FCC RADIO TEST REPORT

FCC ID	:	**2ATQRSMODBV3**
Equipment	:	**SkydioLink Third Generation Radio Module**
Brand Name	:	**Skydio**
Model Name	:	**SMODBV3**
Applicant	:	**Skydio, Inc.** **3000 Clearview Way San Mateo, CA 94402**
Manufacturer	:	**Skydio, Inc.** **3000 Clearview Way San Mateo, CA 94402**
Standard	:	**FCC PART 15 Subpart C §15.247**

The product was received on Mar. 03, 2023 and testing was performed from May 25, 2023 to Jun. 07, 2023. We, Sporton International (USA) Inc., 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 (USA) Inc., the test report shall not be reproduced except in full.

Approved by: David Hung

Sporton International (USA) Inc.

1175 Montague Expressway, Milpitas, CA 95035

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History of this test report

Report No.	Version	Description	Issue Date
FR230303001A	01	Initial issue of report	Jun. 23, 2023
FR230303001A	02	1. Revise Antenna Directional Gain, appendix C, appendix D and appendix E 2. Add Test mode remark 3 3. This report is an updated version, replacing the report issued on Jun. 23, 2023.	Aug. 08, 2023

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	Reporting only	-
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	0.12 dB under the limit at 2483.52 MHz for Low Gain Antenna 0.20 dB under the limit at 2483.50 MHz for High Gain Antenna
3.6	15.207	AC Conducted Emission	Pass	16.51 dB under the limit at 0.79 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:

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.

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature
General Specs Wi-Fi 2.4GHz 802.11g/n/ac/ax, Wi-Fi 5GHz 802.11a/n/ac/ax. **Antenna Type** WLAN: Dipole Antenna Antenna 0: 2.4GHz/5GHz band Tx/Rx Antenna 1: Rx only Antenna 2: 2.4GHz/5GHz band Tx/Rx Antenna 3: Rx only **FW version:** P2GoldenSPC_ver1.1.0 **HW version:** 360-207231-000-3

Antenna information (Low Gain Antenna)		
Type	Dipole Antenna	
Model	360-205976-000	
2400 MHz ~ 2483.5 MHz	Peak Gain (dBi)	Ant. 0: 1.91 Ant. 2: 1.90

Antenna information (High Gain Antenna)		
Type	Dipole Antenna	
Model	360-208447-000	
2400 MHz ~ 2483.5 MHz	Peak Gain (dBi)	Ant. 0: 4.57 Ant. 2: 4.62

Remark:

1. This device is a software define radio (SDR), in which the operation modes can be configured to work as a master or a slave while integrated into specific hosts.
2. The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.

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,

Directional gain = $10*\log[(10^{G1/10} + 10^{G2/10} + \ldots + 10^{GN/10}) / N_{ANT}]$ dBi

Where G1, G2….GN denote single antenna gain

For PSD measurements, the directional gain calculation.

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

where

Each antenna is driven by no more than one spatial stream;
N_{SS} = the number of independent spatial streams of data;
N_{ANT} = the total number of antennas
$g_{j,k} = 10^{G_k/20}$ if the kth antenna is being fed by spatial stream j, or zero if it is not;
G_k is the gain in dBi of the kth antenna.

As minimum N_{SS}=1 is supported by EUT, the formula can be simplified as:

Directional gain = $10*\log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2 / N_{ANT}]$ dBi

Where G1, G2….GN denote single antenna gain.

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

<Low Gain Antenna>

	Ant 0 (dBi)	Ant 2 (dBi)	DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
2.4GHz	1.91	1.90	1.91	4.92	0.00	0.00

Calculation example:

If a device has two antenna, G_{ANT1}= 1.91dBi; G_{ANT2}=1.90dBi

Directional gain of power measurement is derived from following formula:

10 x log { [10^(1.91/10) + 10^(1.90/10)] / 2 } = 1.91 dBi

Directional gain of PSD is derived from following formula:

10 x log { { [10^ (1.91 dBi / 20) + 10^ (1.90 dBi / 20)] ^ 2 } / 2 }

= 4.92 dBi

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

<High Gain Antenna>

	Ant 0 (dBi)	Ant 2 (dBi)	DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
2.4GHz	4.57	4.62	4.60	7.61	0.00	1.61

Calculation example:

If a device has two antenna, G_{ANT1}= 4.57dBi; G_{ANT2}=4.62dBi

Directional gain of power measurement is derived from following formula:

10 x log { [10^(4.57/10) + 10^(4.62/10)] / 2 } = 4.60 dBi

Directional gain of PSD is derived from following formula:

10 x log { { [10^ (4.57 dBi / 20) + 10^ (4.62 dBi / 20)] ^ 2 } / 2 }

= 7.61 dBi

Power and PSD limit reduction = Directional gain – 6dBi, (min = 0)

<For STBC Mode>

In STBC mode all transmit signals are completely uncorrelated.

Following FCC KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)d)ii), if all transmit signals are completely uncorrelated, then

Directional gain = $10*\log[(10^{G1/10} + 10^{G2/10} + \ldots + 10^{GN/10}) / N_{ANT}]$ dBi

The directional gain "DG" is calculated as following table.

<Low Gain Antenna>

	Ant. 0 (dBi)	Ant. 2 (dBi)	DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
2.4 GHz	1.91	1.90	1.91	1.91	0.00	0.00

Calculation example:

If a device has two antenna, G_{ANT1}= 1.91dBi; G_{ANT2}=1.90dBi

Directional gain of power and PSD measurement is derived from following formula:

10 x log { [10^(1.91/10) + 10^(1.91/10)] / 2 } = 1.91 dBi

<High Gain Antenna>

	Ant. 0 (dBi)	Ant. 2 (dBi)	DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
2.4 GHz	4.57	4.62	4.60	4.60	0.00	0.00

Calculation example:

If a device has two antenna, G_{ANT1}= 4.57dBi; G_{ANT2}=4.62dBi

Directional gain of power and PSD measurement is derived from following formula:

10 x log { [10^(4.57/10) + 10^(4.62/10)] / 2 } = 4.60 dBi

1.2 Modification of EUT

No modifications made to the EUT during the testing.

1.3 Testing Location

Test Site	Sporton International (USA) Inc.
Test Site Location	1175 Montague Expressway, Milpitas, CA 95035 TEL : 408 9043300
Test Site No.	**Sporton Site No.**
	TH01-CA, CO01-CA, 03CH02-CA

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

FCC designation No.: US 1250

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. 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) for High Gain Antenna, and two config (Ant. Degree 0 and Ant. Degree 90) for Low Gain Antenna, 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

<For 802.11g/n/ax HE20 Full RU Mode and 802.11ax HE20 Single RU Mode>

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		

<For 802.11ax HE10 Full RU, 802.11ax HE10 Single RU Mode>

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	0	2407	7	2442
	1	2412	8	2447
	2	2417	9	2452
	3	2422	10	2457
	4	2427	11	2462
	5	2432	12	2467
	6	2437	13	2472

<802.11ax HE5 Full RU Mode>

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	0	2407	7	2442
	0.5	2409.5	7.5	2444.5
	1	2412	8	2447
	1.5	2414.5	8.5	2449.5
	2	2417	9	2452
	2.5	2419.5	9.5	2454.5
	3	2422	10	2457
	3.5	2424.5	10.5	2459.5
	4	2427	11	2462
	4.5	2429.5	11.5	2464.5
	5	2432	12	2467
	5.5	2434.5	12.5	2469.5
	6	2437	13	2472
	6.5	2439.5		

2.2 Test Mode

The SISO mode conducted power is covered by MIMO mode per chain, so only the MIMO mode is tested.

The power for 802.11n and 802.11ac mode is smaller than 802.11ax HE20 Full RU mode, so all other conducted and radiated test is covered by 802.11ax HE20 Full RU mode.

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

MIMO Mode

Mode			Date Rate
802.11g	**-**	**-**	**6Mbps**
802.11n HT20 (Covered by HE20)	**-**	**-**	**MCS0**
802.11ac VHT20 (Covered by HE20)	**-**	**-**	**MCS0**
802.11ax mode	**HE20**	**Full RU**	**MCS0**
802.11ax 1/2 BW mode	**HE10**	**Full RU**	**MCS0**
802.11ax 1/4 BW mode	**HE5**	**Full RU**	**MCS0**
802.11ax mode	**HE20**	**Single RU**	**MCS0**
802.11ax 1/2 BW mode	**HE10**	**Single RU**	**MCS0**

Remark:

1. The conducted power level of each chain in MIMO mode is equal or higher than SISO mode.
2. 802.11g is operating in CDD mode, whereas 802.11n, 802.11ac, 802.11ax are operating in STBC mode.
3. After assessment on conducted power, CSD mode is covered by CDD mode.

Test Cases	
AC Conducted Emission	Mode 1 :EUT with low gain antenna + WLAN (2.4GHz) Link + Type C-USB Cable (Charging from Adapter) Mode 2 :EUT with low gain antenna + WLAN (5GHz) Link + Type C-USB Cable (Charging from Adapter) Mode 3 :EUT with high gain antenna + WLAN (2.4GHz) Link + Type C-USB Cable (Charging from Adapter) Mode 4 :EUT with high gain antenna + WLAN (5GHz) Link + Type C-USB Cable (Charging from Adapter)
Remark: The worst case of Conducted Emission is mode 2; only the test data of it was reported.	

<CDD Mode>

Ch. #	2400-2483.5 MHz
	802.11g
Low	01
	02
	03
Middle	06
High	08
	09
	10
	11

<STBC Mode>

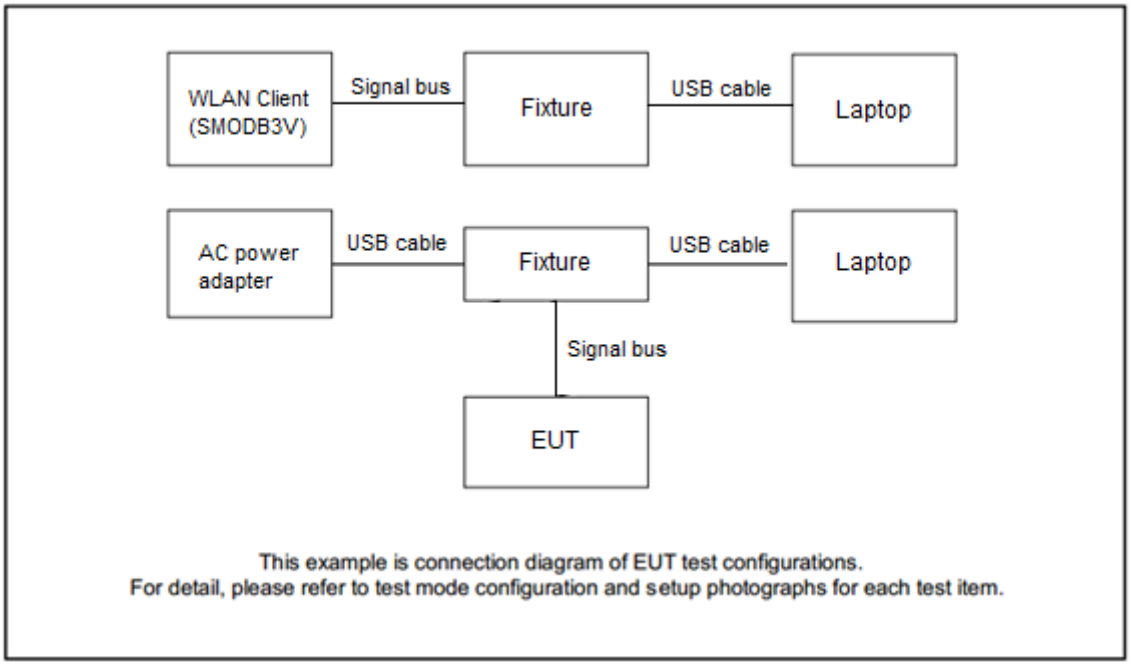
Ch. #	2400-2483.5 MHz	
	802.11ax HE20 Full RU	802.11ax HE20 Single RU
Low	01	01
	02	
	03	02
Middle	06	06
High	09	09
	10	10
	11	11

Ch. #	2400-2483.5 MHz		
	802.11ax HE10 Full RU	802.11ax HE5 Full RU	802.11ax HE10 Single RU
Low	00	00	00
	01	0.5	01
	02		
Middle	06	06	06
High	10	12	11
	11		
	12	12.5	12
	13	13	13

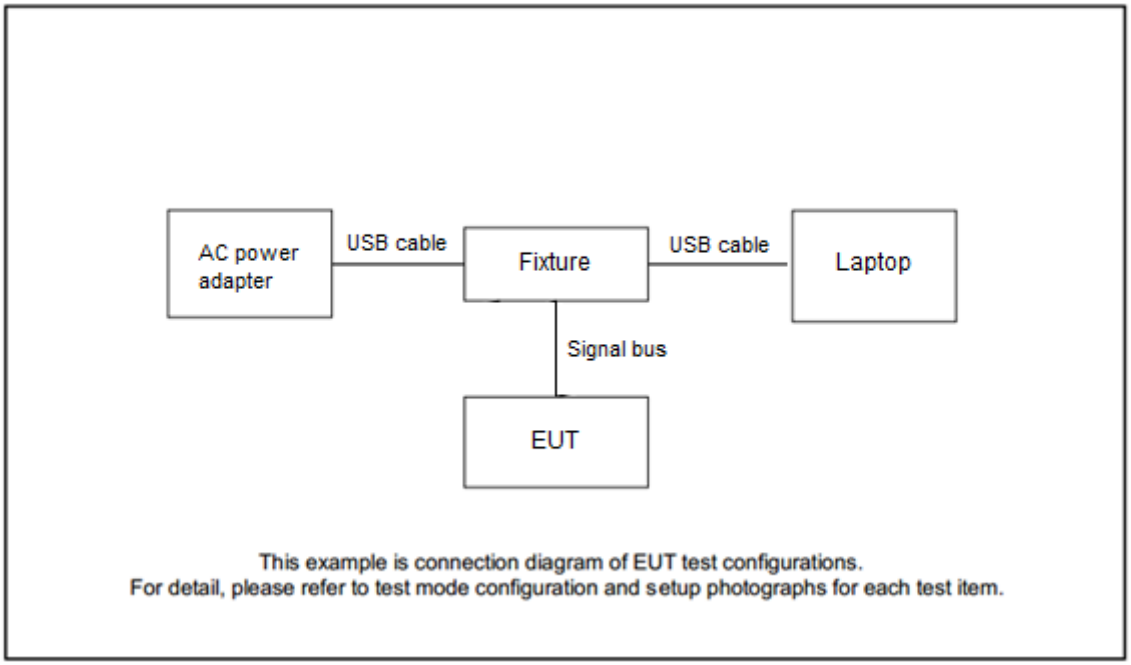
Remark: For radiation spurious emission, the modulation and the data rate picked for testing are determined by the Max. RF conducted power.

