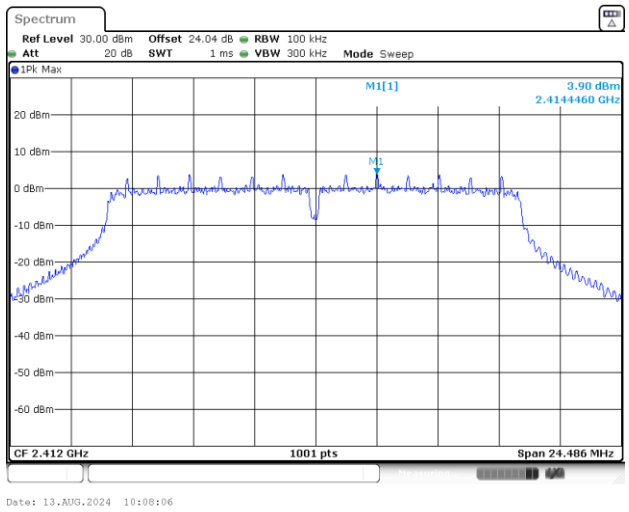
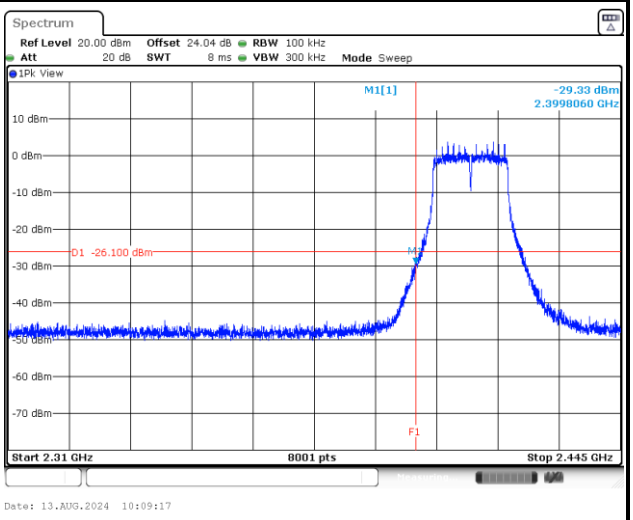
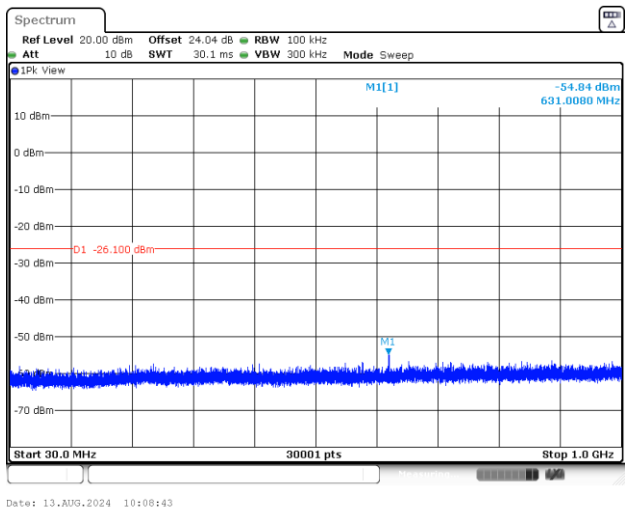
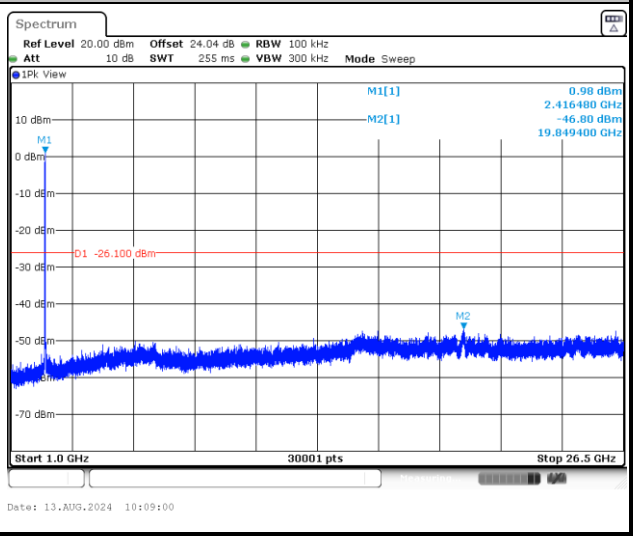
Test Mode :	802.11b	Test Channel :	06

100kHz PSD reference Level	Middle Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

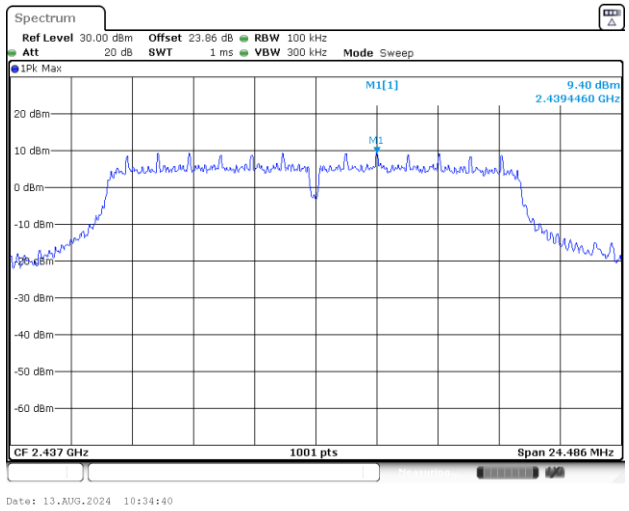
Test Mode :	802.11b	Test Channel :	11

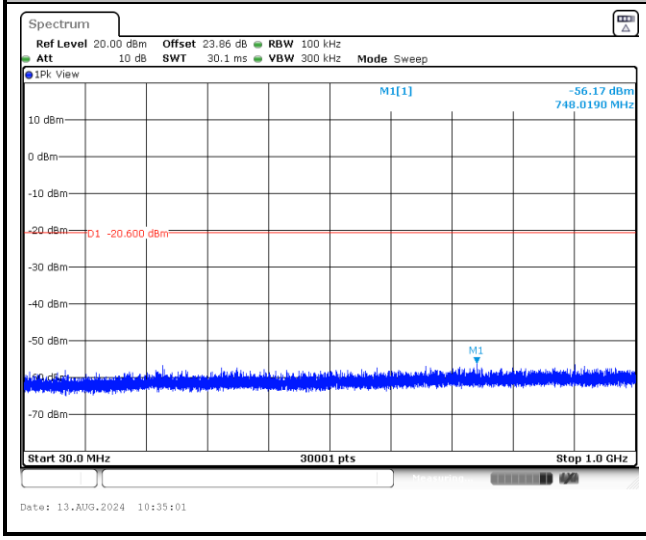
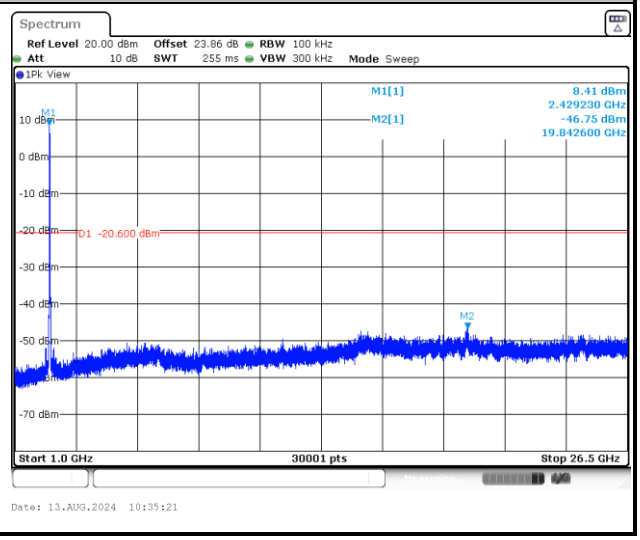
100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11g	Test Channel :	01

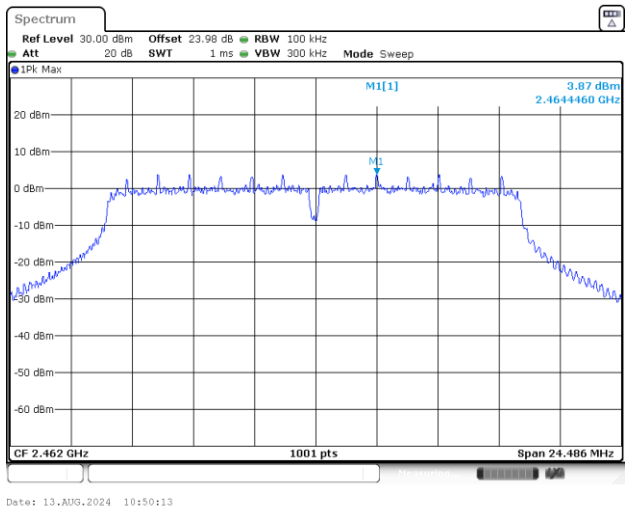
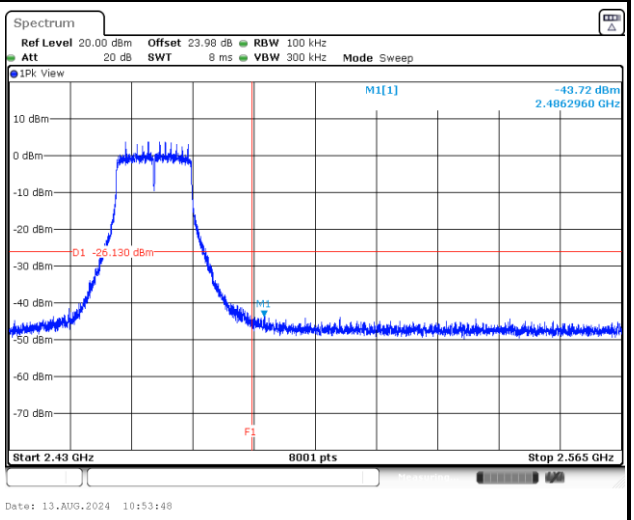
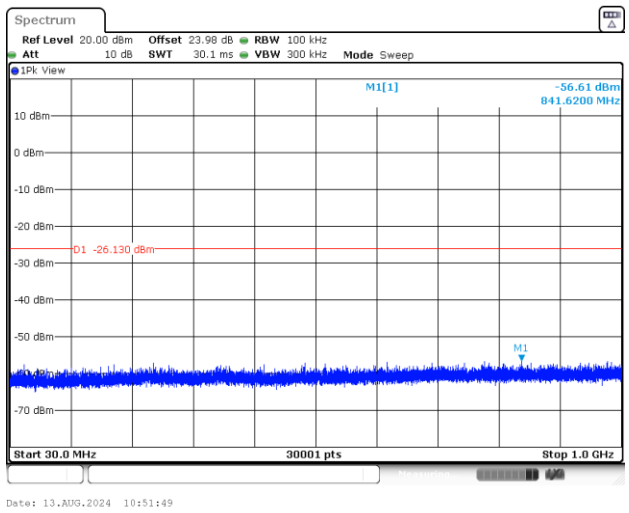
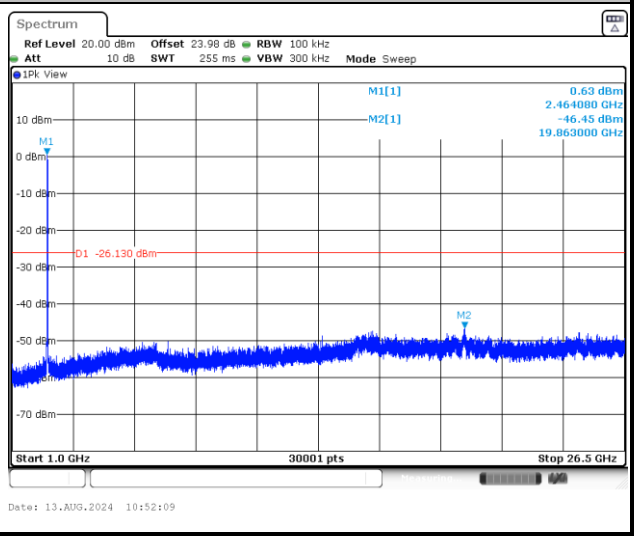
100kHz PSD reference Level	Low Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11g	Test Channel :	06

100kHz PSD reference Level	Middle Channel Plot
	

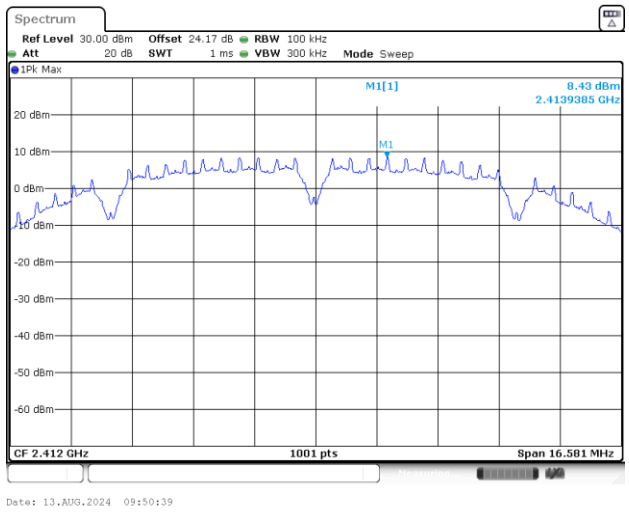
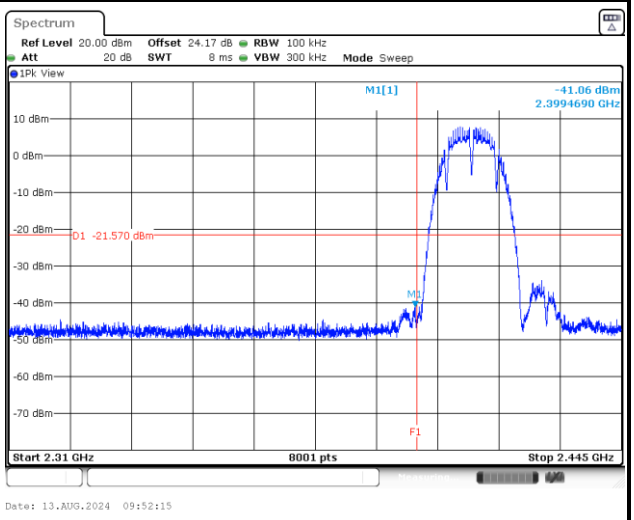
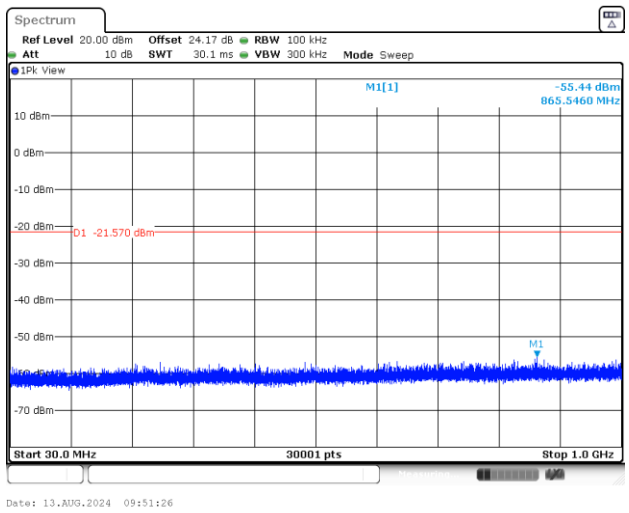
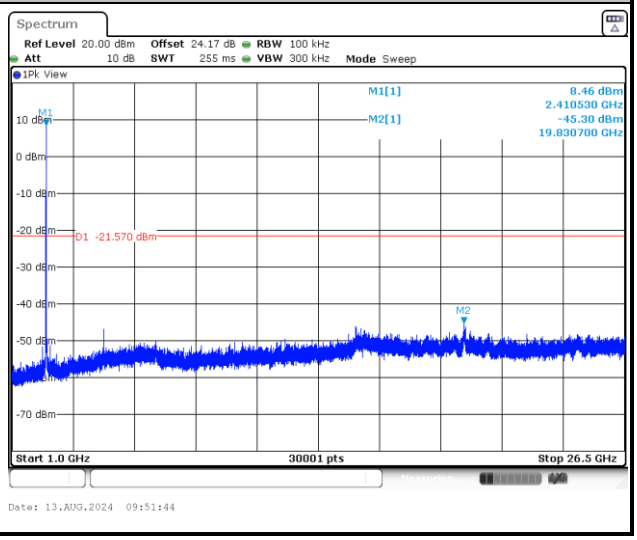
Spurious Emission 30MHz~1GHz	Spurious Emission 1GHz~26.5GHz
	