2.3 Connection Diagram of Test System

<AC Conducted Emission Mode>



<WLAN Tx Mode>



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Notebook	DELL	P91F	PD9AX201D2	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
2.	Notebook	DELL	P61G	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
3.	Notebook	Acer	N18Q13	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	Adapter	Google	G9BR1	NA	NA	NA
5.	Fixture	Skydio	J1701	NA	NA	NA
6.	Type C-USB cable	NA	NA	NA	Unshielded 1.5m	NA

2.5 EUT Operation Test Setup

The RF test items, utility “QSPR Version 5.0-00202” 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.

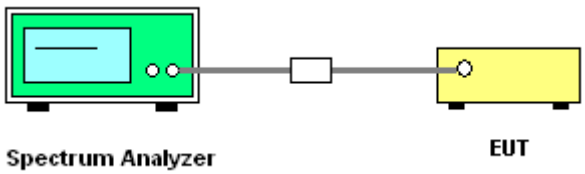
3.1.2 Measuring Instruments

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

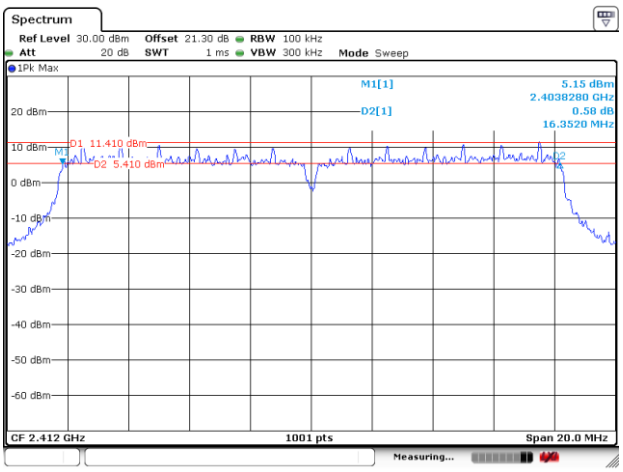
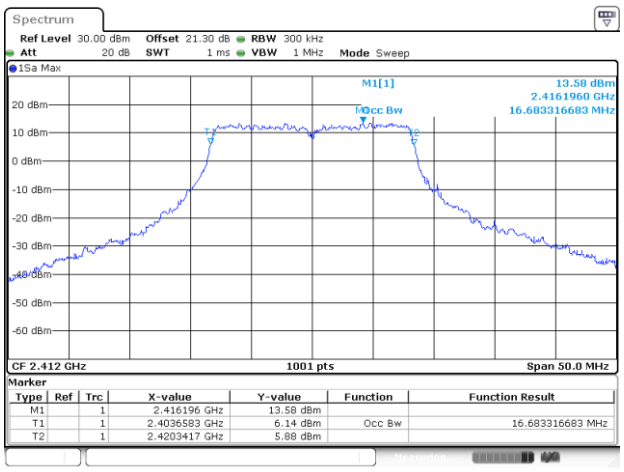
Please refer to Appendix A.

<With Low Gain Antenna>

MIMO <Ant. 0+2>

<CDD Mode>

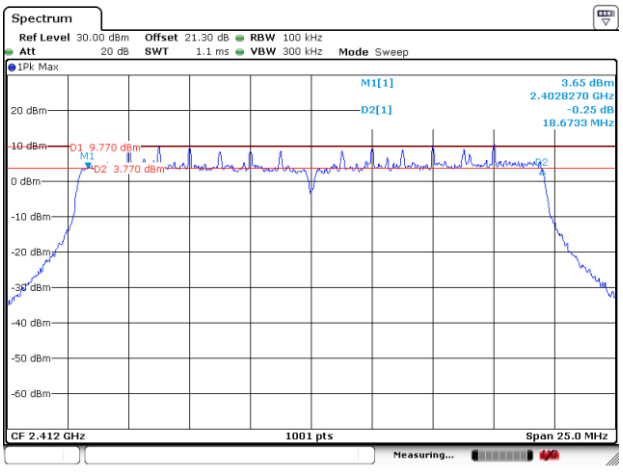
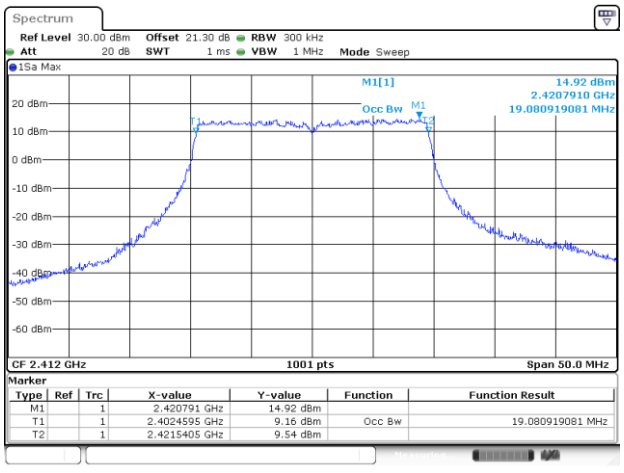
<802.11g>

6dB Bandwidth	99% Occupied Bandwidth
	

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

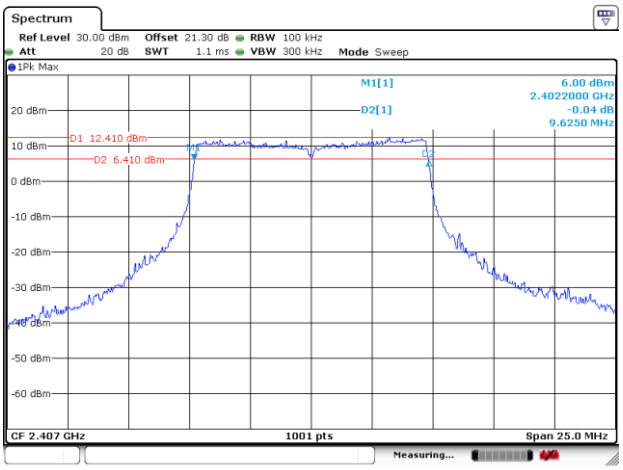
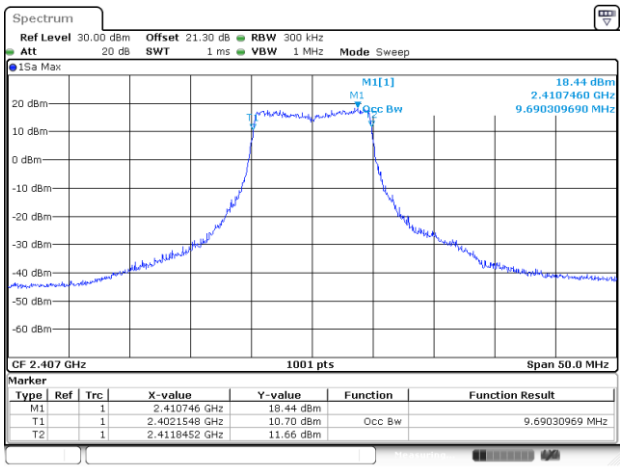
<STBC Mode>

<802.11ax HE20 Full RU>

6dB Bandwidth	99% Occupied Bandwidth
	

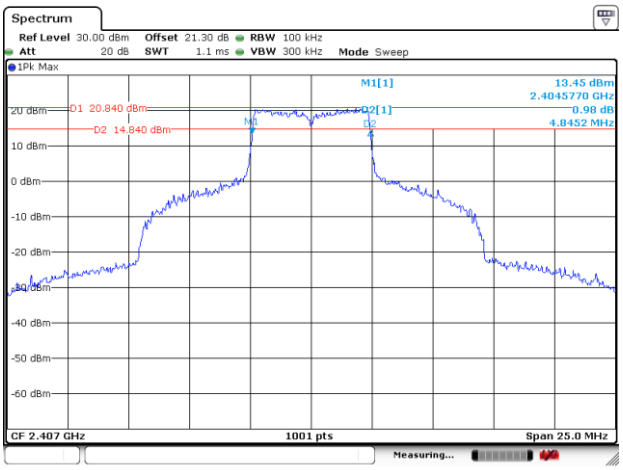
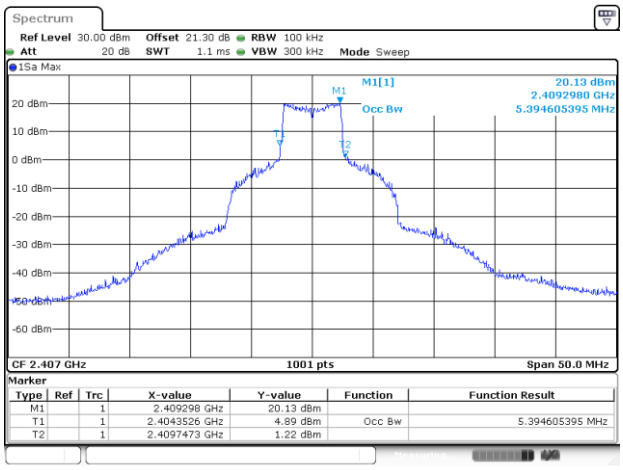
Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

<802.11ax HE10 Full RU>

6dB Bandwidth	99% Occupied Bandwidth
	

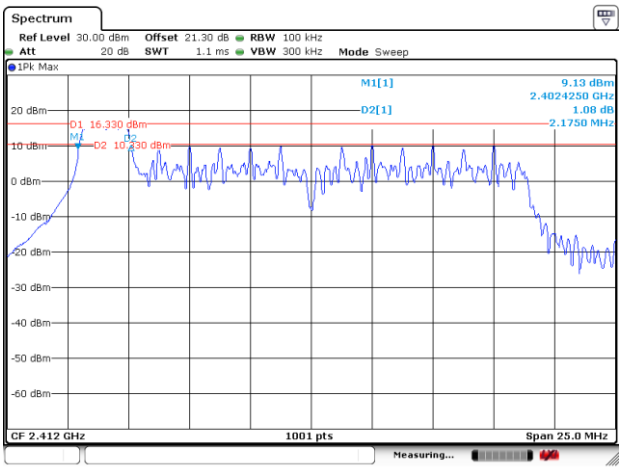
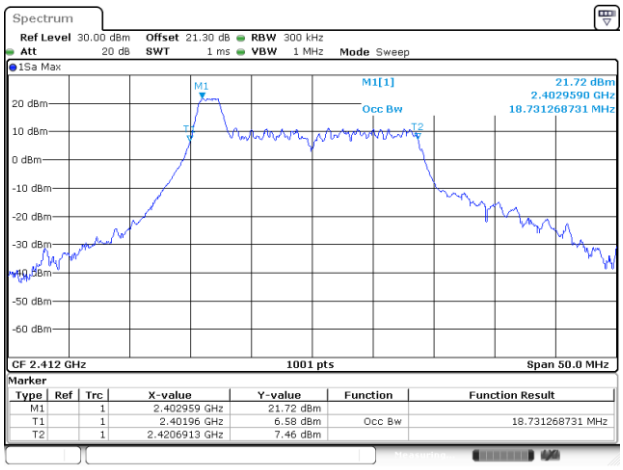
Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

<802.11ax HE5 Full RU>

6dB Bandwidth	99% Occupied Bandwidth
	

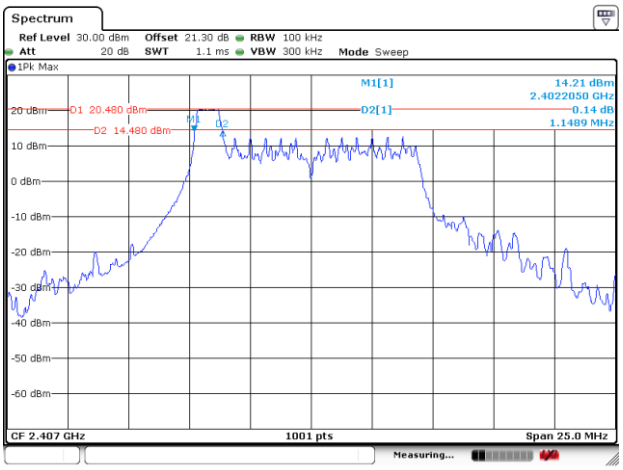
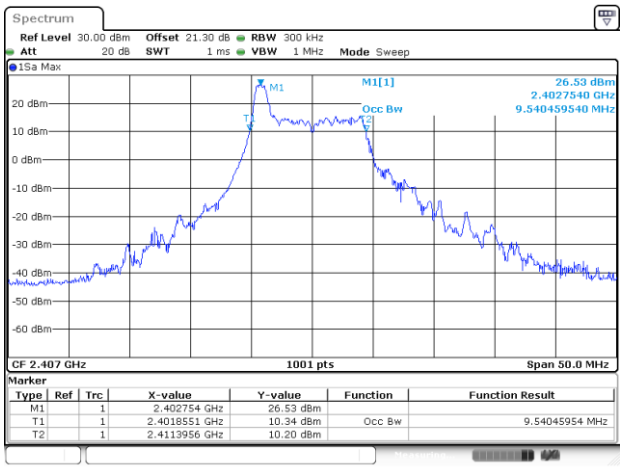
Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

<802.11ax HE20 Single RU>

6dB Bandwidth	99% Occupied Bandwidth
	

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

<802.11ax HE10 Single RU>

6dB Bandwidth	99% Occupied Bandwidth
	

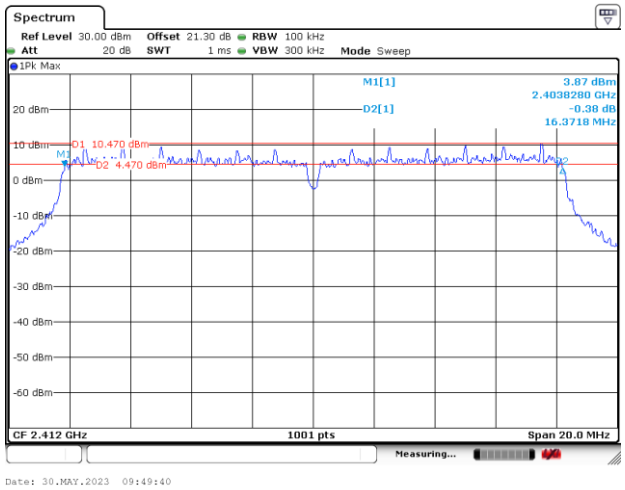
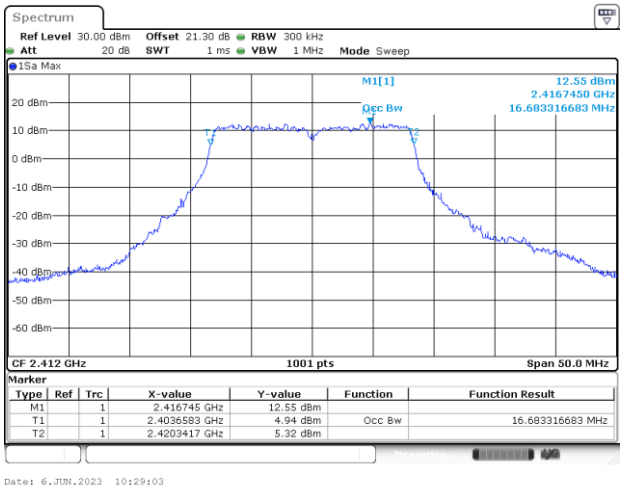
Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

<With High Gain Antenna>

MIMO <Ant. 0+2>

<CDD Mode>

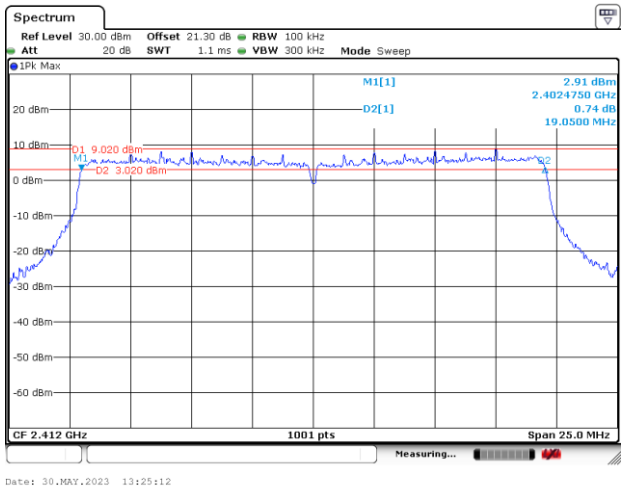
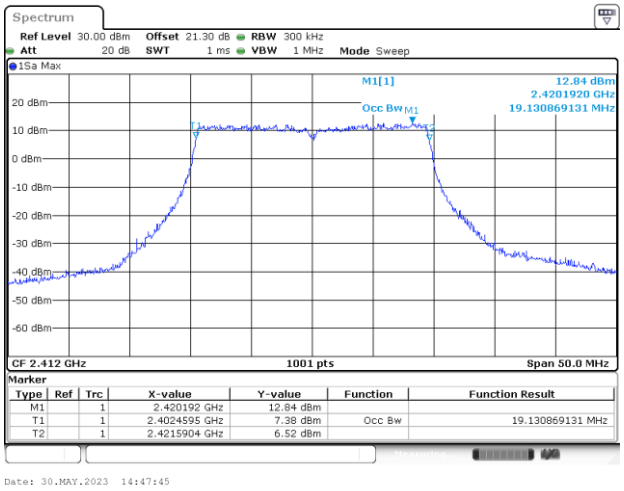
<802.11g>

6dB Bandwidth	99% Occupied Bandwidth
	

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

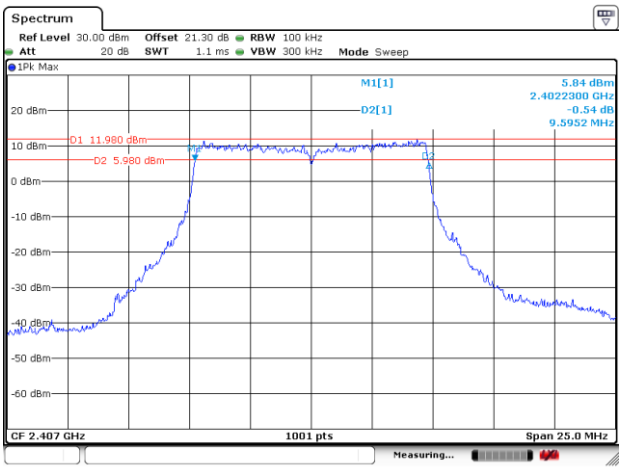
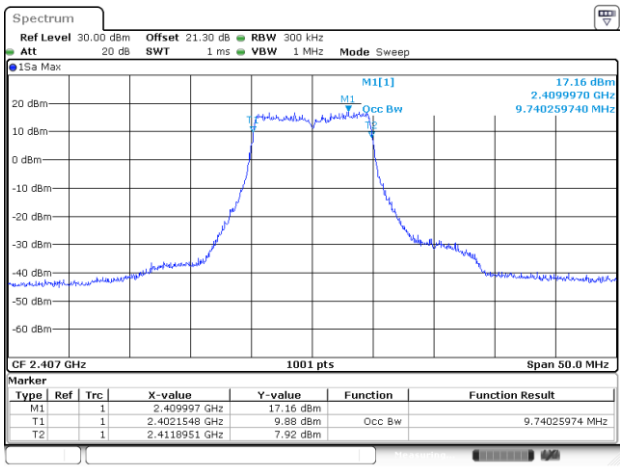
<STBC Mode>

<802.11ax HE20 Full RU>

6dB Bandwidth	99% Occupied Bandwidth
	

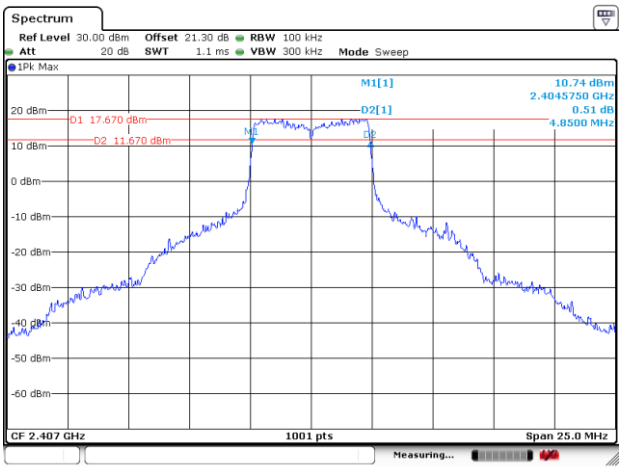
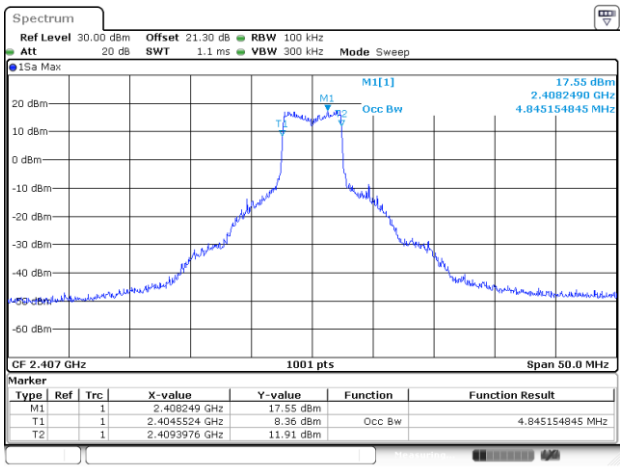
Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

<802.11ax HE10 Full RU>

6dB Bandwidth	99% Occupied Bandwidth
	

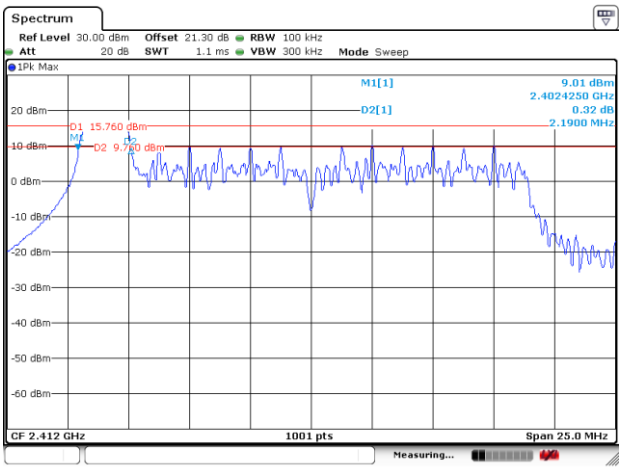
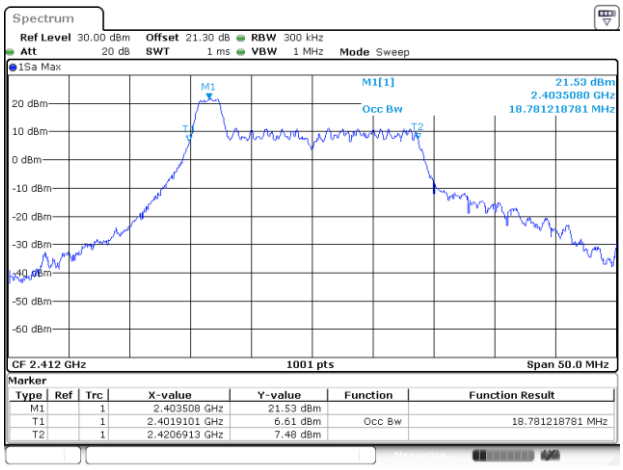
Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

<802.11ax HE5 Full RU>

6dB Bandwidth	99% Occupied Bandwidth
	

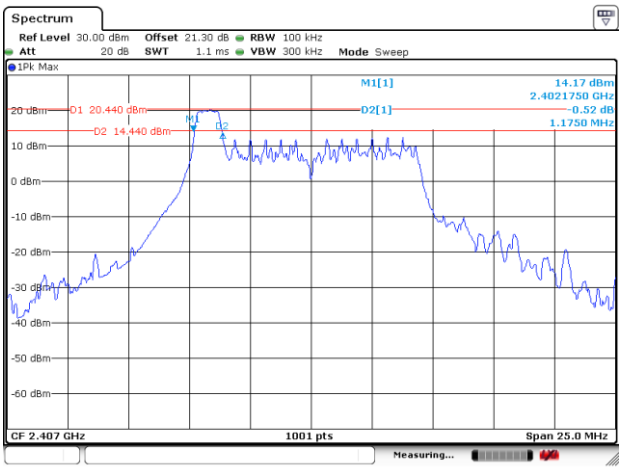
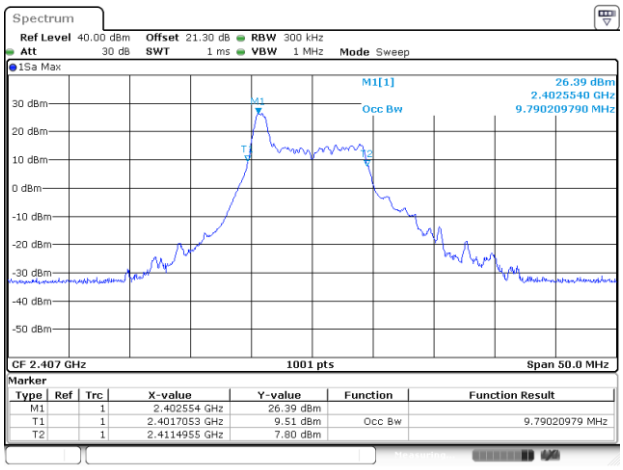
Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

<802.11ax HE20 Single RU>

6dB Bandwidth	99% Occupied Bandwidth
	

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

<802.11ax HE10 Single RU>

6dB Bandwidth	99% Occupied Bandwidth
	

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

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 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.