Test Mode :	802.11g	Test Channel :	11

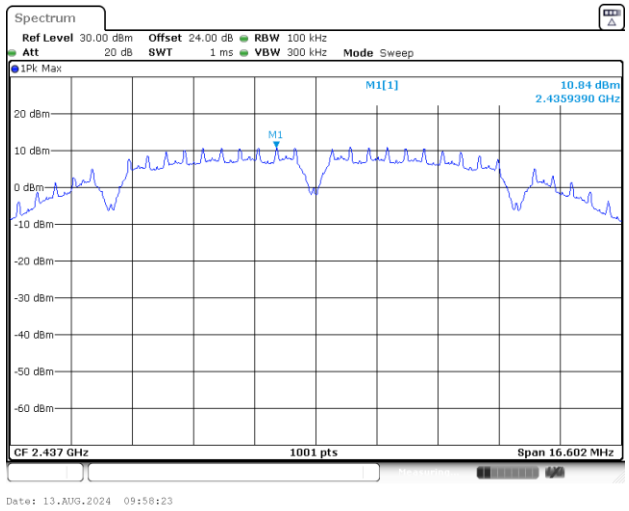
100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

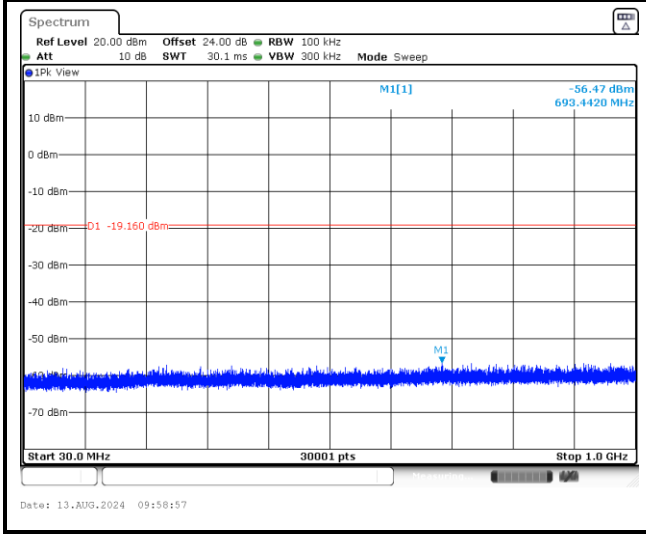
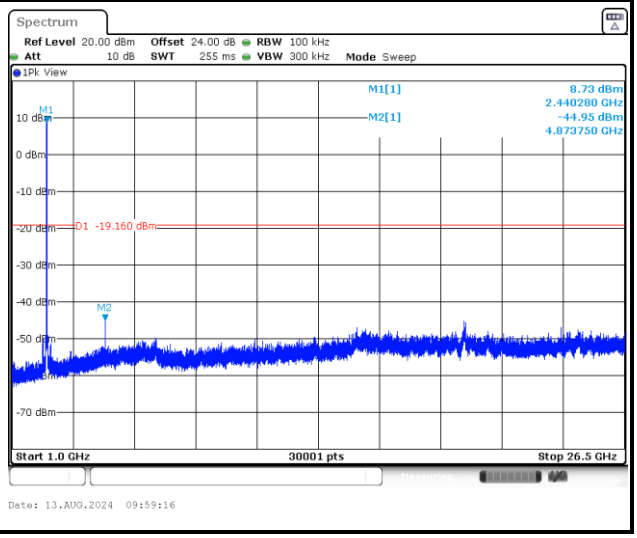
Number of TX = 1, Ant. 1 (Measured)

Test Mode :	802.11b	Test Channel :	01

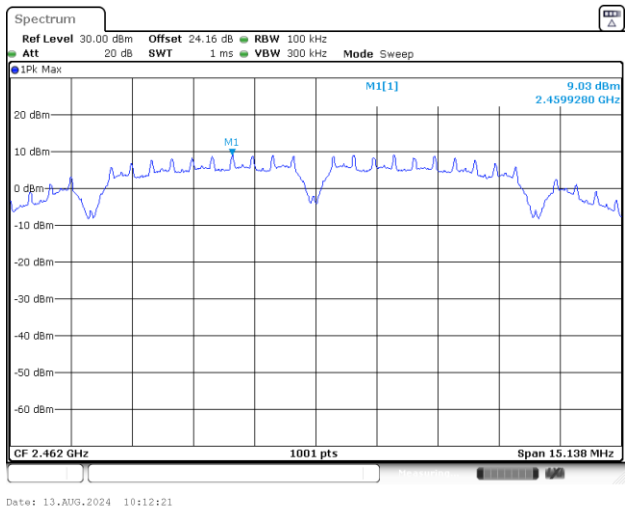
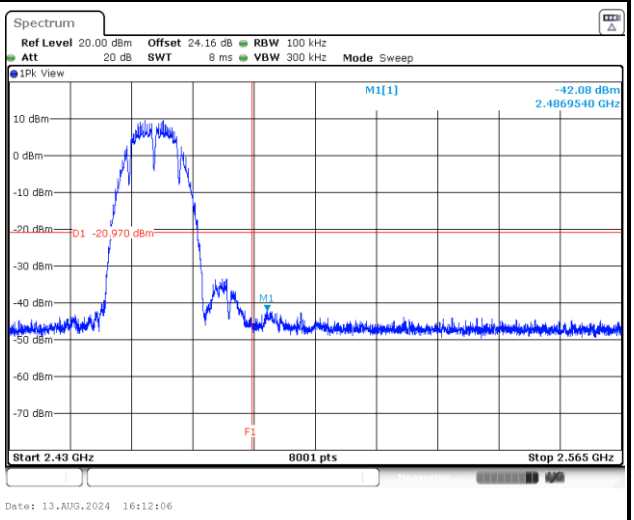
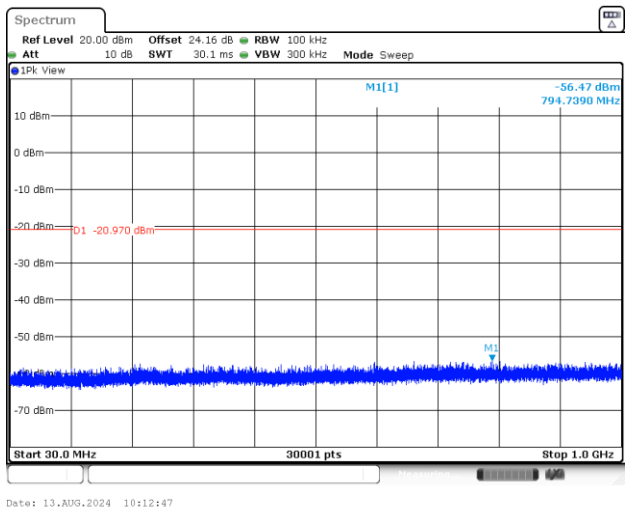
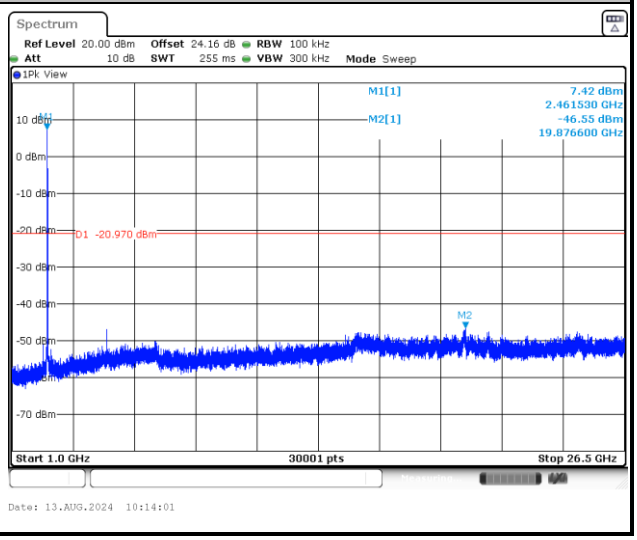
100kHz PSD reference Level	Low Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11b	Test Channel :	06

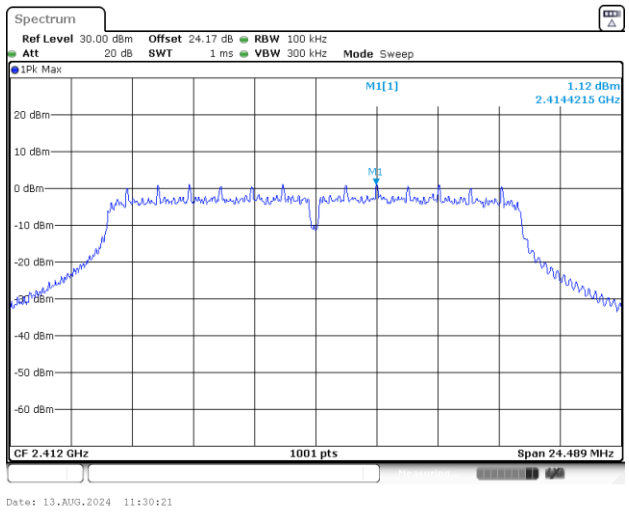
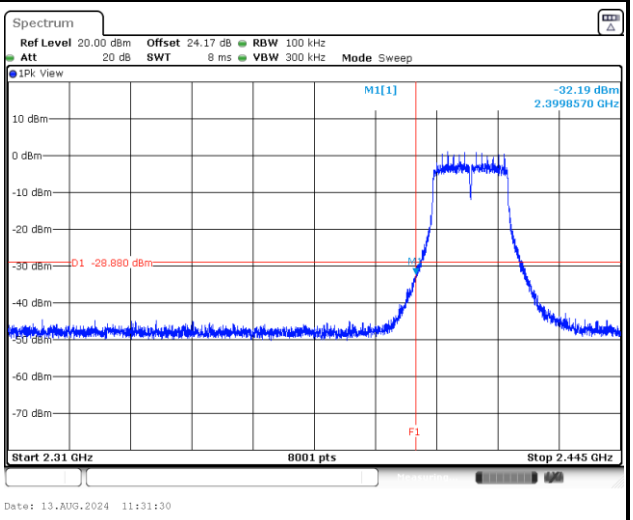
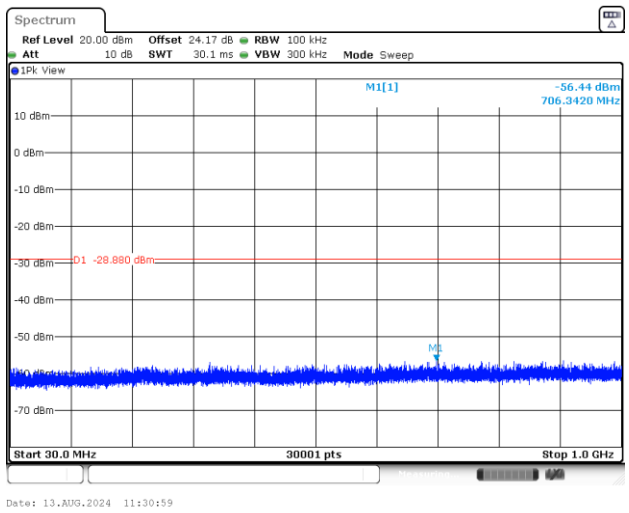
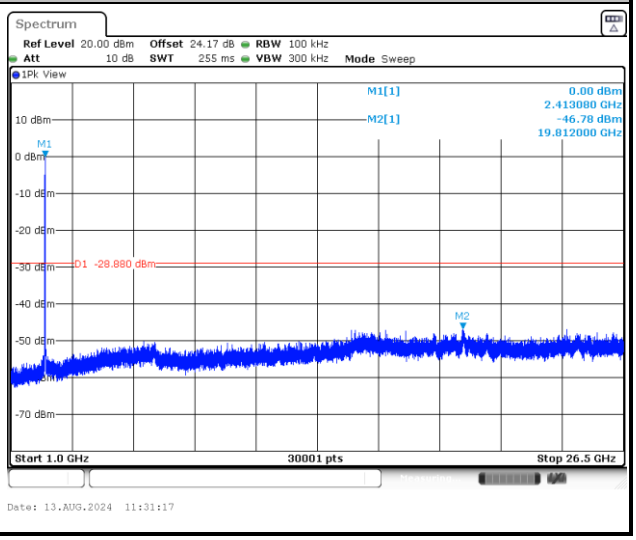
100kHz PSD reference Level	Middle Channel Plot
	

Spurious Emission 30MHz~1GHz	Spurious Emission 1GHz~26.5GHz
	

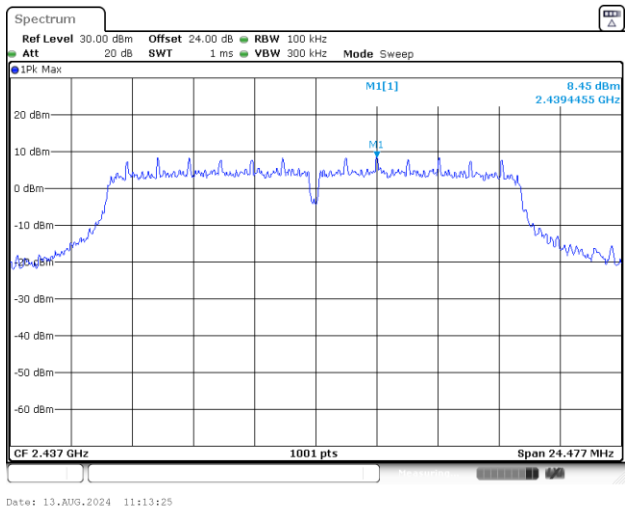
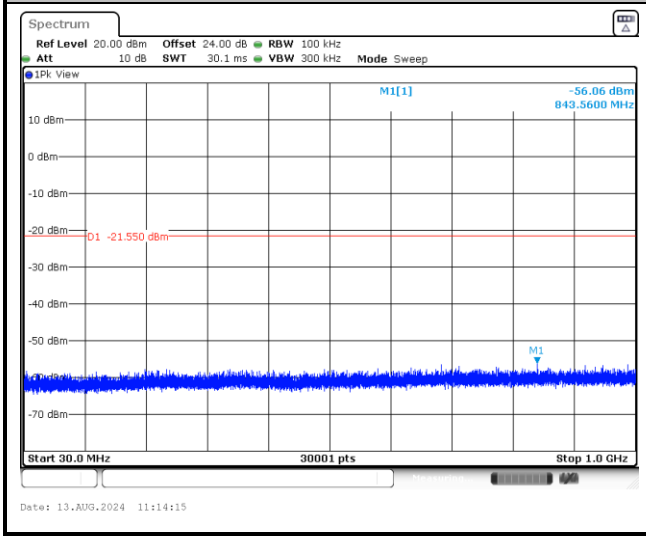
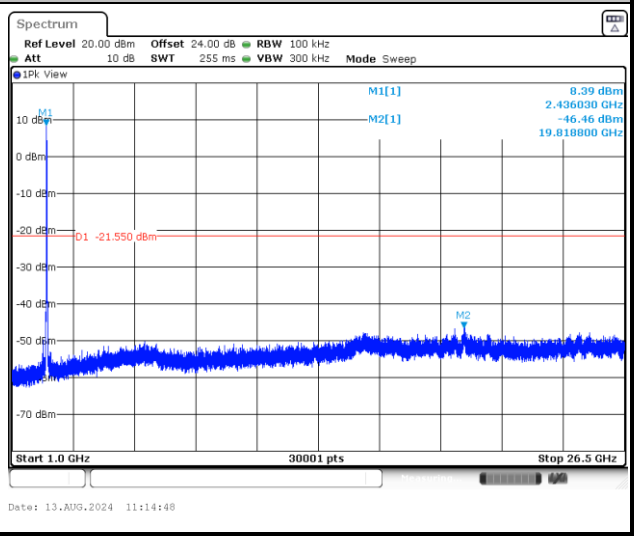
Test Mode :	802.11b	Test Channel :	11

100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

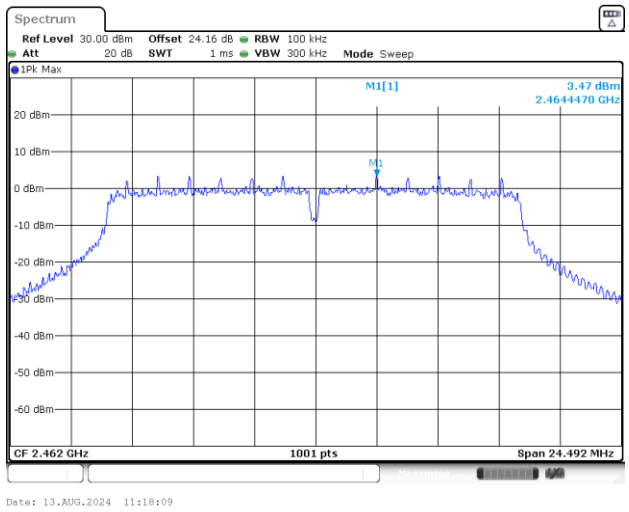
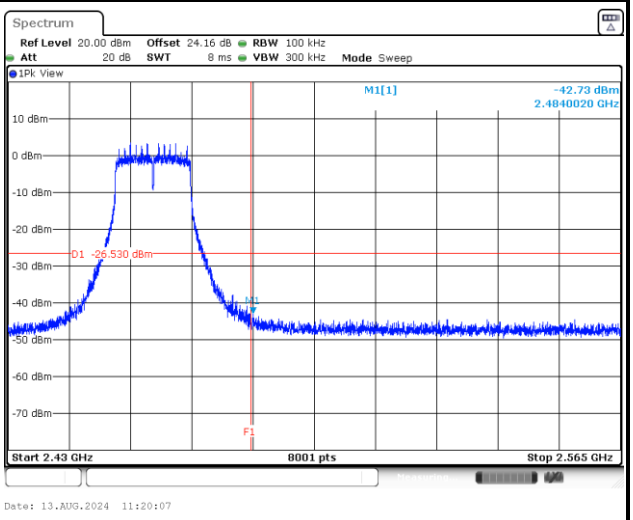
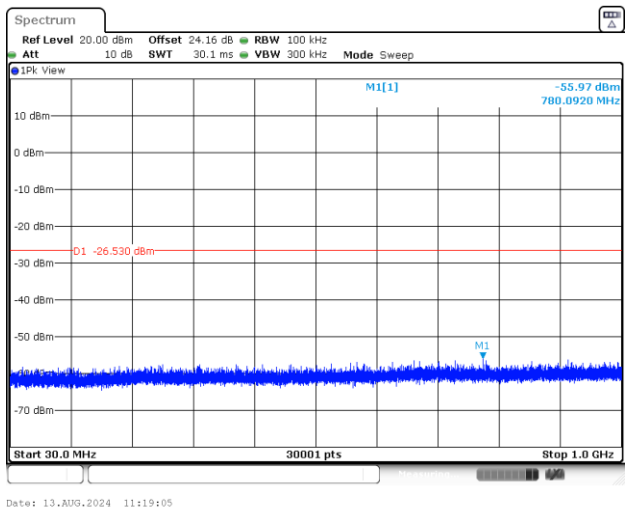
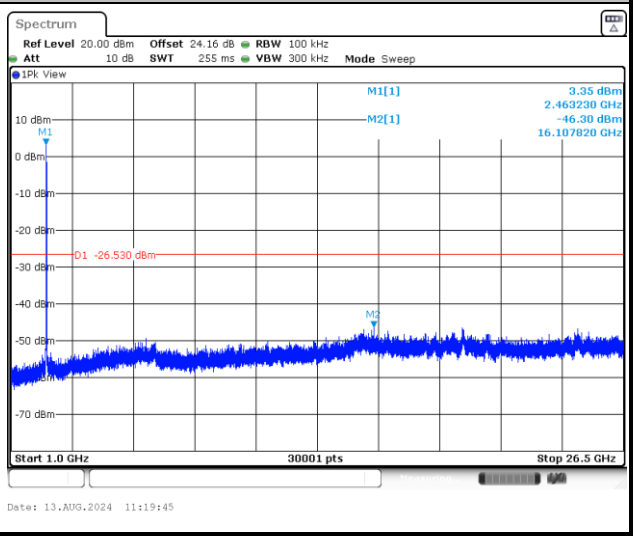
Test Mode :	802.11g	Test Channel :	01

100kHz PSD reference Level	Low Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11g	Test Channel :	06

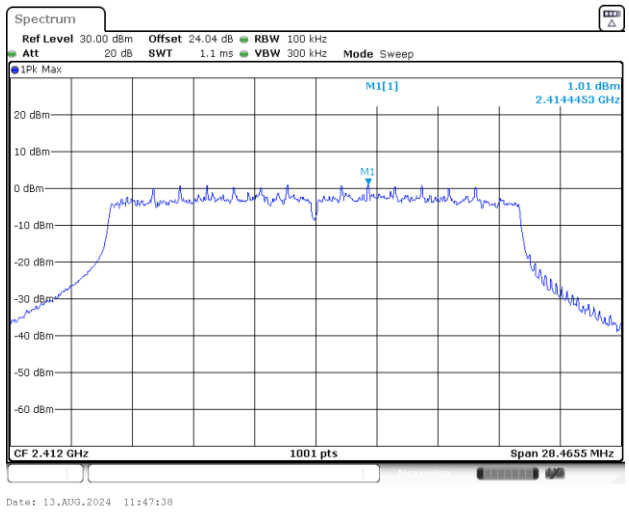
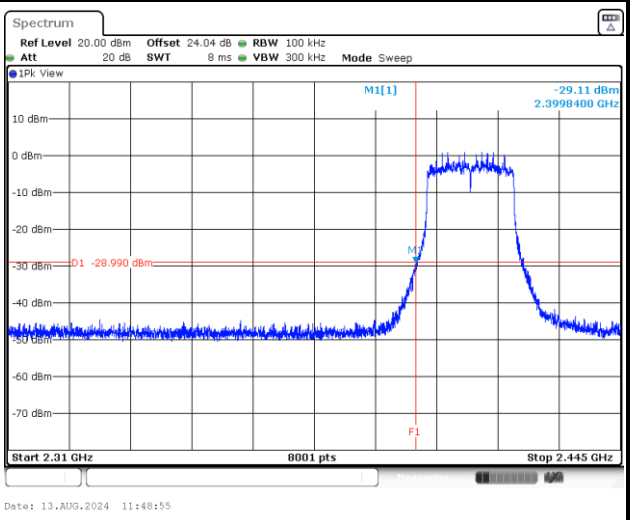
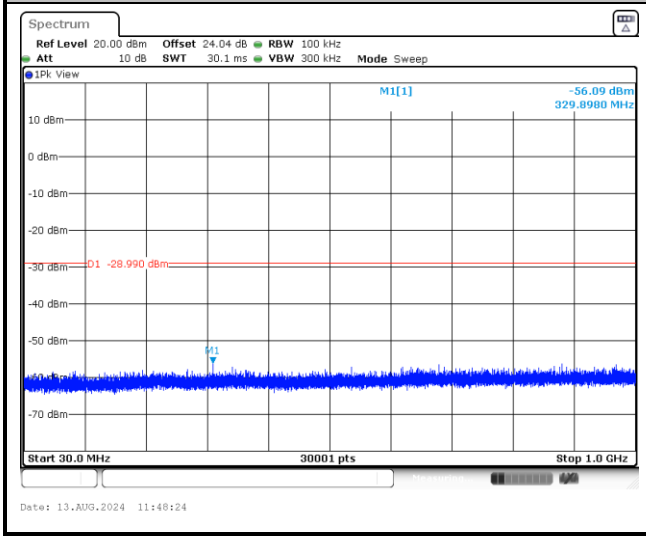
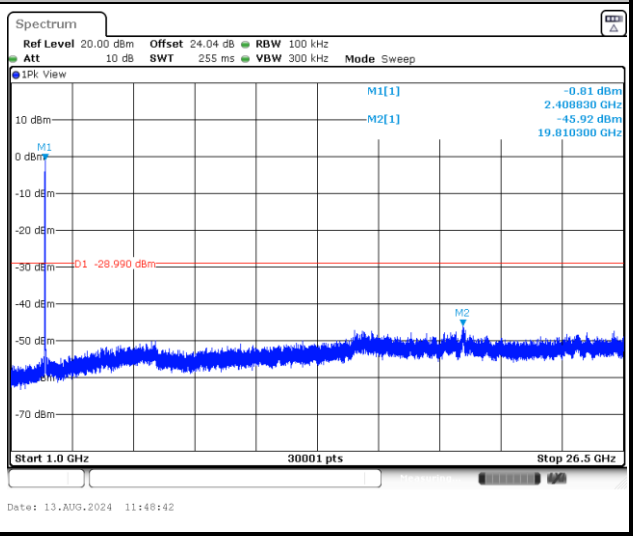
100kHz PSD reference Level	Middle Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11g	Test Channel :	11

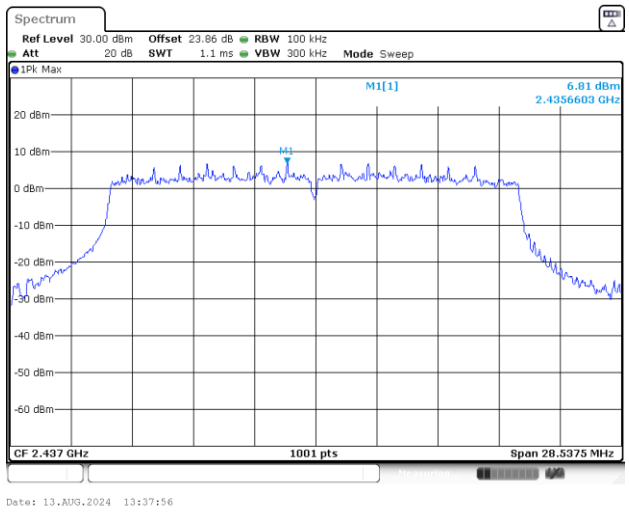
100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

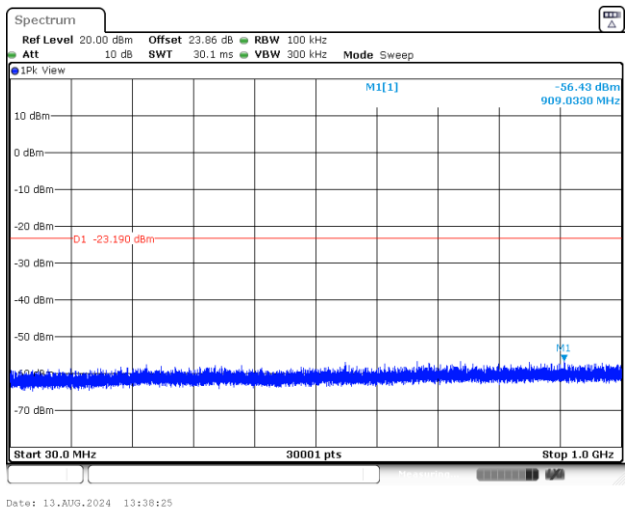
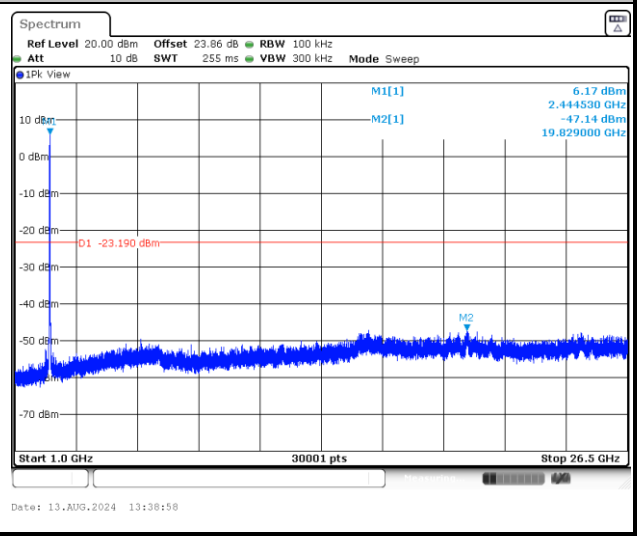
Number of TX = 2, Ant. 0 (Measured)