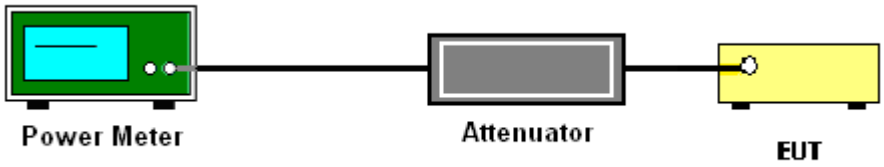
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

1. For Peak Power, the testing follows ANSI C63.10 Section 11.9.1.3 PKPM1
2. For Average Power, the testing follows ANSI C63.10 Section 11.9.2.3.2 Method AVGPM-G
3. 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.
4. Set the maximum power setting and enable the EUT to transmit continuously.
5. Measure the conducted output power and record the results in the test report.
6. 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.

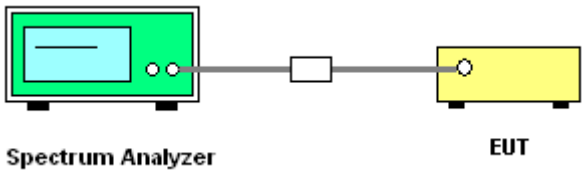
3.3.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 11.10.5 Method AVGPSD-2.
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. Number of points in sweep ≥ 2 Span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins).
6. Detector = RMS, Sweep time = auto couple.
7. Trace average at least 100 traces in power averaging mode.
8. 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. For example, add 10 log(1/0.25) = 6 dB if the duty cycle is 25 percent.
9. Measure and record the results in the test report.
10. 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



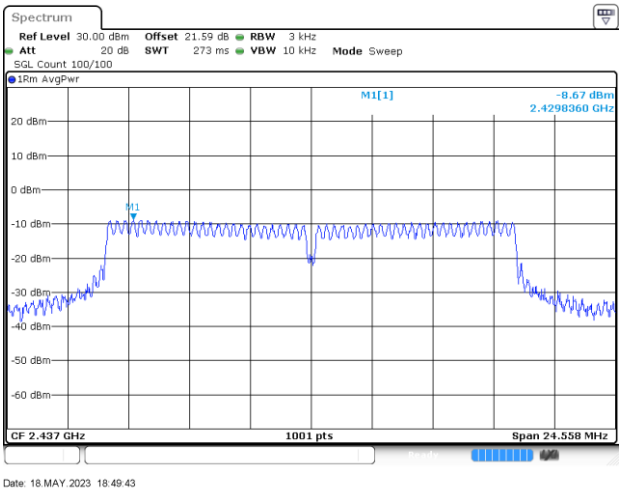
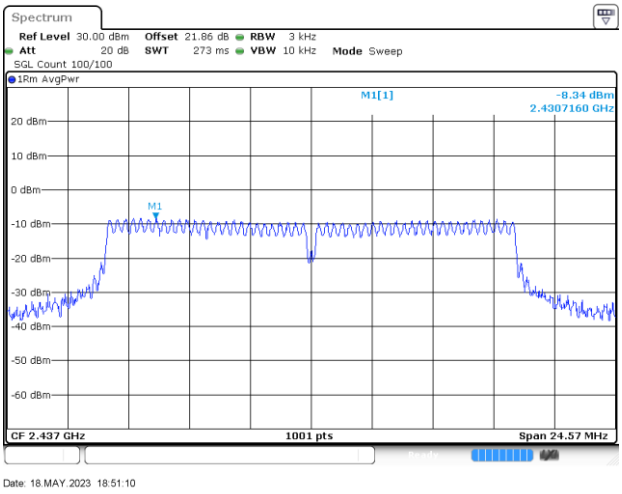
3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

<With Low Gain Antenna>

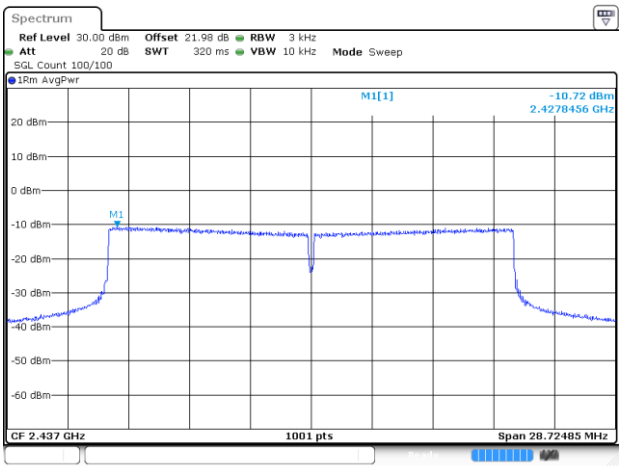
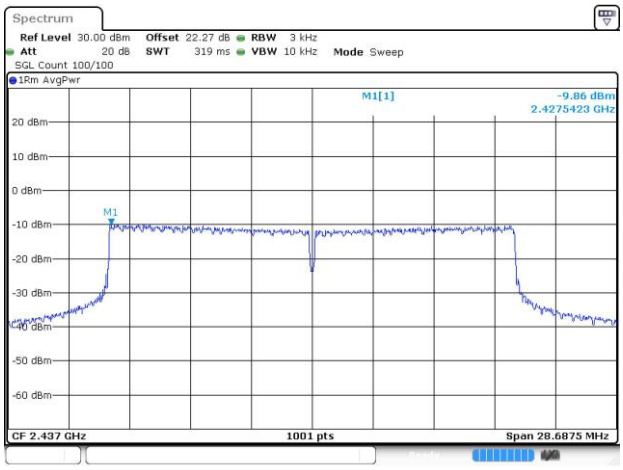
<CDD Modes>

<802.11g>

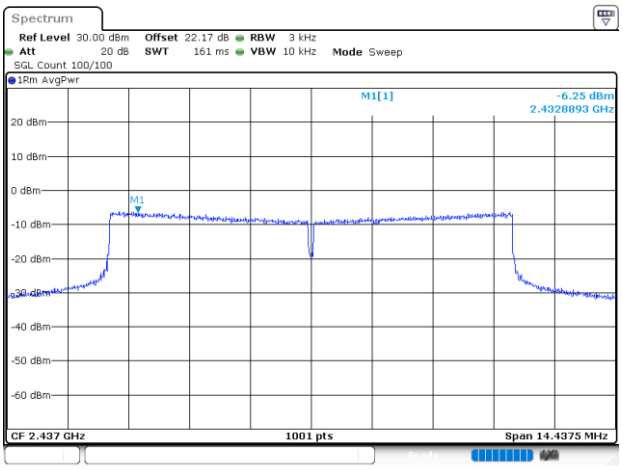
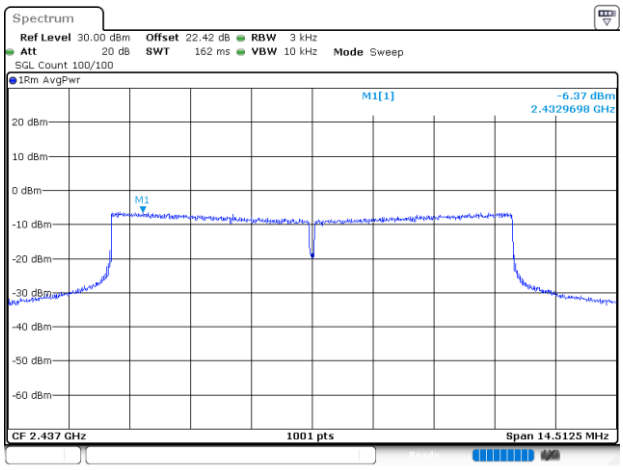
Worst Case Power Density (dBm/3kHz)	
MIMO Ant. 0	**MIMO Ant. 2**
	

<STBC Mode>

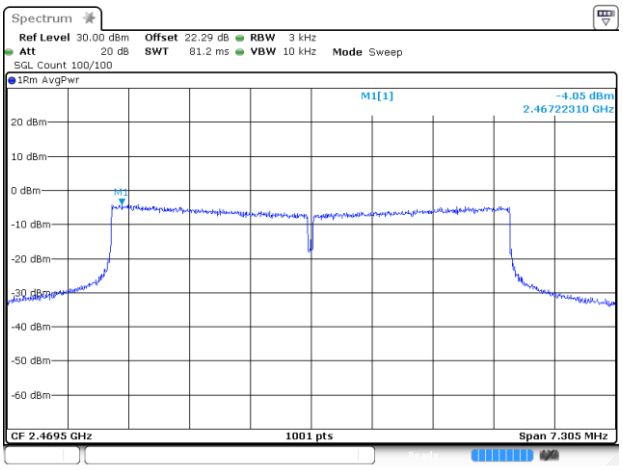
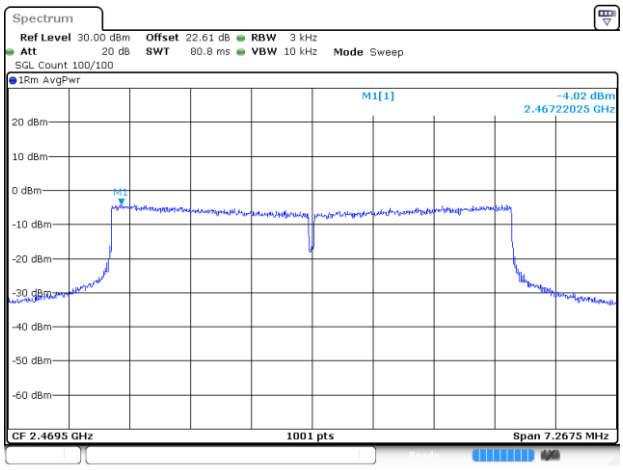
<802.11ax HE20 Full RU>

Worst Case Power Density (dBm/3kHz)	
MIMO Ant. 0	**MIMO Ant. 2**
	

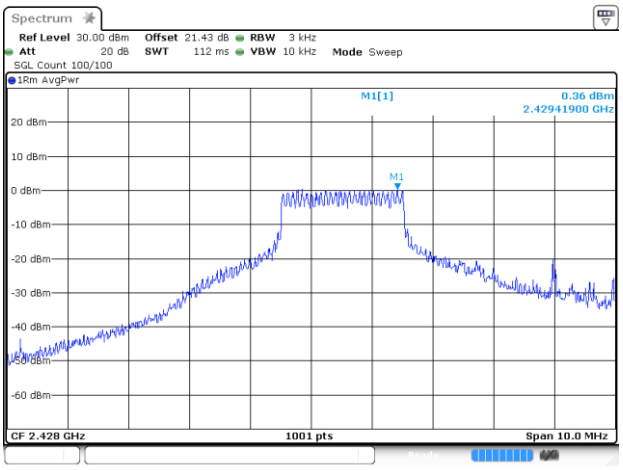
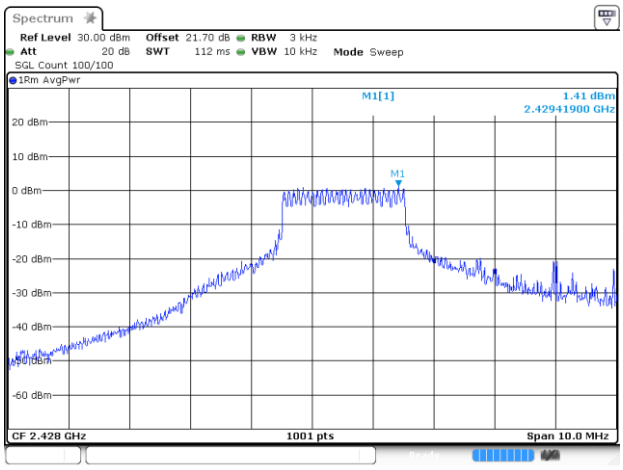
<802.11ax HE10 Full RU>