Test Mode :	802.11ax HE20_FullRU	Test Channel :	01

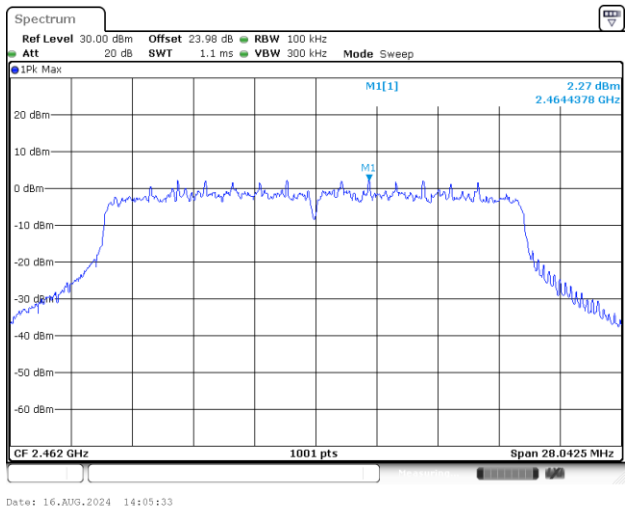
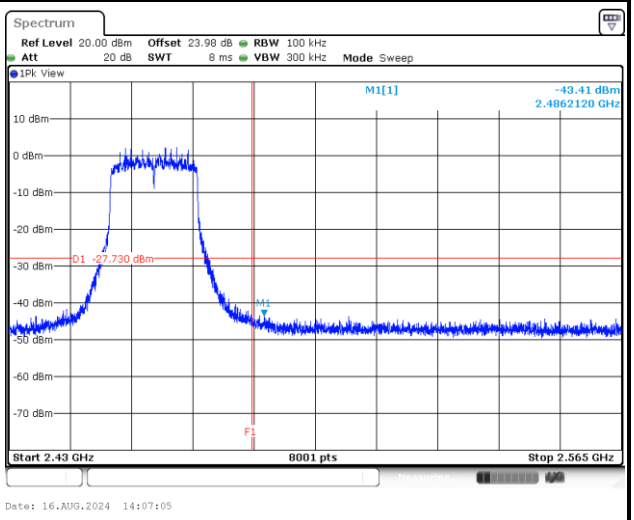
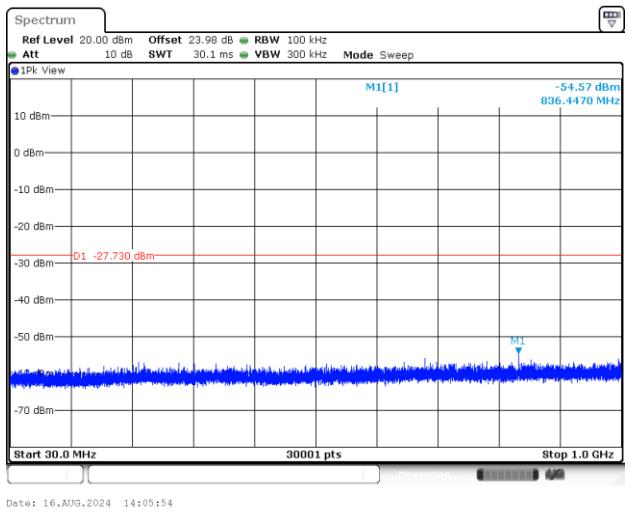
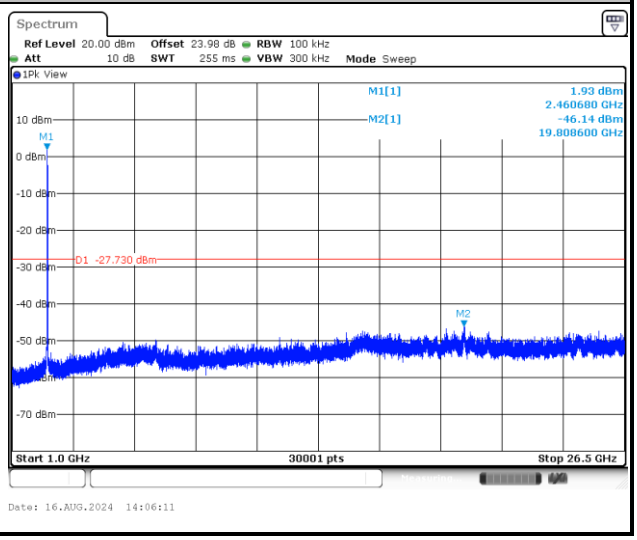
100kHz PSD reference Level	Low Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11ax HE20_FullRU	Test Channel :	06

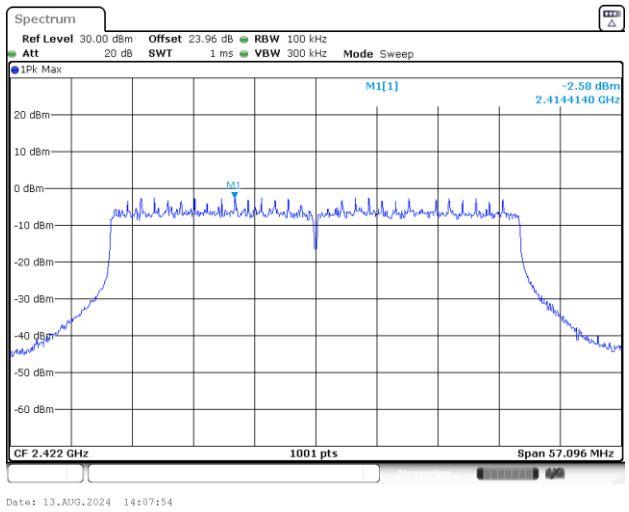
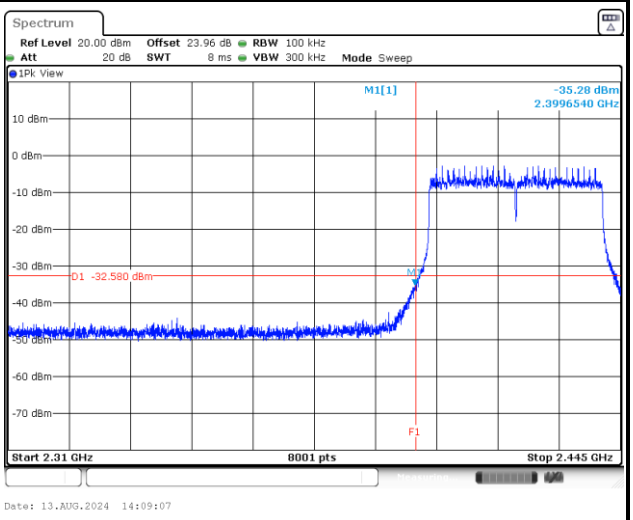
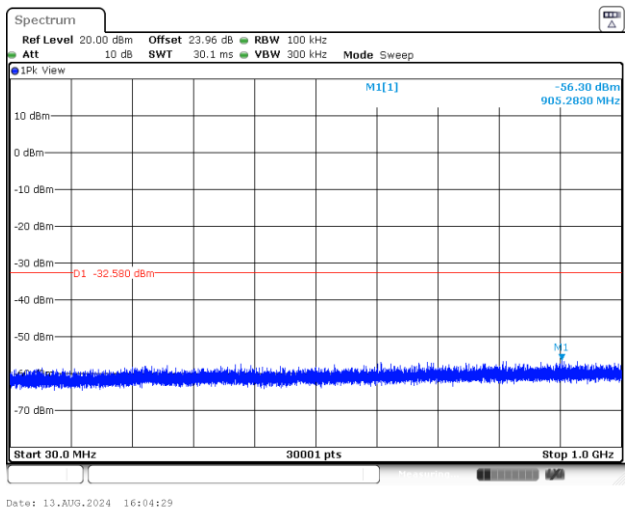
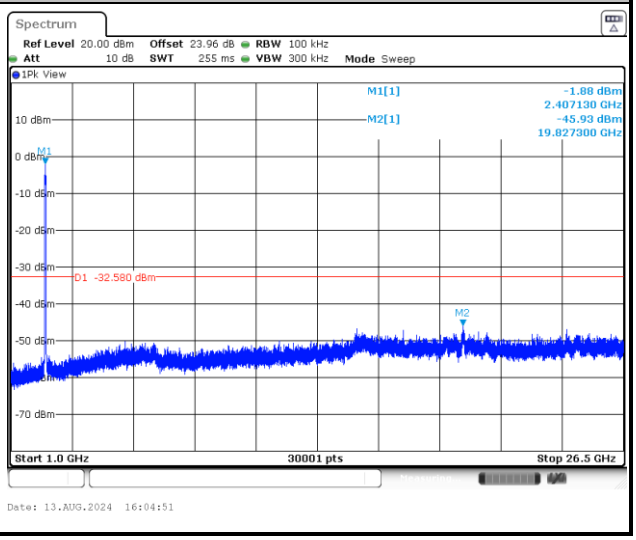
100kHz PSD reference Level	Middle Channel Plot
	

Spurious Emission 30MHz~1GHz	Spurious Emission 1GHz~26.5GHz
	

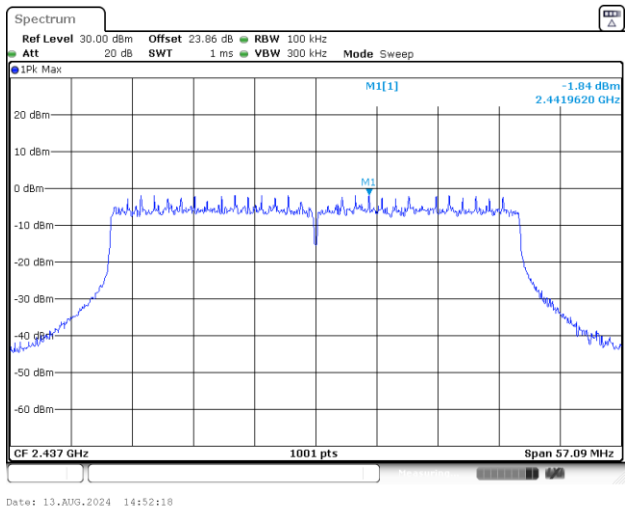
Test Mode :	802.11ax HE20_FullRU	Test Channel :	11

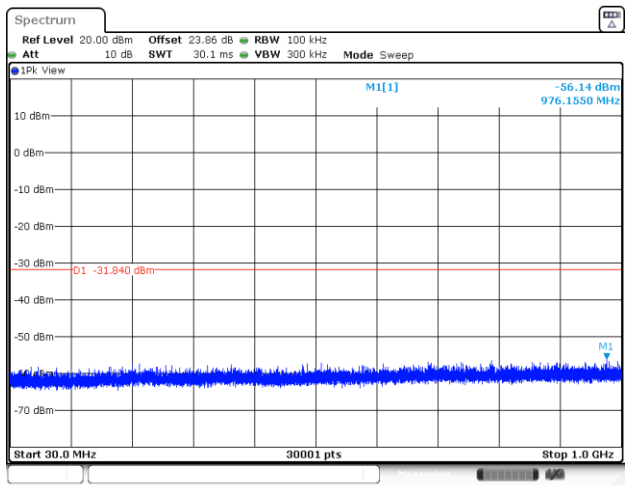
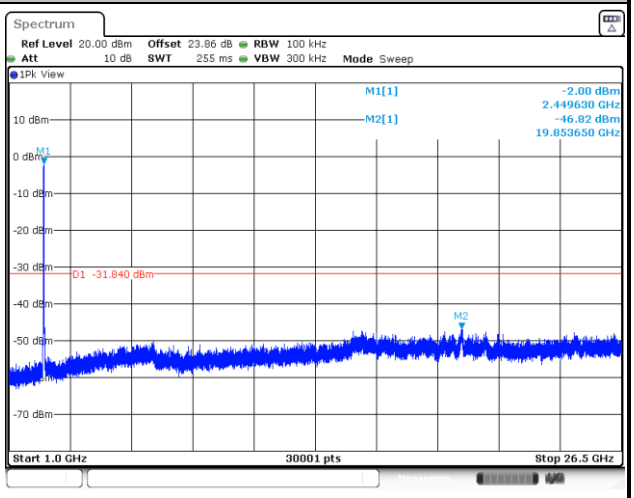
100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11ax HE40_FullRU	Test Channel :	03

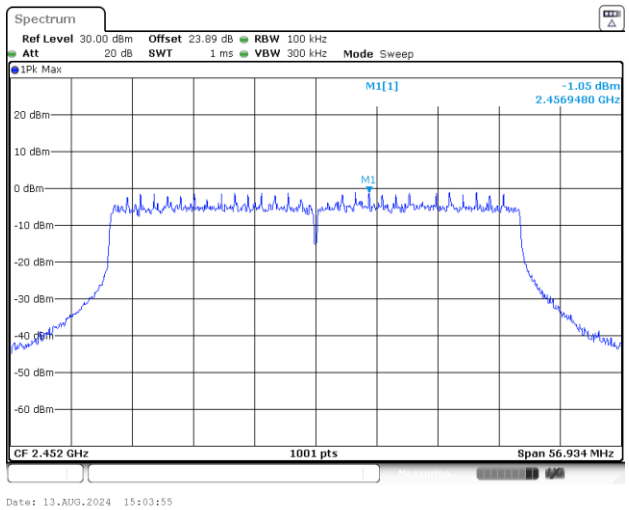
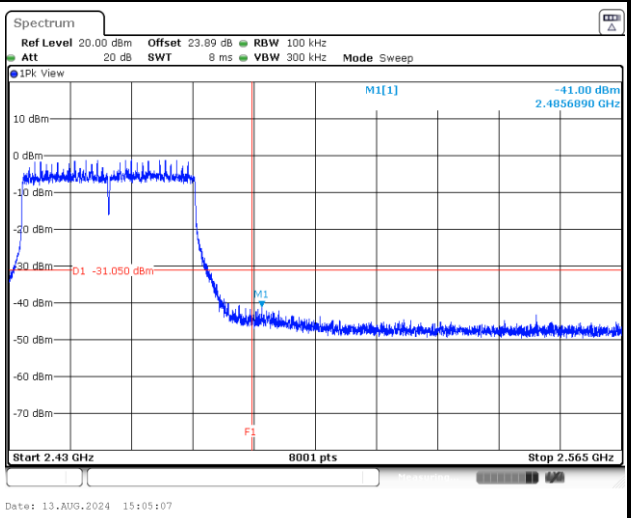
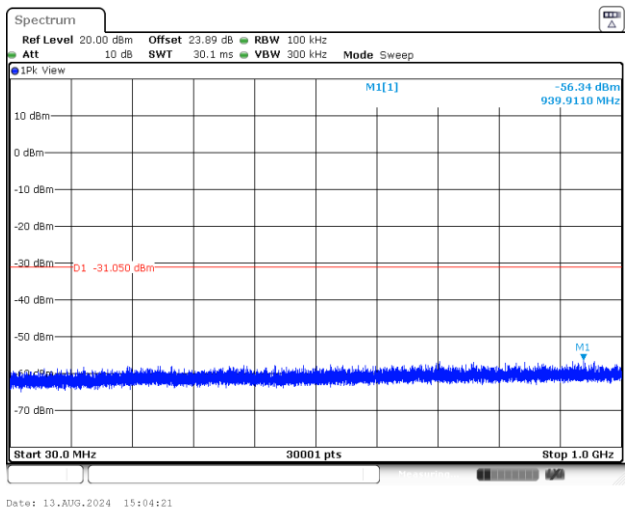
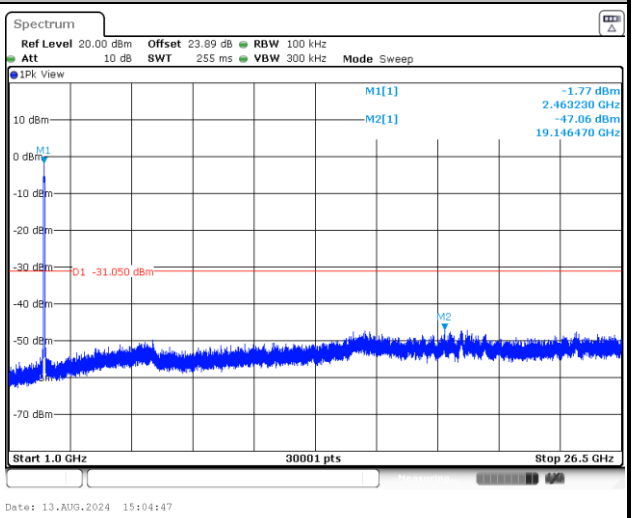
100kHz PSD reference Level	Low Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11ax HE40_FullRU	Test Channel :	06