Worst Case Power Density (dBm/3kHz)	
MIMO Ant. 0	**MIMO Ant. 2**
	

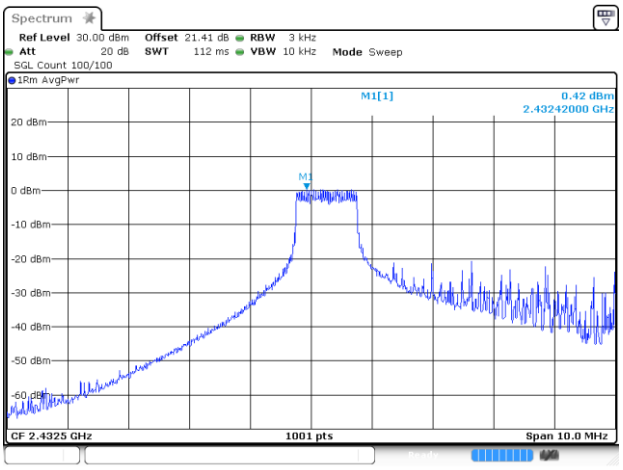
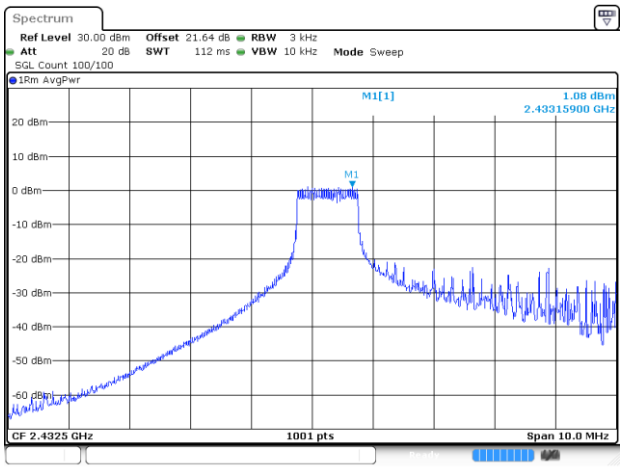
<802.11ax HE5 Full RU>

Worst Case Power Density (dBm/3kHz)	
MIMO Ant. 0	**MIMO Ant. 2**
	

<802.11ax HE20 Single RU>

Worst Case Power Density (dBm/3kHz)	
MIMO Ant. 0	**MIMO Ant. 2**
	

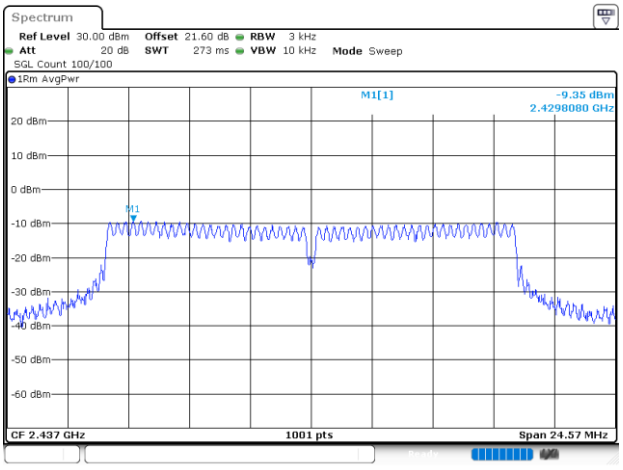
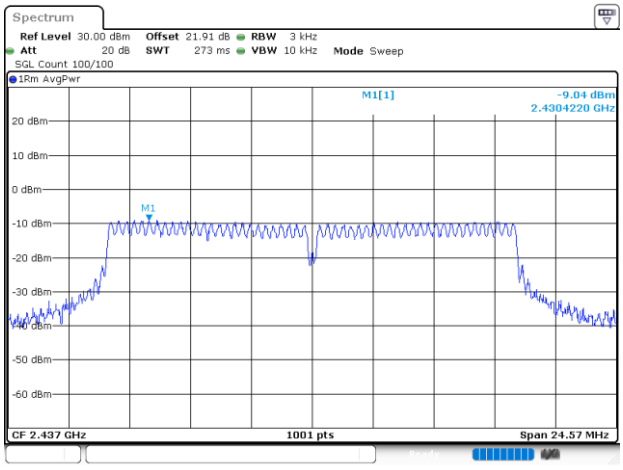
<802.11ax HE10 Single RU>

Worst Case Power Density (dBm/3kHz)	
MIMO Ant. 0	**MIMO Ant. 2**
	

<With High Gain Antenna>

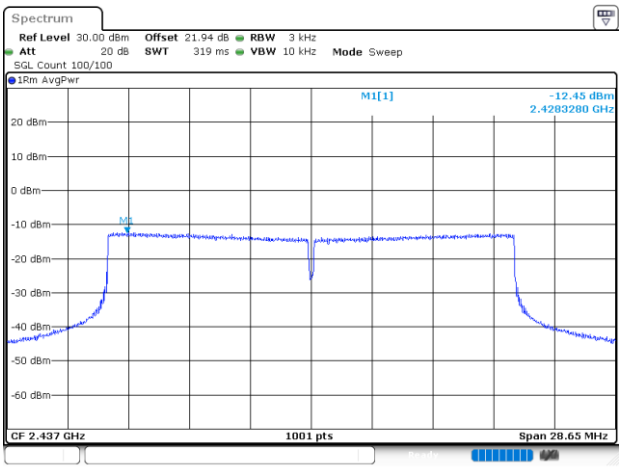
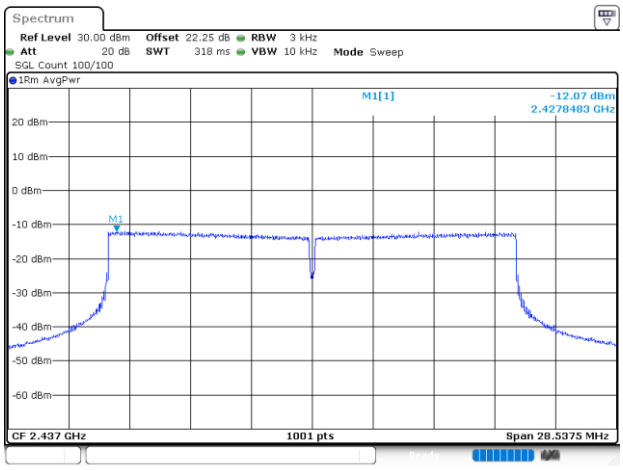
<CDD Modes>

<802.11g>

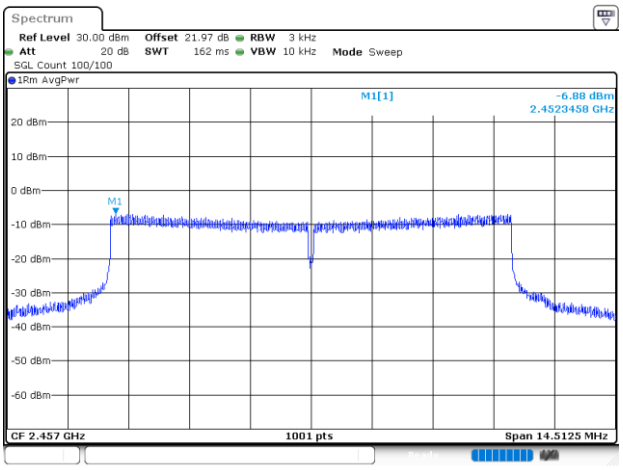
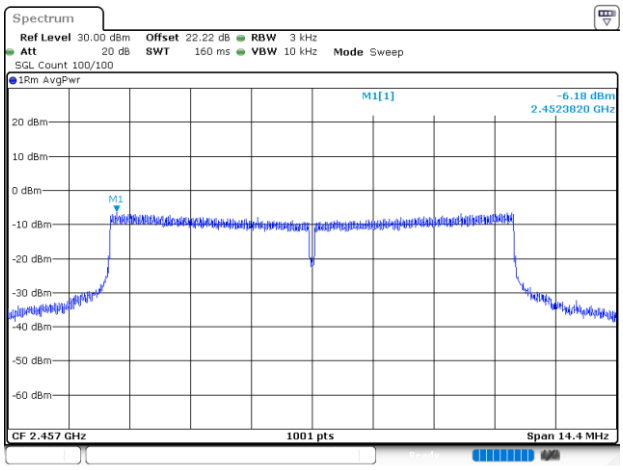
Worst Case Power Density (dBm/3kHz)	
MIMO Ant. 0	**MIMO Ant. 2**
	

<STBC Mode>

<802.11ax HE20 Full RU>

Worst Case Power Density (dBm/3kHz)	
MIMO Ant. 0	**MIMO Ant. 2**
	

<802.11ax HE10 Full RU>

Worst Case Power Density (dBm/3kHz)	
MIMO Ant. 0	**MIMO Ant. 2**
	

<802.11ax HE5 Full RU>

Worst Case Power Density (dBm/3kHz)	
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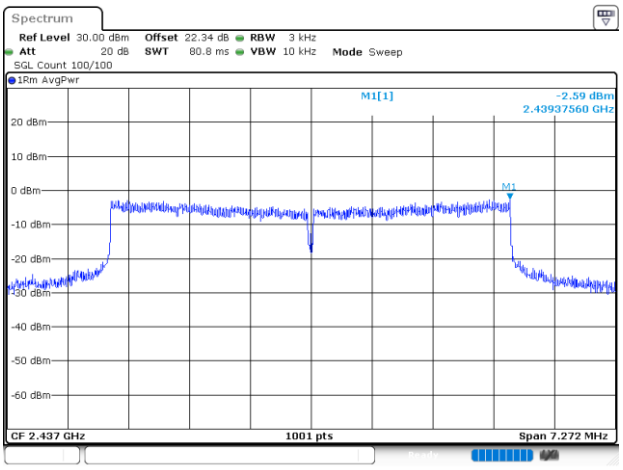
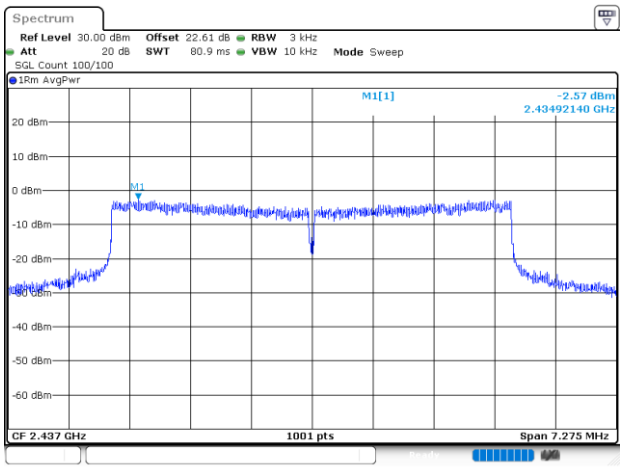
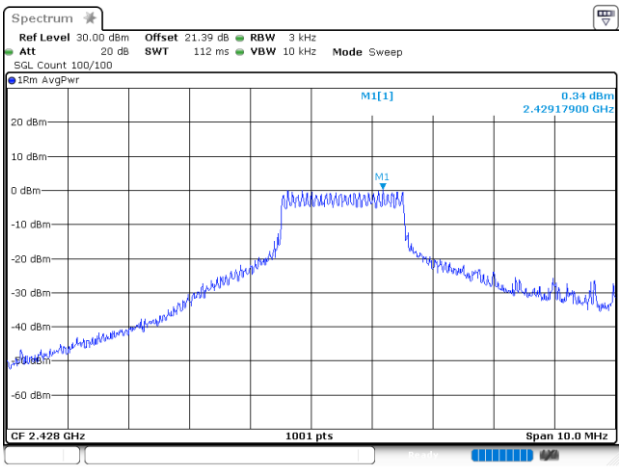
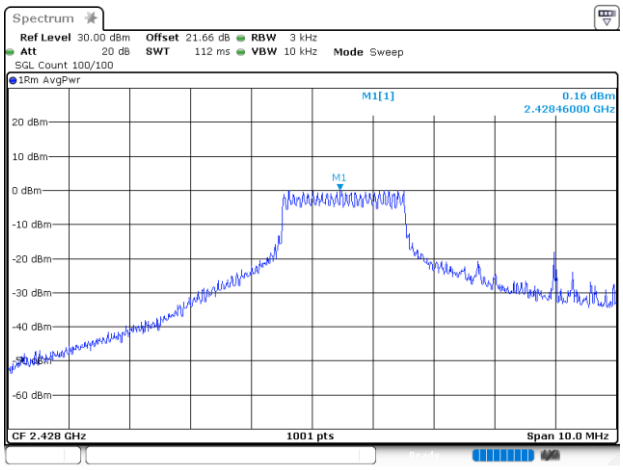
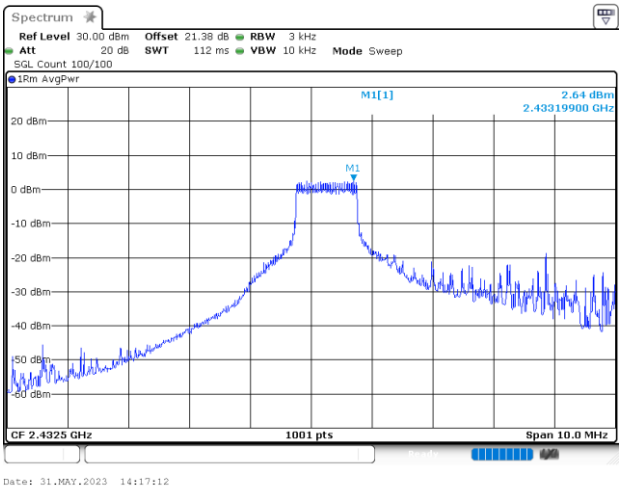
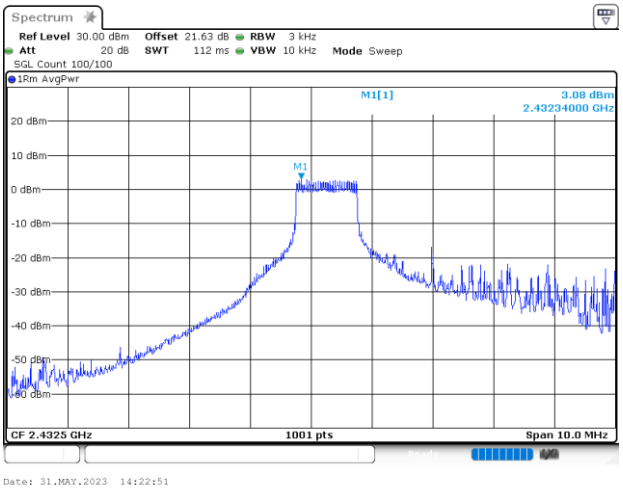
	

<802.11ax HE20 Single RU>

Worst Case Power Density (dBm/3kHz)	
MIMO Ant. 0	**MIMO Ant. 2**
	

<802.11ax HE10 Single RU>

Worst Case Power Density (dBm/3kHz)	
MIMO Ant. 0	**MIMO Ant. 2**
	

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

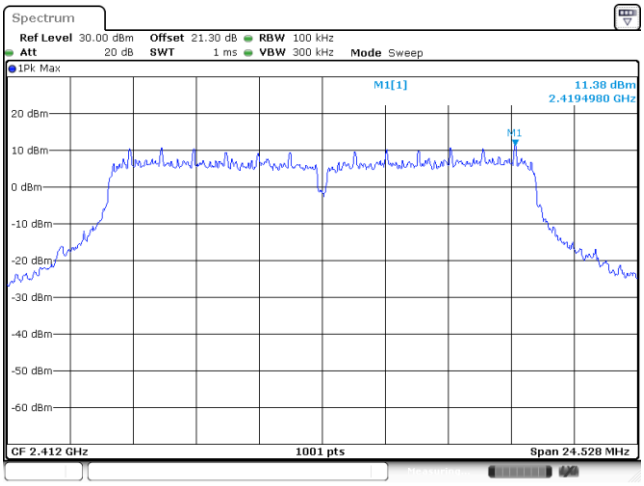
Test Engineer :	Venkata Kondepudi	Temperature :	18.6~21.8℃
		Relative Humidity :	44.5~57.3%

<With Low Gain Antenna>

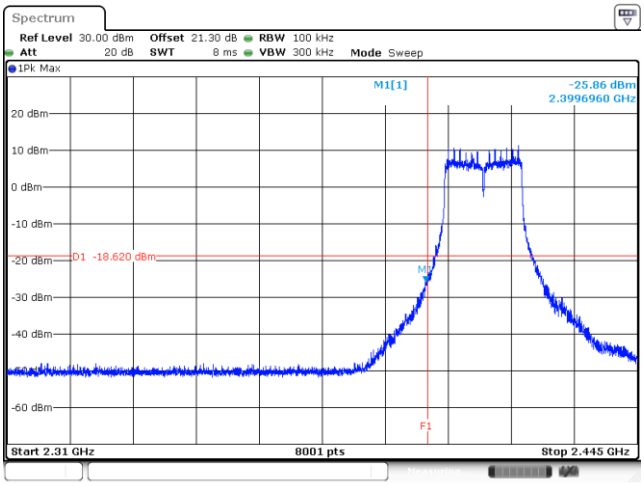
Number of TX = 2, Ant. 0 (Measured)

Test Mode :	802.11g	Test Channel :	01

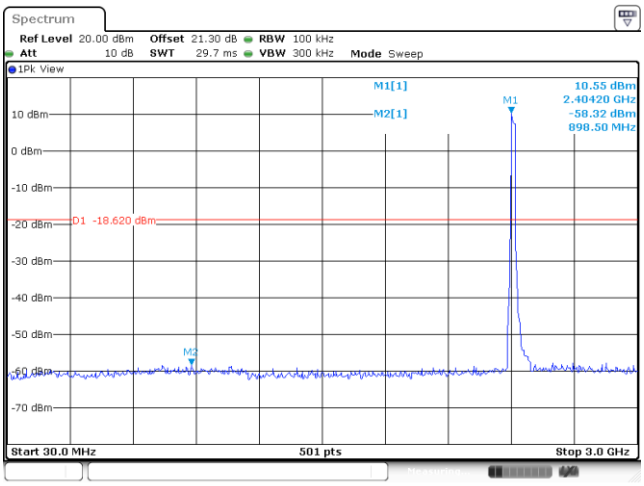
100kHz PSD reference Level



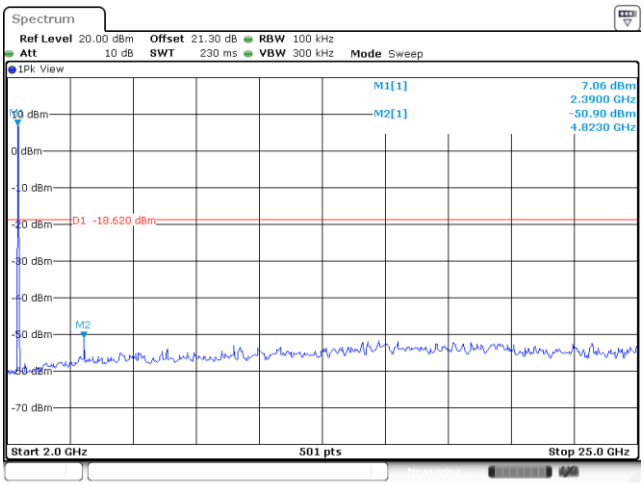
Channel Plot



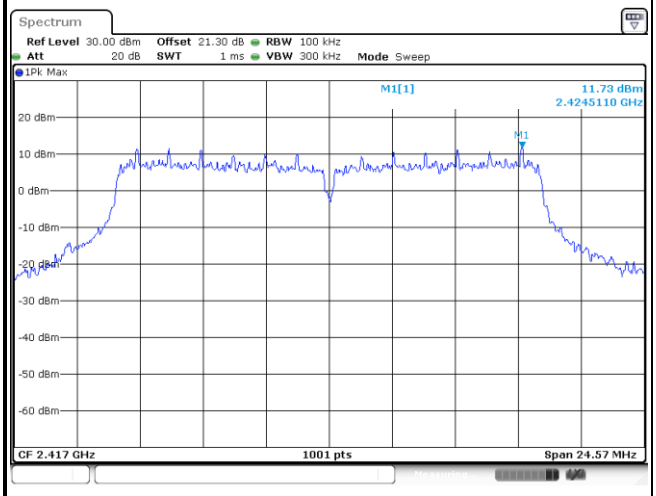
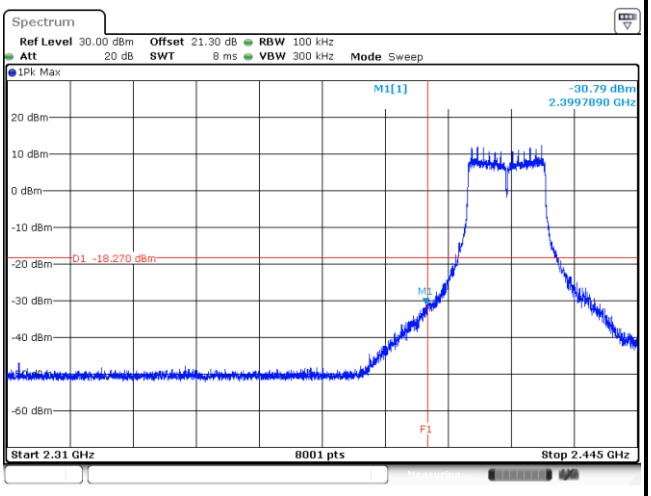
Spurious Emission 30MHz~3GHz



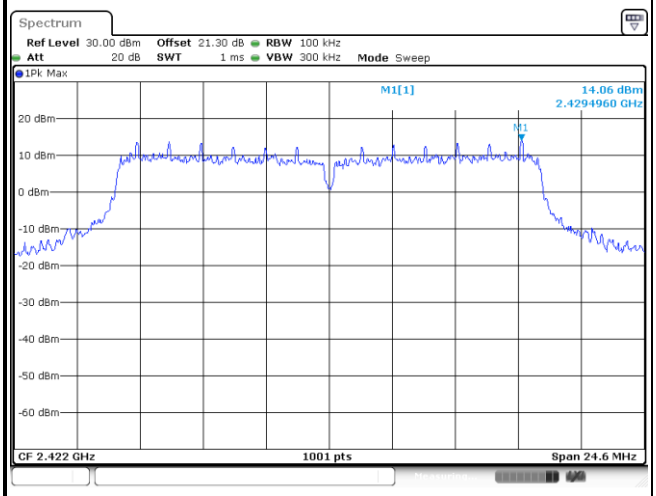
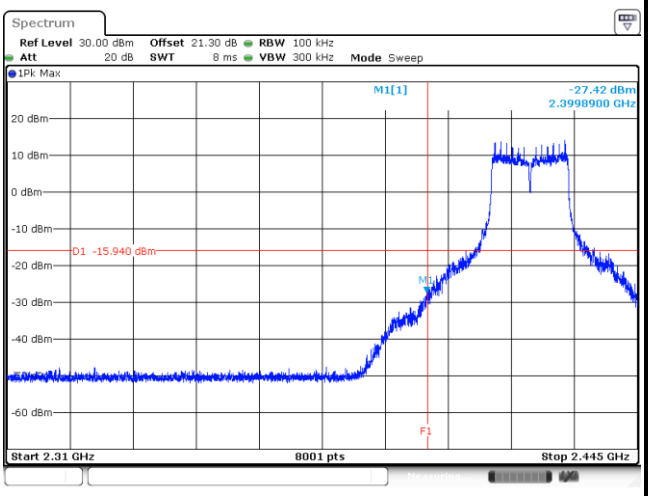
Spurious Emission 2GHz~25GHz



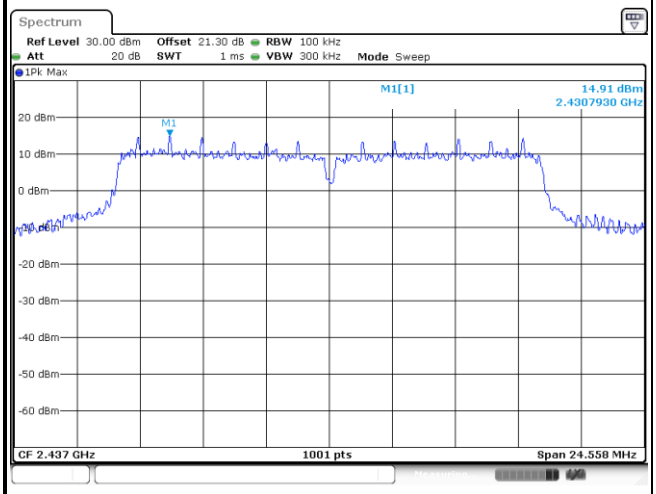
Test Mode :	802.11g	Test Channel :	02

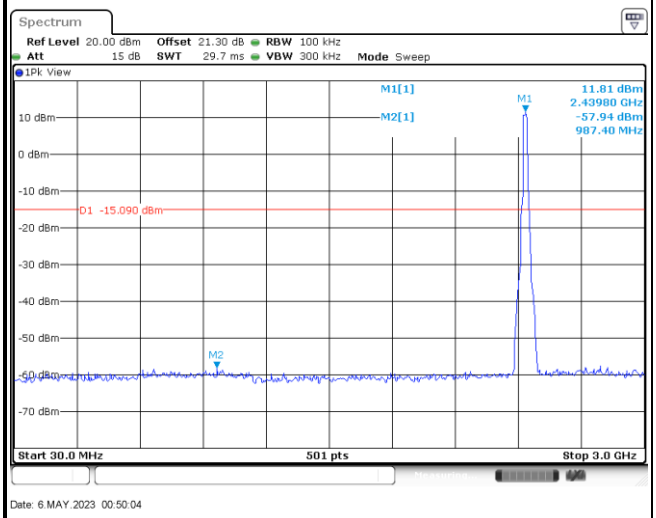
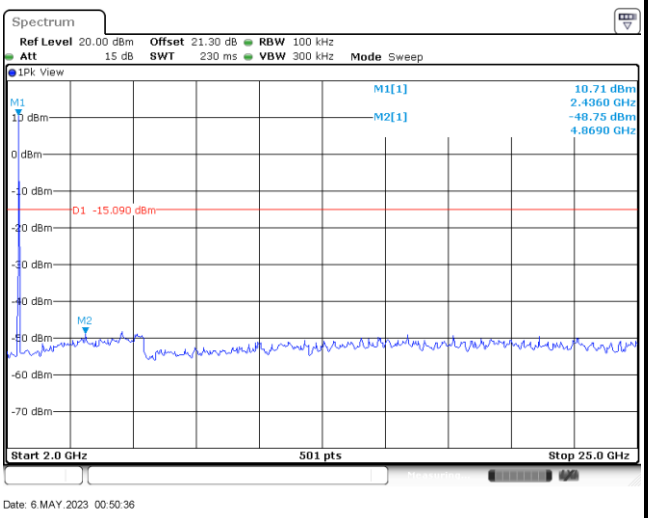
100kHz PSD reference Level	Channel Plot
	