100kHz PSD reference Level	Middle Channel Plot
	

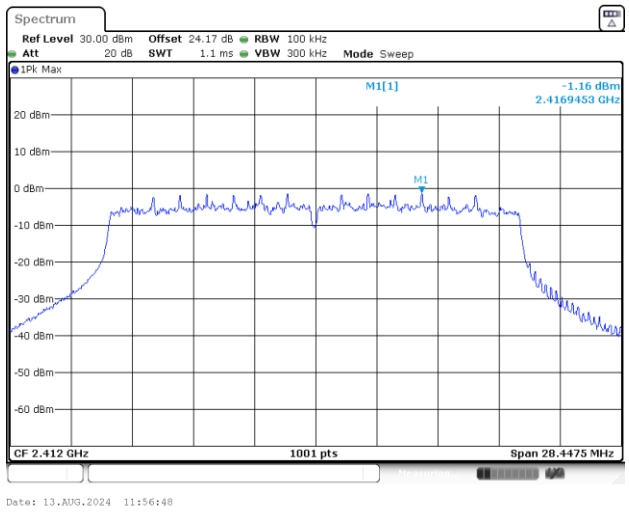
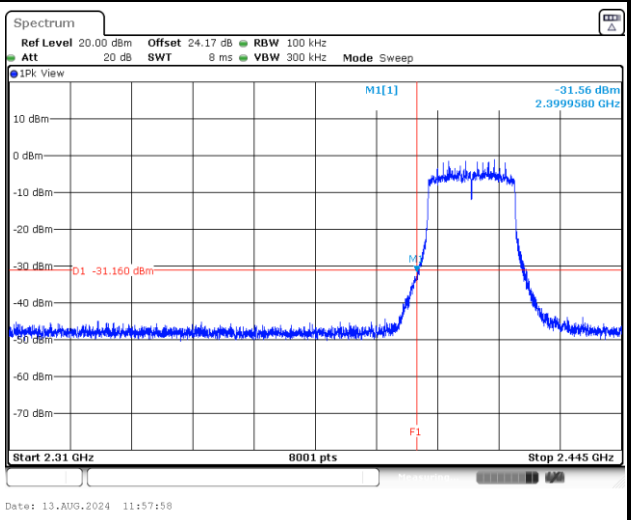
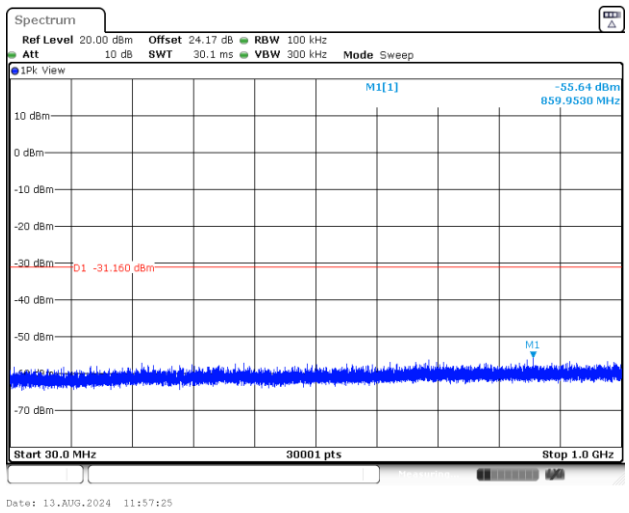
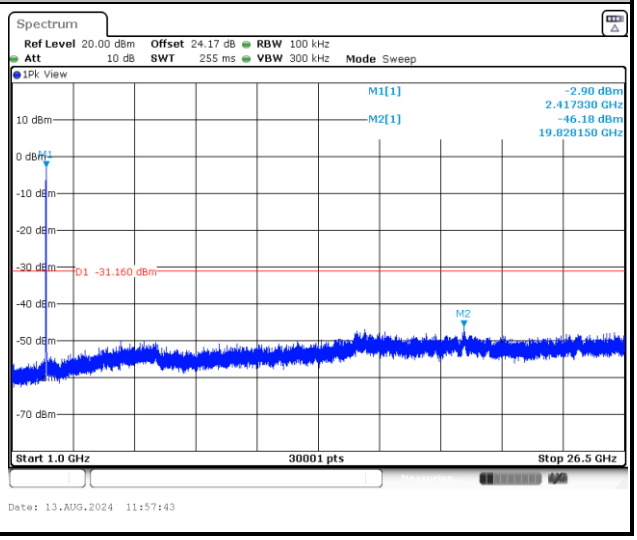
Spurious Emission 30MHz~1GHz	Spurious Emission 1GHz~26.5GHz
	

Test Mode :	802.11ax HE40_FullRU	Test Channel :	09

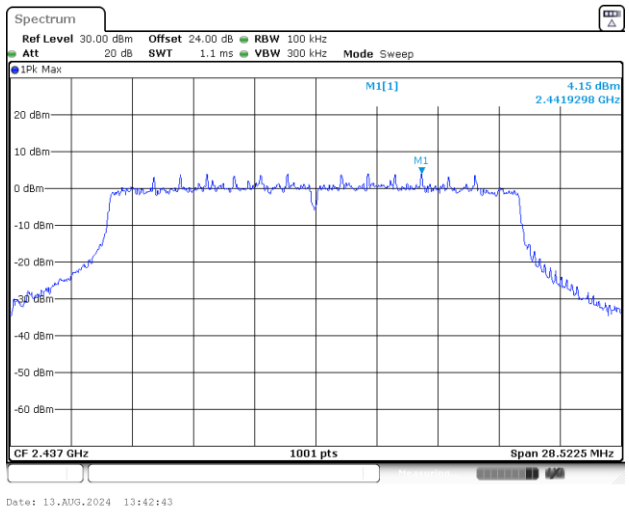
100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

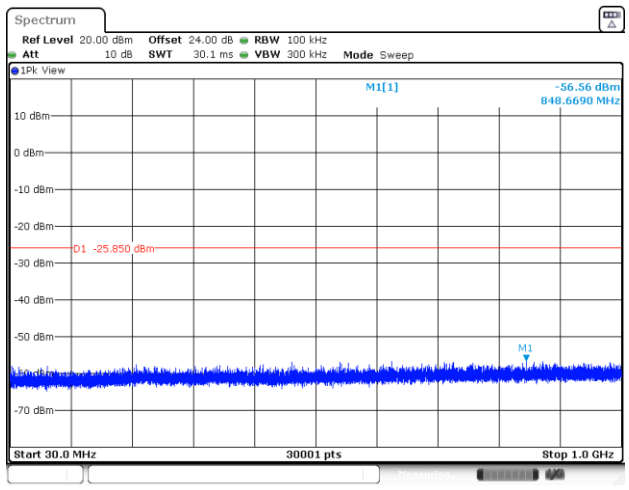
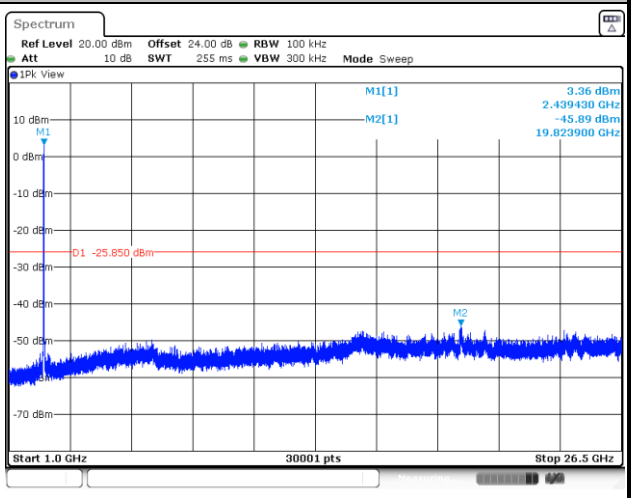
Number of TX = 2, Ant. 1 (Measured)

Test Mode :	802.11ax HE20_FullRU	Test Channel :	01

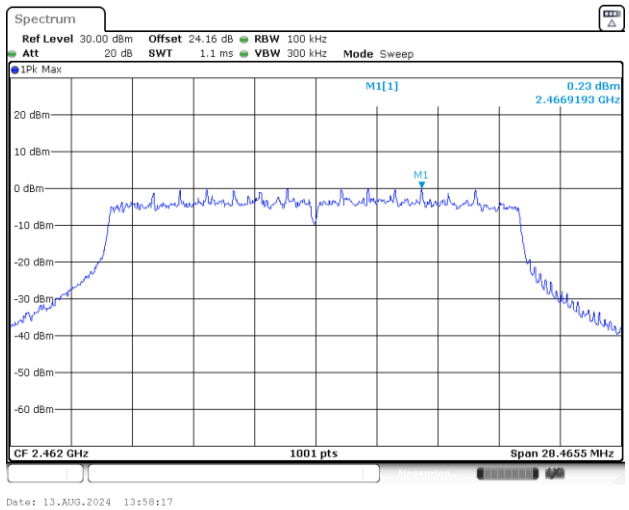
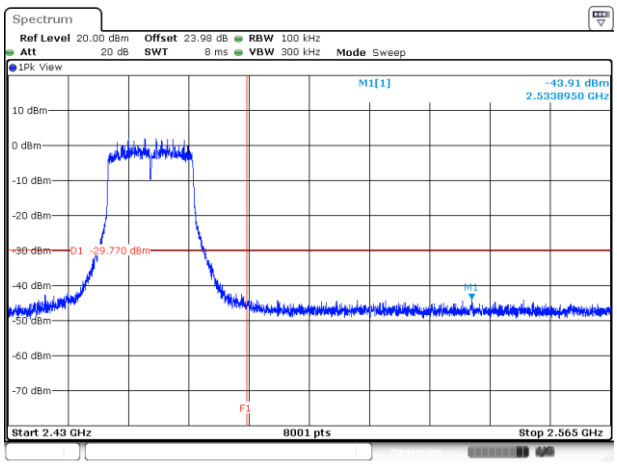
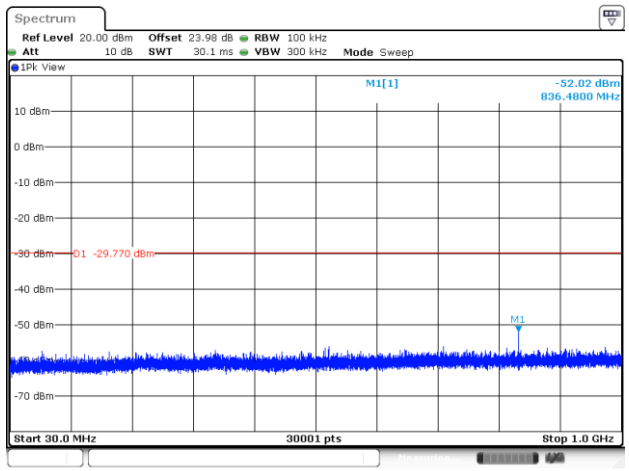
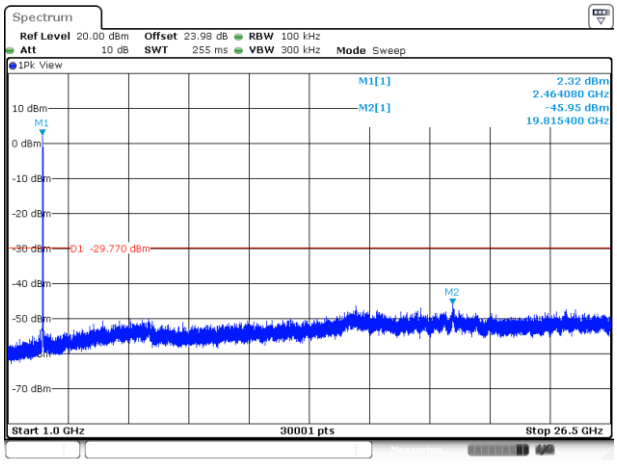
100kHz PSD reference Level	Low Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11ax HE20_FullRU	Test Channel :	06

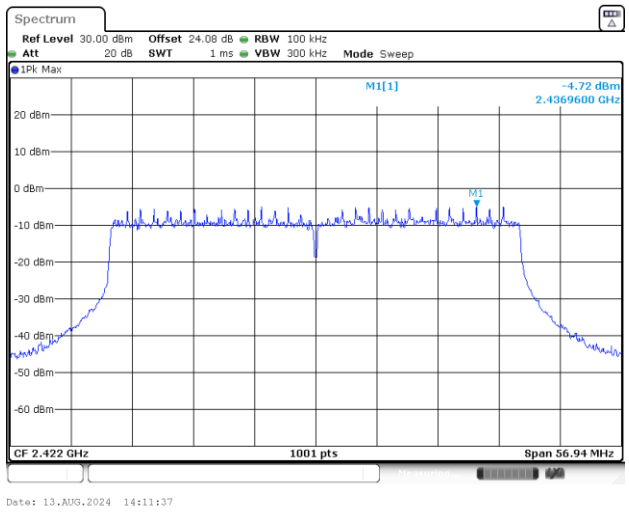
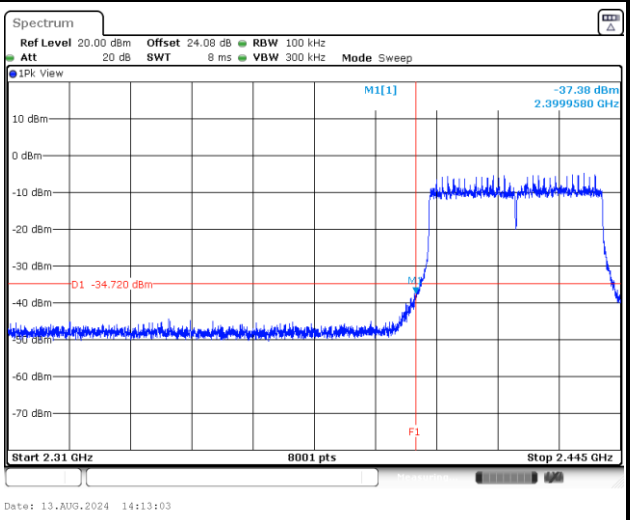
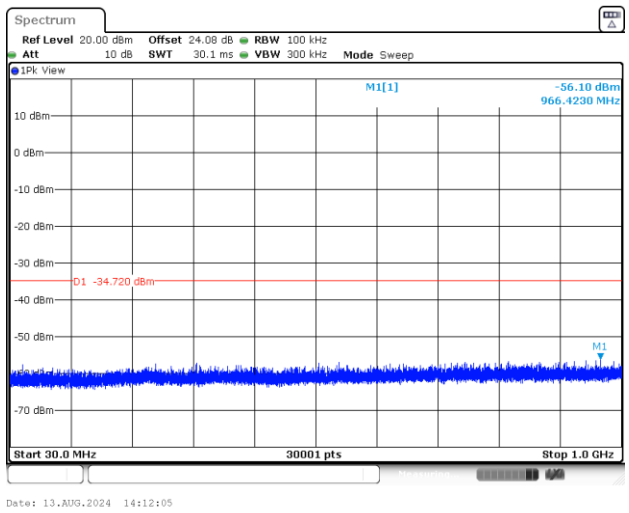
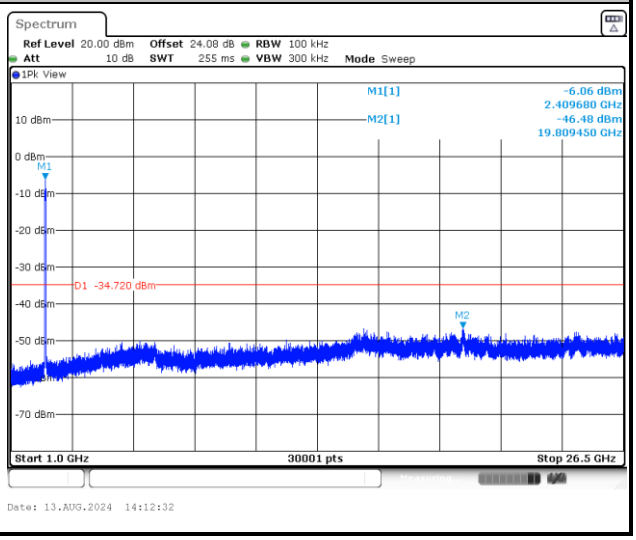
100kHz PSD reference Level	Middle Channel Plot
	