Test Mode :	802.11g	Test Channel :	03

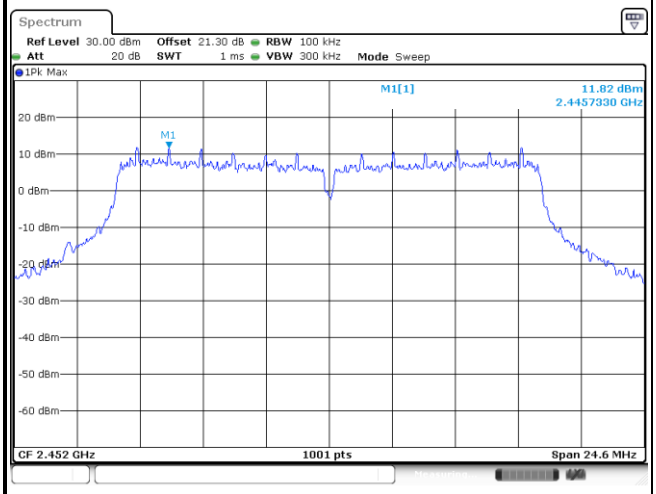
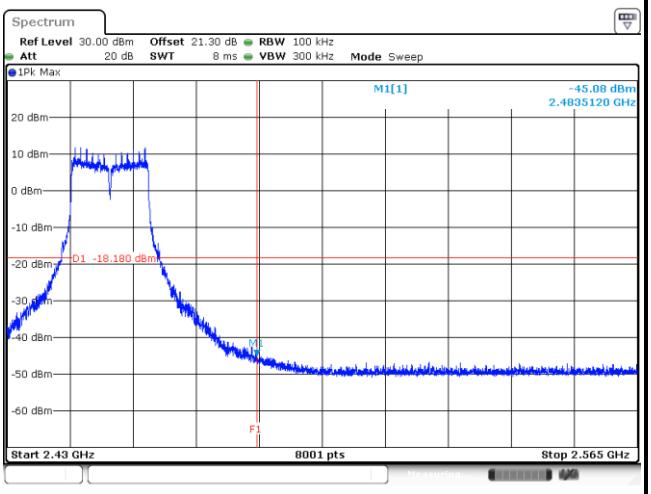
100kHz PSD reference Level	Channel Plot
	

Test Mode :	802.11g	Test Channel :	06

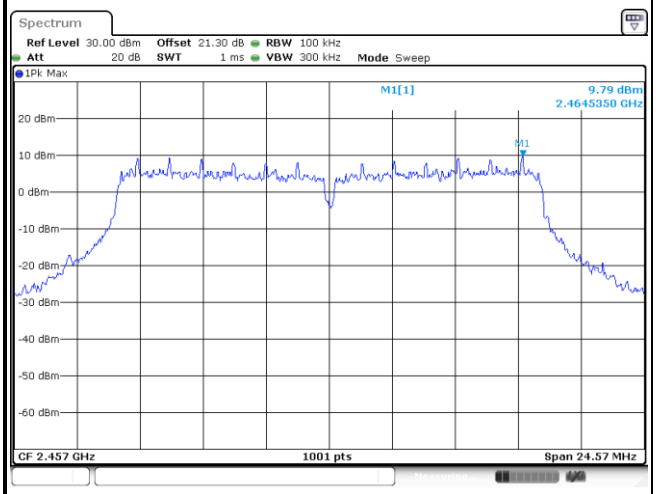
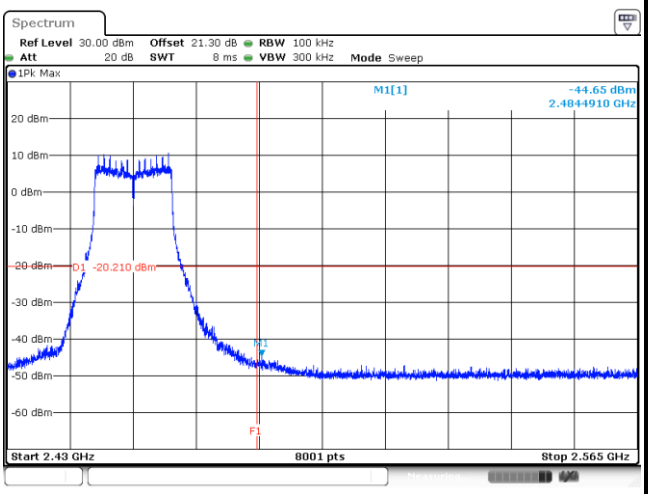
100kHz PSD reference Level	Channel Plot
	Left Blank

Spurious Emission 30MHz~3GHz	Spurious Emission 2GHz~25GHz
	

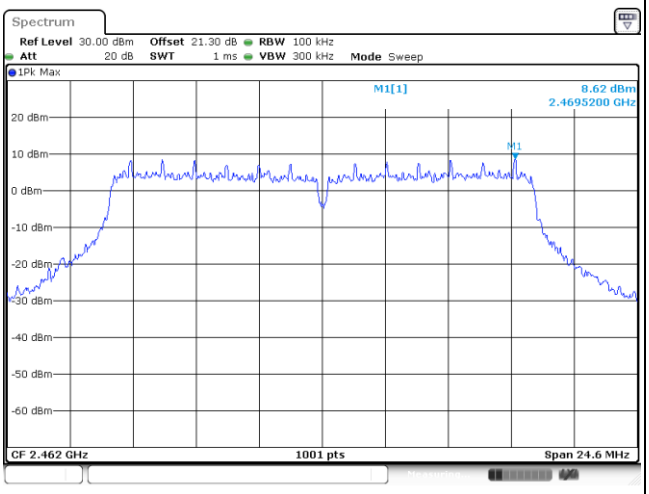
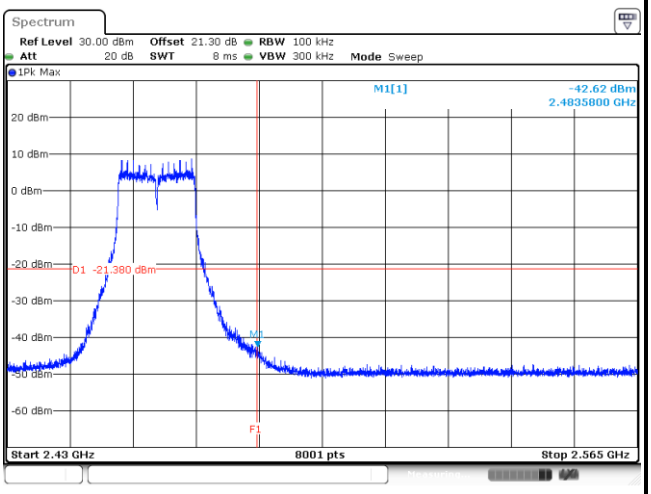
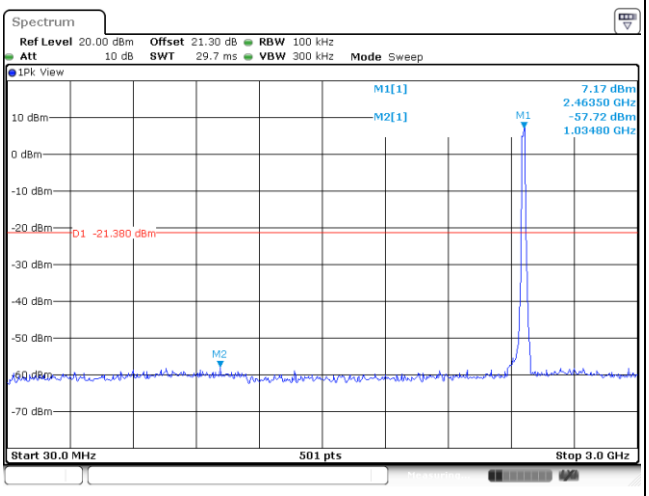
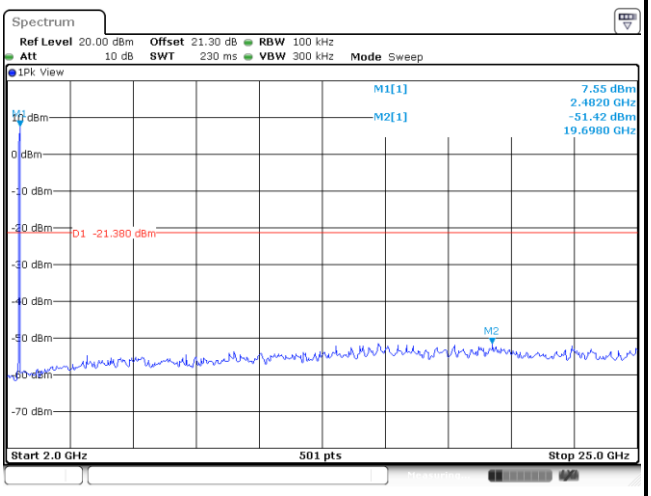
Test Mode :	802.11g	Test Channel :	09

100kHz PSD reference Level	Channel Plot
	

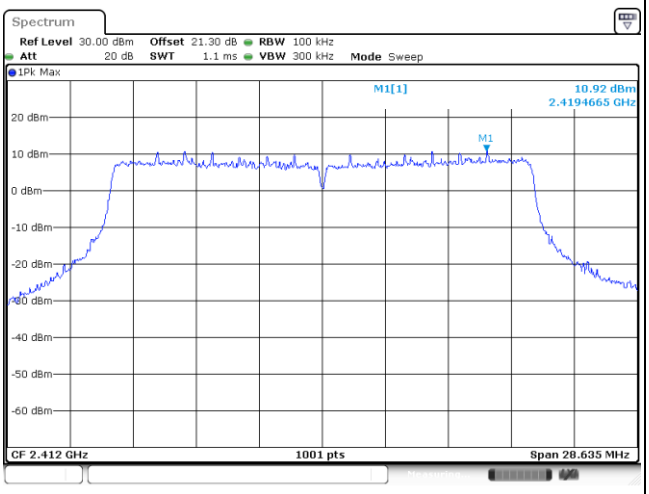
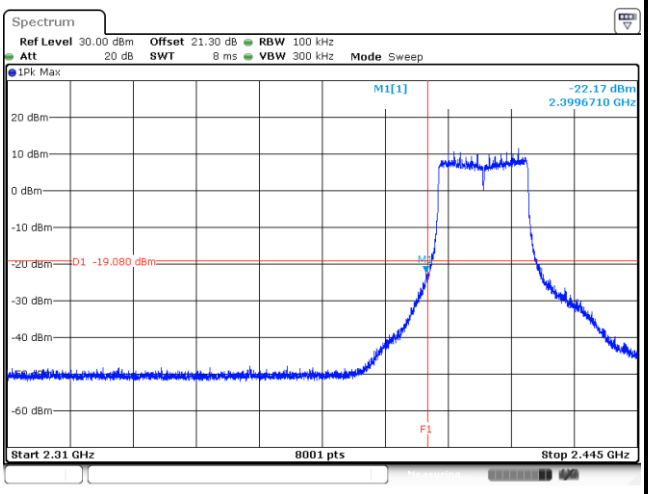
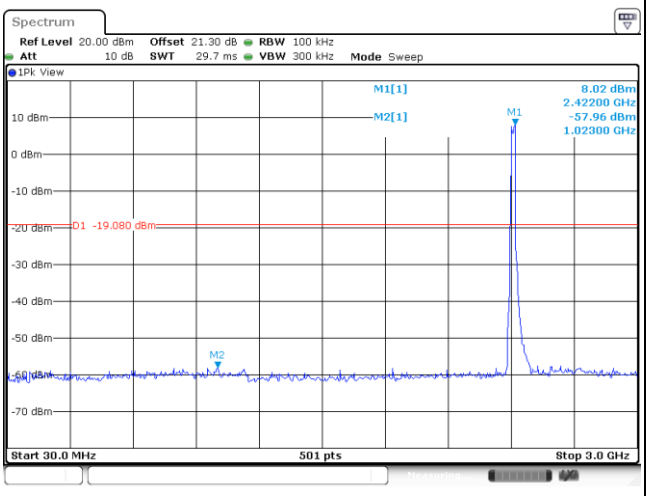
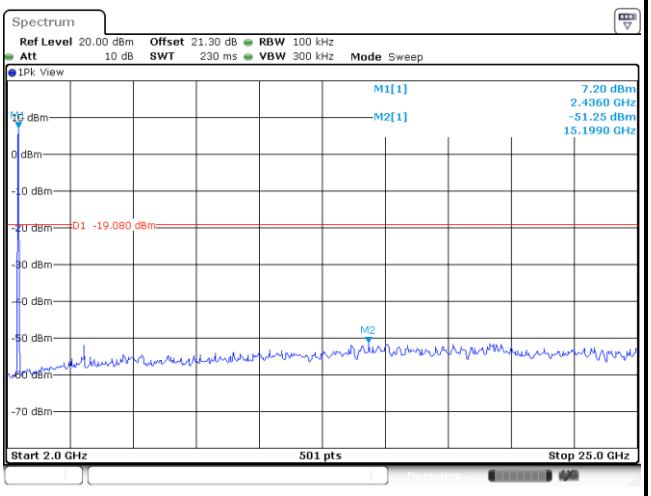
Test Mode :	802.11g	Test Channel :	10