Spurious Emission 30MHz~1GHz	Spurious Emission 1GHz~26.5GHz
	

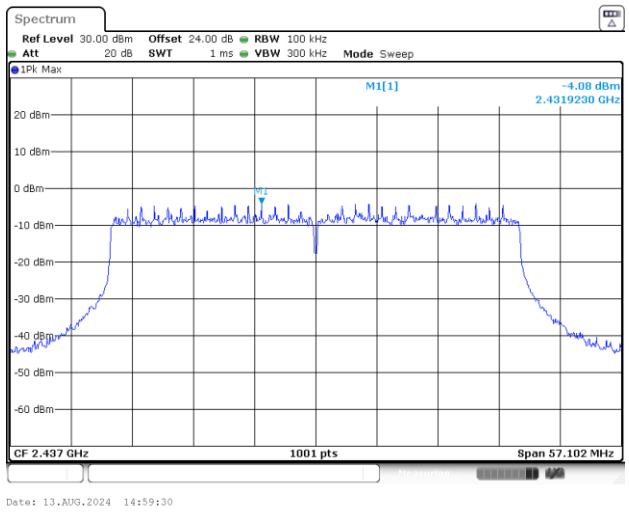
Test Mode :	802.11ax HE20_FullRU	Test Channel :	11

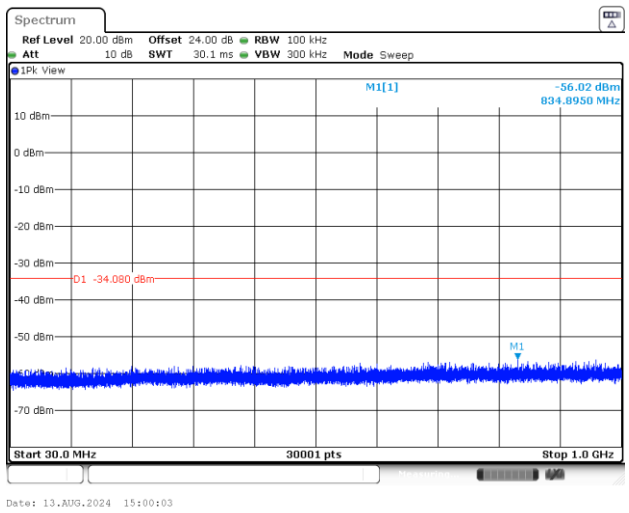
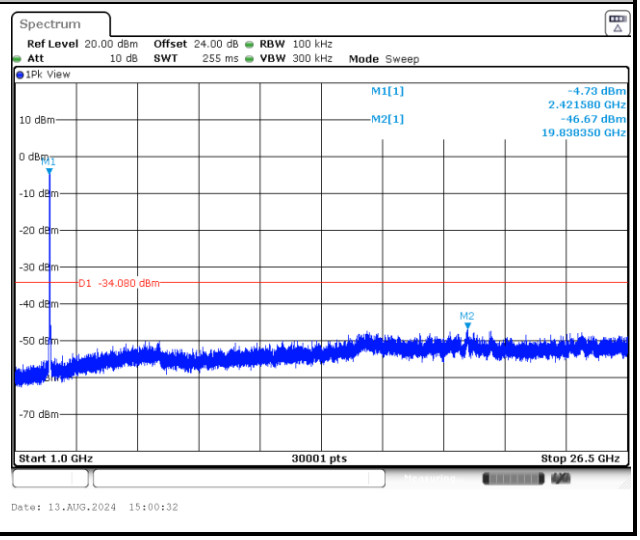
100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11ax HE40_FullRU	Test Channel :	03

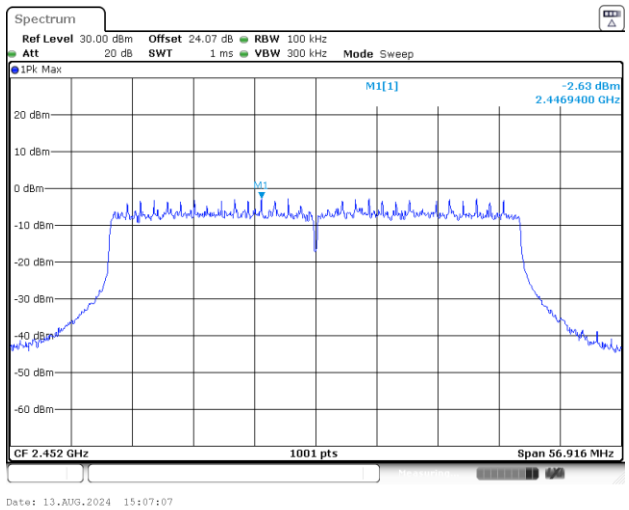
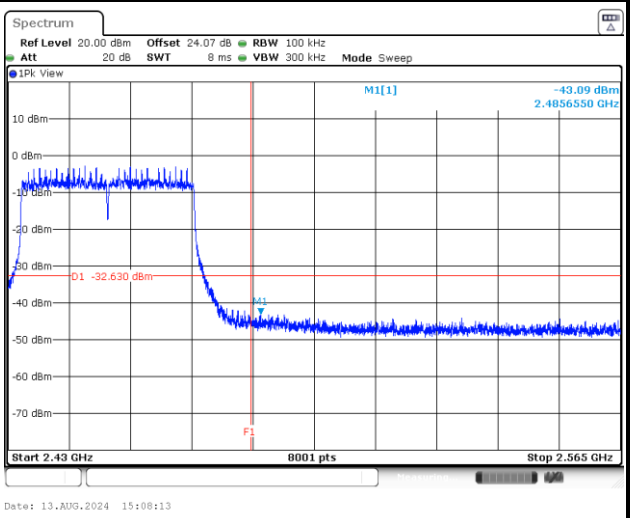
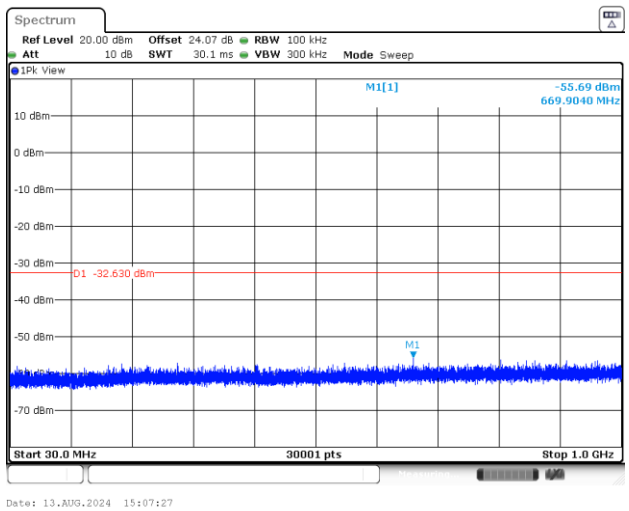
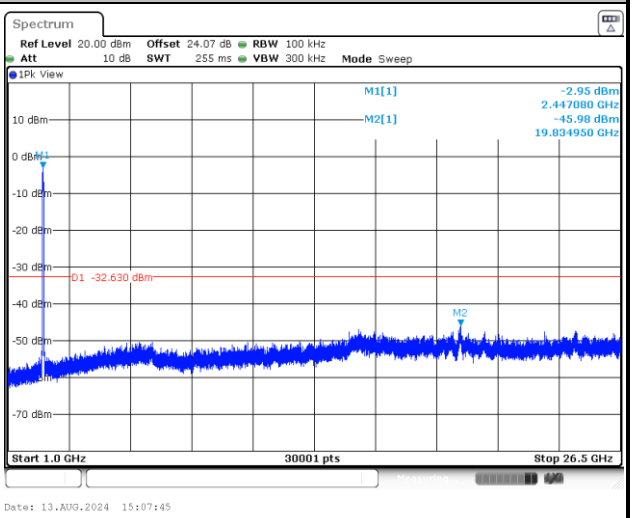
100kHz PSD reference Level	Low Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11ax HE40_FullRU	Test Channel :	06

100kHz PSD reference Level	Middle Channel Plot
	

Spurious Emission 30MHz~1GHz	Spurious Emission 1GHz~26.5GHz
	

Test Mode :	802.11ax HE40_FullRU	Test Channel :	09

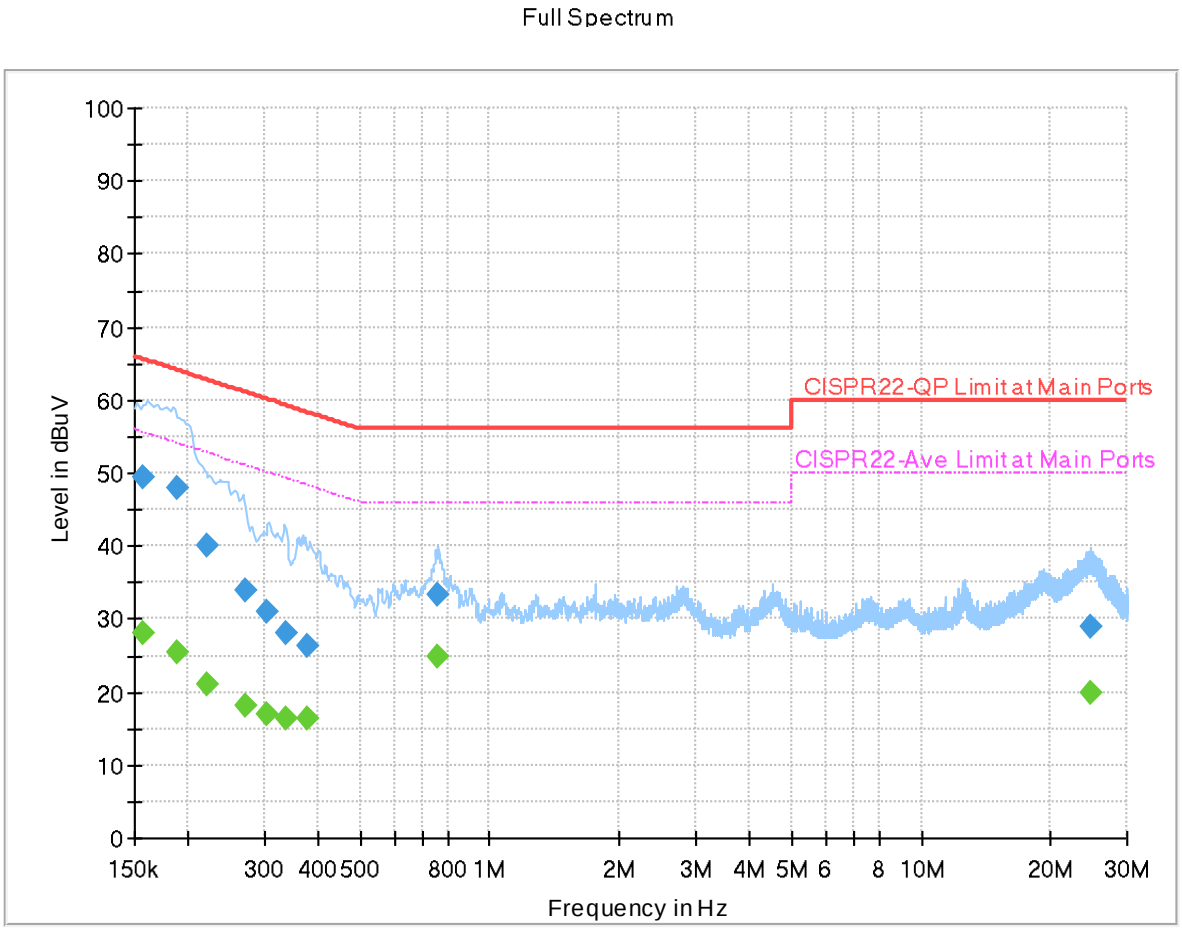
100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Appendix B. AC Conducted Emission Test Results

Test Engineer :	Louis Chung	**Temperature :**	23.5~26.7℃
		Relative Humidity :	52.2~57.9%

EUT Information

Report NO :	450901
Test Mode :	Mode 1
Test Voltage :	120Vac/60Hz
Phase :	Line



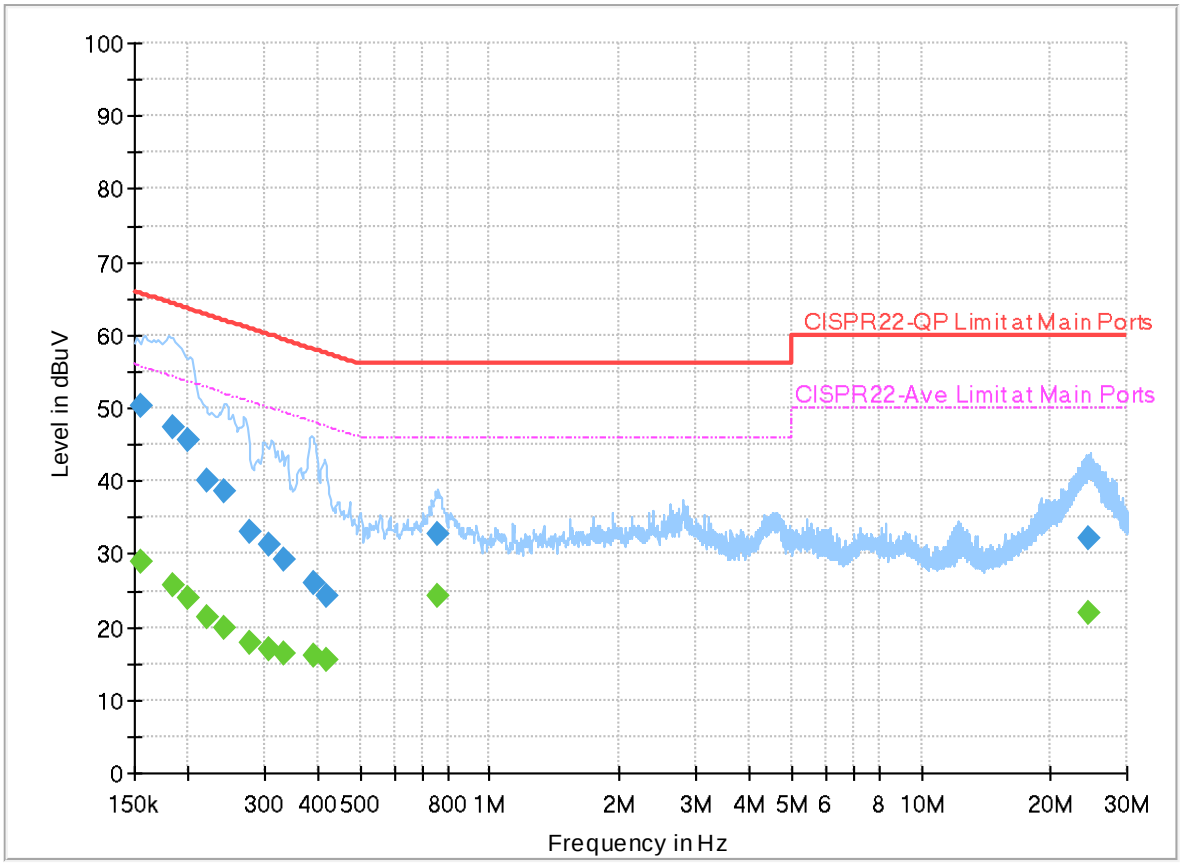
Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.156750	---	27.99	55.63	27.64	L1	OFF	19.9
0.156750	49.55	---	65.63	16.08	L1	OFF	19.9
0.188250	---	25.57	54.11	28.54	L1	OFF	19.9
0.188250	47.91	---	64.11	16.20	L1	OFF	19.9
0.221460	---	20.98	52.76	31.78	L1	OFF	19.9
0.221460	39.95	---	62.76	22.81	L1	OFF	19.9
0.270780	---	18.15	51.09	32.94	L1	OFF	19.9
0.270780	34.03	---	61.09	27.06	L1	OFF	19.9
0.304350	---	16.92	50.12	33.20	L1	OFF	19.9
0.304350	30.89	---	60.12	29.23	L1	OFF	19.9
0.336390	---	16.25	49.29	33.04	L1	OFF	19.9
0.336390	27.98	---	59.29	31.31	L1	OFF	19.9
0.379500	---	16.33	48.29	31.96	L1	OFF	19.9
0.379500	26.27	---	58.29	32.02	L1	OFF	19.9
0.757140	---	24.83	46.00	21.17	L1	OFF	19.9
0.757140	33.29	---	56.00	22.71	L1	OFF	19.9
24.778500	---	19.93	50.00	30.07	L1	OFF	20.2
24.778500	28.82	---	60.00	31.18	L1	OFF	20.2

EUT Information

Report NO :	450901
Test Mode :	Mode 1
Test Voltage :	120Vac/60Hz
Phase :	Neutral

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.154500	---	29.07	55.75	26.68	N	OFF	19.9
0.154500	50.28	---	65.75	15.47	N	OFF	19.9
0.183750	---	25.69	54.31	28.62	N	OFF	19.9
0.183750	47.49	---	64.31	16.82	N	OFF	19.9
0.199500	---	23.85	53.63	29.78	N	OFF	19.9
0.199500	45.55	---	63.63	18.08	N	OFF	19.9
0.221910	---	21.33	52.75	31.42	N	OFF	19.9
0.221910	40.10	---	62.75	22.65	N	OFF	19.9
0.242790	---	19.92	52.00	32.08	N	OFF	19.9
0.242790	38.51	---	62.00	23.49	N	OFF	19.9
0.276000	---	17.79	50.94	33.15	N	OFF	19.9
0.276000	33.02	---	60.94	27.92	N	OFF	19.9
0.307500	---	16.94	50.04	33.10	N	OFF	19.9
0.307500	31.21	---	60.04	28.83	N	OFF	19.9
0.334500	---	16.51	49.34	32.83	N	OFF	19.9
0.334500	29.20	---	59.34	30.14	N	OFF	19.9
0.389490	---	16.23	48.08	31.85	N	OFF	19.9
0.389490	26.03	---	58.08	32.05	N	OFF	19.9
0.420000	---	15.63	47.45	31.82	N	OFF	19.9

0.420000	**24.23**	**---**	**57.45**	**33.22**	**N**	**OFF**	**19.9**
0.755250	**---**	**24.26**	**46.00**	**21.74**	**N**	**OFF**	**19.9**
0.755250	**32.78**	**---**	**56.00**	**23.22**	**N**	**OFF**	**19.9**
24.400500	**---**	**21.92**	**50.00**	**28.08**	**N**	**OFF**	**20.2**
24.400500	**32.25**	**---**	**60.00**	**27.75**	**N**	**OFF**	**20.2**

Appendix C. Radiated Spurious Emission Test Data

Test Engineer :	Rain Lee, Jacky Hong, and Mancy Chou	**Temperature :**	20~26℃
		Relative Humidity :	40~65%

C1. Radiated Spurious Emission Test Modes

<Sample 1>

Mode	Band (MHz)	Antenna	Modulation	Channel	Frequency	Data Rate	RU	Remark
Mode 50	2400-2483.5	0	802.11b	1	2412	1Mbps	-	-
Mode 51	2400-2483.5	0	802.11b	1	2412	1Mbps	-	LF
Mode 52	2400-2483.5	0	802.11b	1	2412	1Mbps	-	SHF

<Sample 2>

Mode	Band (MHz)	Antenna	Modulation	Channel	Frequency	Data Rate	RU	Remark
Mode 51	2400-2483.5	0	802.11b	1	2412	1Mbps	-	-
Mode 52	2400-2483.5	0	802.11b	1	2412	1Mbps	-	LF
Mode 53	2400-2483.5	0	802.11b	1	2412	1Mbps	-	SHF

<Sample 7>

Mode	Band (MHz)	Antenna	Modulation	Channel	Frequency	Data Rate	RU	Remark
Mode 16	2400-2483.5	0	802.11b	01	2412	1Mbps	-	-
Mode 17	2400-2483.5	0	802.11b	06	2437	1Mbps	-	-
Mode 18	2400-2483.5	0	802.11b	11	2462	1Mbps	-	-
Mode 19	2400-2483.5	0	802.11g	01	2412	6Mbps	-	-
Mode 20	2400-2483.5	0	802.11g	02	2417	6Mbps	-	-
Mode 21	2400-2483.5	0	802.11g	03	2422	6Mbps	-	-
Mode 22	2400-2483.5	0	802.11g	04	2427	6Mbps	-	-
Mode 23	2400-2483.5	0	802.11g	06	2437	6Mbps	-	-
Mode 24	2400-2483.5	0	802.11g	10	2457	6Mbps	-	-
Mode 25	2400-2483.5	0	802.11g	11	2462	6Mbps	-	-
Mode 26	2400-2483.5	1	802.11b	01	2412	1Mbps	-	-
Mode 27	2400-2483.5	1	802.11b	02	2417	1Mbps	-	-

Mode	Band (MHz)	Antenna	Modulation	Channel	Frequency	Data Rate	RU	Remark
Mode 28	2400-2483.5	1	802.11b	06	2437	1Mbps	-	-
Mode 29	2400-2483.5	1	802.11b	11	2462	1Mbps	-	-
Mode 30	2400-2483.5	1	802.11g	01	2412	6Mbps	-	-
Mode 31	2400-2483.5	1	802.11g	02	2417	6Mbps	-	-
Mode 32	2400-2483.5	1	802.11g	03	2422	6Mbps	-	-
Mode 33	2400-2483.5	1	802.11g	04	2427	6Mbps	-	-
Mode 34	2400-2483.5	1	802.11g	05	2432	6Mbps	-	-
Mode 35	2400-2483.5	1	802.11g	06	2437	6Mbps	-	-
Mode 36	2400-2483.5	1	802.11g	10	2457	6Mbps	-	-
Mode 37	2400-2483.5	1	802.11g	11	2462	6Mbps	-	-
Mode 38	2400-2483.5	0+1	802.11ax HE20	01	2412	MCS0	Full RU	-
Mode 39	2400-2483.5	0+1	802.11ax HE20	02	2417	MCS0	Full RU	-
Mode 40	2400-2483.5	0+1	802.11ax HE20	03	2422	MCS0	Full RU	-
Mode 41	2400-2483.5	0+1	802.11ax HE20	04	2427	MCS0	Full RU	-
Mode 42	2400-2483.5	0+1	802.11ax HE20	06	2437	MCS0	Full RU	-
Mode 43	2400-2483.5	0+1	802.11ax HE20	10	2457	MCS0	Full RU	-
Mode 44	2400-2483.5	0+1	802.11ax HE20	11	2462	MCS0	Full RU	-
Mode 45	2400-2483.5	0+1	802.11ax HE40	03	2422	MCS0	Full RU	-
Mode 46	2400-2483.5	0+1	802.11ax HE40	06	2437	MCS0	Full RU	-
Mode 47	2400-2483.5	0+1	802.11ax HE40	09	2452	MCS0	Full RU	-
Mode 48	2400-2483.5	0+1	802.11n HT40	09	2452	MCS0	-	-
Mode 49	2400-2483.5	0	802.11b	01	2412	1Mbps	-	LF
Mode 50	2400-2483.5	0	802.11b	01	2412	1Mbps	-	SHF

<Sample 8>

Mode	Band (MHz)	Antenna	Modulation	Channel	Frequency	Data Rate	RU	Remark
Mode 63	2400-2483.5	0	802.11b	01	2412	1Mbps	-	-
Mode 64	2400-2483.5	0	802.11b	06	2437	1Mbps	-	-
Mode 65	2400-2483.5	0	802.11b	11	2462	1Mbps	-	-
Mode 66	2400-2483.5	0	802.11g	01	2412	6Mbps	-	-
Mode 67	2400-2483.5	0	802.11g	02	2417	6Mbps	-	-
Mode 68	2400-2483.5	0	802.11g	06	2437	6Mbps	-	-
Mode 69	2400-2483.5	0	802.11g	09	2452	6Mbps	-	-
Mode 70	2400-2483.5	0	802.11g	10	2457	6Mbps	-	-
Mode 71	2400-2483.5	0	802.11g	11	2462	6Mbps	-	-
Mode 72	2400-2483.5	1	802.11b	01	2412	1Mbps	-	-
Mode 73	2400-2483.5	1	802.11b	06	2437	1Mbps	-	-
Mode 74	2400-2483.5	1	802.11b	11	2462	1Mbps	-	-
Mode 75	2400-2483.5	1	802.11g	01	2412	6Mbps	-	-
Mode 76	2400-2483.5	1	802.11g	02	2417	6Mbps	-	-
Mode 77	2400-2483.5	1	802.11g	03	2422	6Mbps	-	-
Mode 78	2400-2483.5	1	802.11g	06	2437	6Mbps	-	-
Mode 79	2400-2483.5	1	802.11g	09	2452	6Mbps	-	-
Mode 80	2400-2483.5	1	802.11g	10	2457	6Mbps	-	-
Mode 81	2400-2483.5	1	802.11g	11	2462	6Mbps	-	-
Mode 82	2400-2483.5	0+1	802.11ax HE20	01	2412	MCS0	Full RU	-
Mode 83	2400-2483.5	0+1	802.11ax HE20	02	2417	MCS0	Full RU	-
Mode 84	2400-2483.5	0+1	802.11ax HE20	03	2422	MCS0	Full RU	-
Mode 85	2400-2483.5	0+1	802.11ax HE20	04	2427	MCS0	Full RU	-
Mode 86	2400-2483.5	0+1	802.11ax HE20	06	2437	MCS0	Full RU	-
Mode 87	2400-2483.5	0+1	802.11ax HE20	08	2447	MCS0	Full RU	-
Mode 88	2400-2483.5	0+1	802.11ax HE20	09	2452	MCS0	Full RU	-
Mode 89	2400-2483.5	0+1	802.11ax HE20	10	2457	MCS0	Full RU	-
Mode 90	2400-2483.5	0+1	802.11ax HE20	11	2462	MCS0	Full RU	-
Mode 91	2400-2483.5	0+1	802.11ax HE40	03	2422	MCS0	Full RU	-
Mode 92	2400-2483.5	0+1	802.11ax HE40	04	2427	MCS0	Full RU	-
Mode 93	2400-2483.5	0+1	802.11ax HE40	05	2432	MCS0	Full RU	-
Mode 94	2400-2483.5	0+1	802.11ax HE40	06	2437	MCS0	Full RU	-
Mode 95	2400-2483.5	0+1	802.11ax HE40	07	2442	MCS0	Full RU	-

Mode	Band (MHz)	Antenna	Modulation	Channel	Frequency	Data Rate	RU	Remark
Mode 96	2400-2483.5	0+1	802.11ax HE40	08	2447	MCS0	Full RU	-
Mode 97	2400-2483.5	0+1	802.11ax HE40	09	2452	MCS0	Full RU	-
Mode 98	2400-2483.5	0+1	802.11n HT40	09	2452	MCS0	-	-
Mode 99	2400-2483.5	0+1	802.11ax HE40	05	2432	MCS0	Full RU	LF
Mode 100	2400-2483.5	0+1	802.11ax HE40	05	2432	MCS0	Full RU	SHF

C2. Summary of each worse mode

<Sample 1>

Mode	Modulation	Ch.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pol.	Peak Avg.	Result	RU	Remark
50	802.11b	1	2386.83	40.08	54.00	-13.92	H	Avg.	Pass	-	Band Edge
	802.11b	1	2252.00	47.42	54.00	-6.58	H	Avg.	Pass	-	Harmonic
51	LF	1	30.00	39.56	40.00	-0.44	V	QP	Pass	-	LF
52	SHF	1	24714.66	40.18	74.00	-33.82	V	Peak	Pass	-	SHF

<Sample 2>

Mode	Modulation	Ch.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pol.	Peak Avg.	Result	RU	Remark
51	802.11b	1	2386.31	40.42	54.00	-13.58	H	Avg.	Pass	-	Band Edge
	802.11b	1	2252.00	50.72	54.00	-3.28	H	Avg.	Pass	-	Harmonic
52	LF	1	30.97	41.34	40.00	1.34	V	QP	Fail	-	LF
53	SHF	1	24518.12	40.68	74.00	-33.32	V	Peak	Pass	-	SHF

<Sample 7>

Mode	Modulation	Ch.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pol.	Peak Avg.	Result	RU	Remark
16	802.11b	01	2389.95	51.59	54.00	-2.41	H	Avg.	Pass	-	Band Edge
	802.11b	01	2252.00	53.58	54.00	-0.42	H	Avg.	Pass	-	Harmonic
17	802.11b	06	2389.88	43.54	54.00	-10.46	H	Avg.	Pass	-	Band Edge
	802.11b	06	2277.00	53.56	54.00	-0.44	H	Avg.	Pass	-	Harmonic
18	802.11b	11	2487.69	52.69	54.00	-1.31	H	Avg.	Pass	-	Band Edge
	802.11b	11	2300.00	53.09	54.00	-0.91	H	Avg.	Pass	-	Harmonic
19	802.11g	01	2389.95	52.50	54.00	-1.50	H	Avg.	Pass	-	Band Edge
	802.11g	01	2252.00	46.19	54.00	-7.81	H	Avg.	Pass	-	Harmonic
20	802.11g	02	2389.95	53.32	54.00	-0.68	H	Avg.	Pass	-	Band Edge
	802.11g	02	-	-	-	-	-	-	-	-	Harmonic
21	802.11g	03	2389.82	53.17	54.00	-0.83	H	Avg.	Pass	-	Band Edge
21	802.11g	03	-	-	-	-	-	-	-	-	Harmonic
22	802.11g	04	2389.95	53.15	54.00	-0.85	H	Avg.	Pass	-	Band Edge
22	802.11g	04	-	-	-	-	-	-	-	-	Harmonic

Mode	Modulation	Ch.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pol.	Peak Avg.	Result	RU	Remark
23	802.11g	06	2389.38	52.25	54.00	-1.75	H	Avg.	Pass	-	Band Edge
23	802.11g	06	2278.00	51.39	54.00	-2.61	H	Avg.	Pass	-	Harmonic
24	802.11g	10	2483.53	53.51	54.00	-0.49	H	Avg.	Pass	-	Band Edge
24	802.11g	10	-	-	-	-	-	-	-	-	Harmonic
25	802.11g	11	2483.51	52.18	54.00	-1.82	H	Avg.	Pass	-	Band Edge
25	802.11g	11	2300.00	46.85	54.00	-7.15	H	Avg.	Pass	-	Harmonic
26	802.11b	01	2389.95	51.93	54.00	-2.07	H	Avg.	Pass	-	Band Edge
26	802.11b	01	2252.00	50.01	54.00	-3.99	H	Avg.	Pass	-	Harmonic
27	802.11b	02	2389.95	53.47	54.00	-0.53	H	Avg.	Pass	-	Band Edge
27	802.11b	02	-	-	-	-	-	-	-	-	Harmonic
28	802.11b	06	2389.12	48.83	54.00	-5.17	H	Avg.	Pass	-	Band Edge
28	802.11b	06	2277.00	50.13	54.00	-3.87	H	Avg.	Pass	-	Harmonic
29	802.11b	11	2487.73	53.41	54.00	-0.59	H	Avg.	Pass	-	Band Edge
29	802.11b	11	2300.00	48.53	54.00	-5.47	H	Avg.	Pass	-	Harmonic
30	802.11g	01	2389.95	52.50	54.00	-1.50	H	Avg.	Pass	-	Band Edge
30	802.11g	01	2252.00	44.86	54.00	-9.14	H	Avg.	Pass	-	Harmonic
31	802.11g	02	2389.82	53.19	54.00	-0.81	H	Avg.	Pass	-	Band Edge
31	802.11g	02	-	-	-	-	-	-	-	-	Harmonic
32	802.11g	03	2389.95	52.45	54.00	-1.55	H	Avg.	Pass	-	Band Edge
32	802.11g	03	-	-	-	-	-	-	-	-	Harmonic
33	802.11g	04	2389.95	51.97	54.00	-2.03	H	Avg.	Pass	-	Band Edge
33	802.11g	04	-	-	-	-	-	-	-	-	Harmonic
34	802.11g	05	2389.82	52.29	54.00	-1.71	H	Avg.	Pass	-	Band Edge
34	802.11g	05	-	-	-	-	-	-	-	-	Harmonic
35	802.11g	06	2389.50	51.35	54.00	-2.65	H	Avg.	Pass	-	Band Edge
35	802.11g	06	2277.00	49.30	54.00	-4.70	H	Avg.	Pass	-	Harmonic
36	802.11g	10	2483.57	53.05	54.00	-0.95	H	Avg.	Pass	-	Band Edge
36	802.11g	10	-	-	-	-	-	-	-	-	Harmonic
37	802.11g	11	2483.51	53.09	54.00	-0.91	H	Avg.	Pass	-	Band Edge
37	802.11g	11	2302.00	45.48	54.00	-8.52	H	Avg.	Pass	-	Harmonic
38	802.11ax HE20	01	2389.95	52.87	54.00	-1.13	H	Avg.	Pass	Full RU	Band Edge
38	802.11ax HE20	01	2252.00	45.80	54.00	-8.20	H	Avg.	Pass	Full RU	Harmonic

Mode	Modulation	Ch.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pol.	Peak Avg.	Result	RU	Remark
39	802.11ax HE20	02	2389.82	52.14	54.00	-1.86	H	Avg.	Pass	Full RU	Band Edge
39	802.11ax HE20	02	-	-	-	-	-	-	-	Full RU	Harmonic
40	802.11ax HE20	03	2389.82	53.00	54.00	-1.00	H	Avg.	Pass	Full RU	Band Edge
40	802.11ax HE20	03	-	-	-	-	-	-	-	Full RU	Harmonic
41	802.11ax HE20	04	2389.95	52.94	54.00	-1.06	H	Avg.	Pass	Full RU	Band Edge
41	802.11ax HE20	04	-	-	-	-	-	-	-	Full RU	Harmonic
42	802.11ax HE20	06	2388.99	51.87	54.00	-2.13	H	Avg.	Pass	Full RU	Band Edge
42	802.11ax HE20	06	2277.00	51.14	54.00	-2.86	H	Avg.	Pass	Full RU	Harmonic
43	802.11ax HE20	10	2483.96	52.86	54.00	-1.14	H	Avg.	Pass	Full RU	Band Edge
43	802.11ax HE20	10	-	-	-	-	-	-	-	Full RU	Harmonic
44	802.11ax HE20	11	2483.51	53.01	54.00	-0.99	H	Avg.	Pass	Full RU	Band Edge
44	802.11ax HE20	11	2300.00	46.21	54.00	-7.79	H	Avg.	Pass	Full RU	Harmonic
45	802.11ax HE40	03	2388.96	53.20	54.00	-0.80	H	Avg.	Pass	Full RU	Band Edge
45	802.11ax HE40	03	2262.00	46.31	54.00	-7.69	H	Avg.	Pass	Full RU	Harmonic
46	802.11ax HE40	06	2389.88	53.14	54.00	-0.86	H	Avg.	Pass	Full RU	Band Edge
46	802.11ax HE40	06	2277.00	44.56	54.00	-9.44	H	Avg.	Pass	Full RU	Harmonic
47	802.11ax HE40	09	2489.30	53.54	54.00	-0.46	H	Avg.	Pass	Full RU	Band Edge
47	802.11ax HE40	09	2292.00	43.33	54.00	-10.67	H	Avg.	Pass	Full RU	Harmonic
48	802.11n HT40	09	2489.30	52.56	54.00	-1.44	H	Avg.	Pass	-	Band Edge
48	802.11n HT40	09	2292.00	43.14	54.00	-10.86	H	Avg.	Pass	-	Harmonic
49	LF	01	731.31	39.31	46.00	-6.69	V	Peak	Pass	-	LF
50	SHF	01	24066.90	39.48	74.00	-34.52	V	Peak	Pass	-	SHF

<Sample 8>

Mode	Modulation	Ch.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pol.	Peak Avg.	Result	RU	Remark
63	802.11b	01	2386.18	52.63	54.00	-1.37	H	Avg.	Pass	-	Band Edge
	802.11b	01	2252.00	49.87	54.00	-4.13	H	Avg.	Pass	-	Harmonic
64	802.11b	06	2484.75	45.50	54.00	-8.50	H	Avg.	Pass	-	Band Edge
	802.11b	06	2277.00	52.37	54.00	-1.63	H	Avg.	Pass	-	Harmonic
65	802.11b	11	2487.73	52.38	54.00	-1.62	H	Avg.	Pass	-	Band Edge
	802.11b	11	2302.00	50.01	54.00	-3.99	H	Avg.	Pass	-	Harmonic
66	802.11g	01	2389.95	53.33	54.00	-0.67	H	Avg.	Pass	-	Band Edge
	802.11g	01	2252.00	45.50	54.00	-8.50	H	Avg.	Pass	-	Harmonic
67	802.11g	02	2389.95	53.76	54.00	-0.24	H	Avg.	Pass	-	Band Edge
	802.11g	02	-	-	-	-	-	-	-	-	Harmonic
68	802.11g	06	2483.62	47.60	54.00	-6.40	H	Avg.	Pass	-	Band Edge
68	802.11g	06	2277.00	49.52	54.00	-4.48	H	Avg.	Pass	-	Harmonic
69	802.11g	09	2483.58	53.64	54.00	-0.36	H	Avg.	Pass	-	Band Edge
69	802.11g	09	-	-	-	-	-	-	-	-	Harmonic
70	802.11g	10	2483.70	53.45	54.00	-0.55	H	Avg.	Pass	-	Band Edge
70	802.11g	10	-	-	-	-	-	-	-	-	Harmonic
71	802.11g	11	2483.51	53.18	54.00	-0.82	H	Avg.	Pass	-	Band Edge
71	802.11g	11	2300.00	47.22	54.00	-6.78	H	Avg.	Pass	-	Harmonic
72	802.11b	01	2386.05	50.36	54.00	-3.64	H	Avg.	Pass	-	Band Edge
72	802.11b	01	2252.00	48.76	54.00	-5.24	H	Avg.	Pass	-	Harmonic
73	802.11b	06	2353.94	44.56	54.00	-9.44	H	Avg.	Pass	-	Band Edge
73	802.11b	06	2277.00	53.24	54.00	-0.76	H	Avg.	Pass	-	Harmonic
74	802.11b	11	2487.54	51.93	54.00	-2.07	H	Avg.	Pass	-	Band Edge
74	802.11b	11	2302.00	53.50	54.00	-0.50	H	Avg.	Pass	-	Harmonic
75	802.11g	01	2389.95	52.42	54.00	-1.58	H	Avg.	Pass	-	Band Edge
75	802.11g	01	2252.00	47.88	54.00	-6.12	H	Avg.	Pass	-	Harmonic
76	802.11g	02	2389.69	53.10	54.00	-0.90	H	Avg.	Pass	-	Band Edge
76	802.11g	02	-	-	-	-	-	-	-	-	Harmonic
77	802.11g	03	2389.95	52.49	54.00	-1.51	H	Avg.	Pass	-	Band Edge
77	802.11g	03	-	-	-	-	-	-	-	-	Harmonic
78	802.11g	06	2389.88	47.78	54.00	-6.22	H	Avg.	Pass	-	Band Edge
78	802.11g	06	2277.00	50.92	54.00	-3.08	H	Avg.	Pass	-	Harmonic

Mode	Modulation	Ch.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pol.	Peak Avg.	Result	RU	Remark
79	802.11g	09	2483.63	53.13	54.00	-0.87	H	Avg.	Pass	-	Band Edge
79	802.11g	09	-	-	-	-	-	-	-	-	Harmonic
80	802.11g	10	2483.57	52.93	54.00	-1.07	H	Avg.	Pass	-	Band Edge
80	802.11g	10	-	-	-	-	-	-	-	-	Harmonic
81	802.11g	11	2483.55	53.29	54.00	-0.71	H	Avg.	Pass	-	Band Edge
81	802.11g	11	2300.00	48.93	54.00	-5.07	H	Avg.	Pass	-	Harmonic
82	802.11ax HE20	01	2389.82	52.22	54.00	-1.78	H	Avg.	Pass	Full RU	Band Edge
82	802.11ax HE20	01	2252.00	47.52	54.00	-6.48	H	Avg.	Pass	Full RU	Harmonic
83	802.11ax HE20	02	2389.95	51.96	54.00	-2.04	H	Avg.	Pass	Full RU	Band Edge
83	802.11ax HE20	02	-	-	-	-	-	-	-	Full RU	Harmonic
84	802.11ax HE20	03	2389.82	51.87	54.00	-2.13	H	Avg.	Pass	Full RU	Band Edge
84	802.11ax HE20	03	-	-	-	-	-	-	-	Full RU	Harmonic
85	802.11ax HE20	04	2389.95	53.19	54.00	-0.81	H	Avg.	Pass	Full RU	Band Edge
85	802.11ax HE20	04	-	-	-	-	-	-	-	Full RU	Harmonic
86	802.11ax HE20	06	2389.25	48.48	54.00	-5.52	H	Avg.	Pass	Full RU	Band Edge
86	802.11ax HE20	06	2277.00	53.36	54.00	-0.64	H	Avg.	Pass	Full RU	Harmonic
87	802.11ax HE20	08	2483.89	53.10	54.00	-0.90	H	Avg.	Pass	Full RU	Band Edge
87	802.11ax HE20	08	-	-	-	-	-	-	-	Full RU	Harmonic
88	802.11ax HE20	09	2483.68	53.61	54.00	-0.39	H	Avg.	Pass	Full RU	Band Edge
88	802.11ax HE20	09	-	-	-	-	-	-	-	Full RU	Harmonic
89	802.11ax HE20	10	2483.70	53.29	54.00	-0.71	H	Avg.	Pass	Full RU	Band Edge
89	802.11ax HE20	10	-	-	-	-	-	-	-	Full RU	Harmonic
90	802.11ax HE20	11	2483.52	53.17	54.00	-0.83	H	Avg.	Pass	Full RU	Band Edge
90	802.11ax HE20	11	2300.00	46.04	54.00	-7.96	H	Avg.	Pass	Full RU	Harmonic
91	802.11ax HE40	03	2387.95	52.82	54.00	-1.18	H	Avg.	Pass	Full RU	Band Edge
91	802.11ax HE40	03	2262.00	43.94	54.00	-10.06	H	Avg.	Pass	Full RU	Harmonic
92	802.11ax HE40	04	2389.33	53.82	54.00	-0.18	H	Avg.	Pass	Full RU	Band Edge
92	802.11ax HE40	04	-	-	-	-	-	-	-	Full RU	Harmonic
93	802.11ax HE40	05	2389.18	53.90	54.00	-0.10	H	Avg.	Pass	Full RU	Band Edge
93	802.11ax HE40	05	-	-	-	-	-	-	-	Full RU	Harmonic
94	802.11ax HE40	06	2389.88	53.32	54.00	-0.68	H	Avg.	Pass	Full RU	Band Edge
94	802.11ax HE40	06	2277.00	48.04	54.00	-5.96	H	Avg.	Pass	Full RU	Harmonic

Mode	Modulation	Ch.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pol.	Peak Avg.	Result	RU	Remark
95	802.11ax HE40	07	2485.04	53.01	54.00	-0.99	H	Avg.	Pass	Full RU	Band Edge
95	802.11ax HE40	07	-	-	-	-	-	-	-	Full RU	Harmonic
96	802.11ax HE40	08	2484.31	53.59	54.00	-0.41	H	Avg.	Pass	Full RU	Band Edge
96	802.11ax HE40	08	-	-	-	-	-	-	-	Full RU	Harmonic
97	802.11ax HE40	09	2486.85	53.54	54.00	-0.46	H	Avg.	Pass	Full RU	Band Edge
97	802.11ax HE40	09	2292.00	43.99	54.00	-10.01	H	Avg.	Pass	Full RU	Harmonic
98	802.11n HT40	09	2489.39	53.14	54.00	-0.86	H	Avg.	Pass	-	Band Edge
98	802.11n HT40	09	2292.00	44.24	54.00	-9.76	H	Avg.	Pass	-	Harmonic
99	LF	05	730.34	39.74	46.00	-6.26	V	Peak	Pass	-	LF
100	SHF	05	24648.94	40.34	74.00	-33.66	H	Peak	Pass	-	SHF