100kHz PSD reference Level	Channel Plot
	

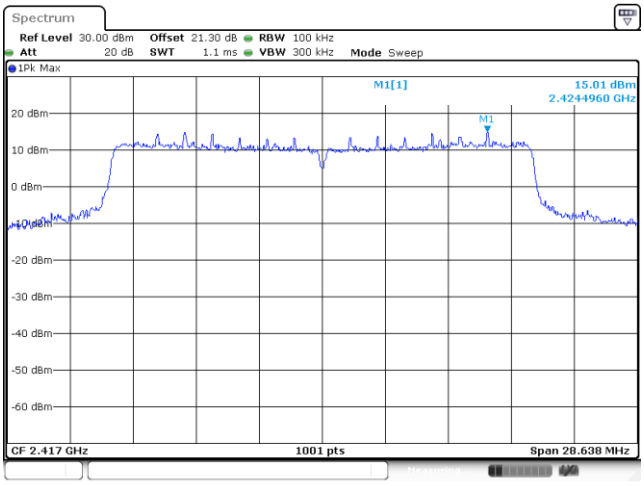
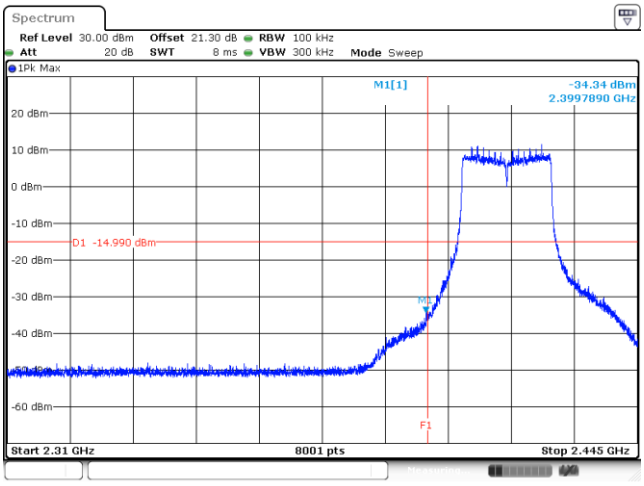
Test Mode :	802.11g	Test Channel :	11

100kHz PSD reference Level	Channel Plot
	
Spurious Emission 30MHz~3GHz	Spurious Emission 2GHz~25GHz
	

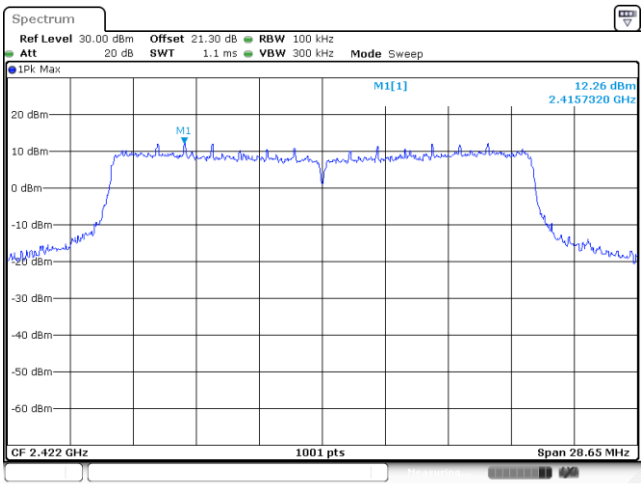
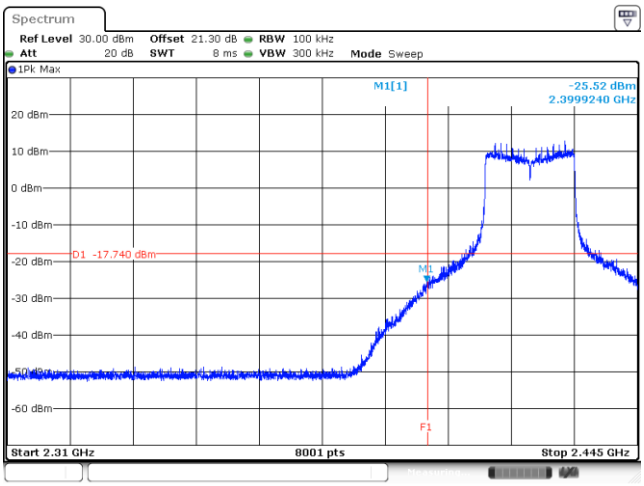
Test Mode :	802.11ax HE20 Full RU	Test Channel :	01

100kHz PSD reference Level	Channel Plot
	
Spurious Emission 30MHz~3GHz	Spurious Emission 2GHz~25GHz
	

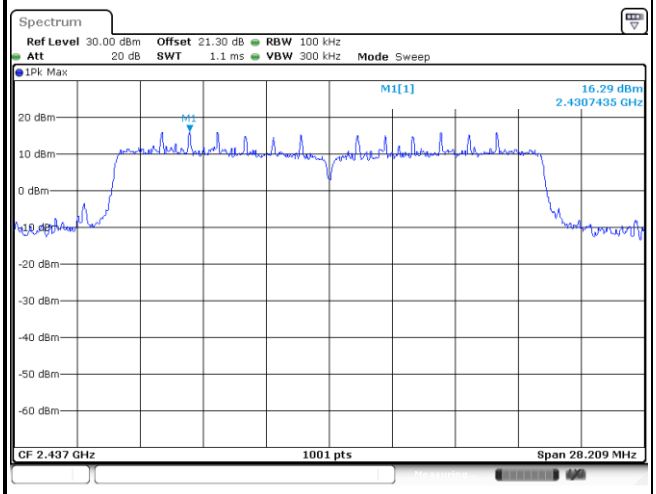
Test Mode :	802.11ax HE20 Full RU	Test Channel :	02

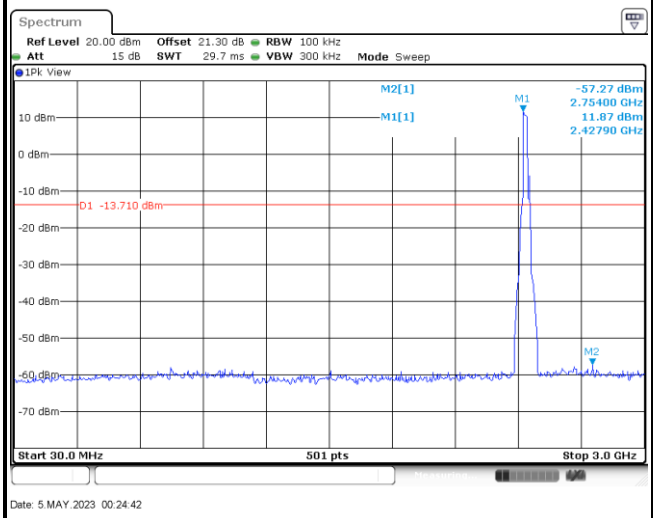
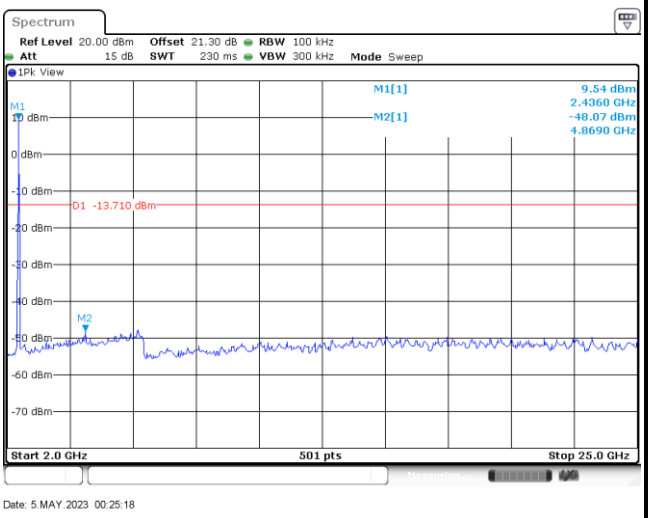
100kHz PSD reference Level	Channel Plot
	

Test Mode :	802.11ax HE20 Full RU	Test Channel :	03

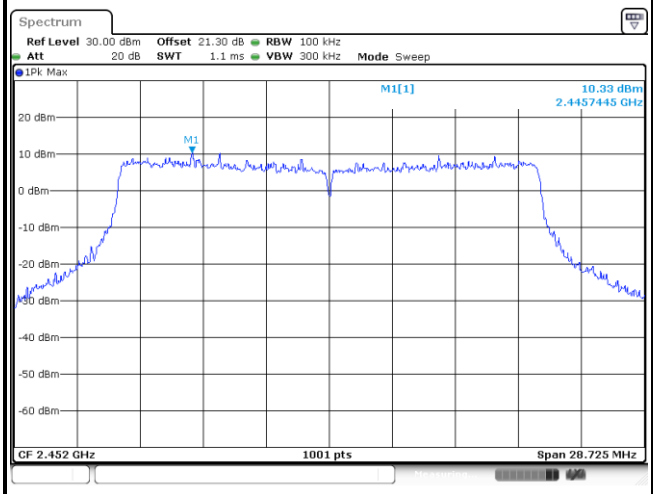
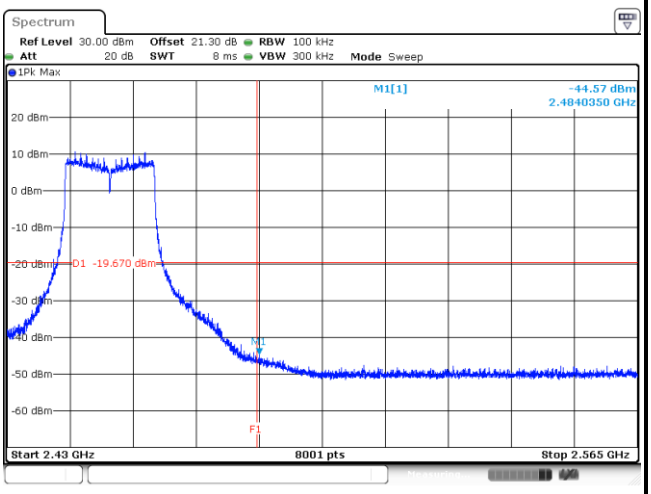
100kHz PSD reference Level	Channel Plot
	

Test Mode :	802.11ax HE20 Full RU	Test Channel :	06

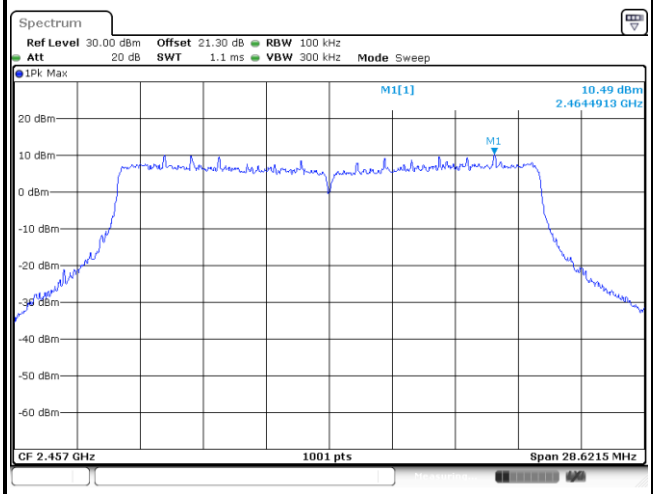
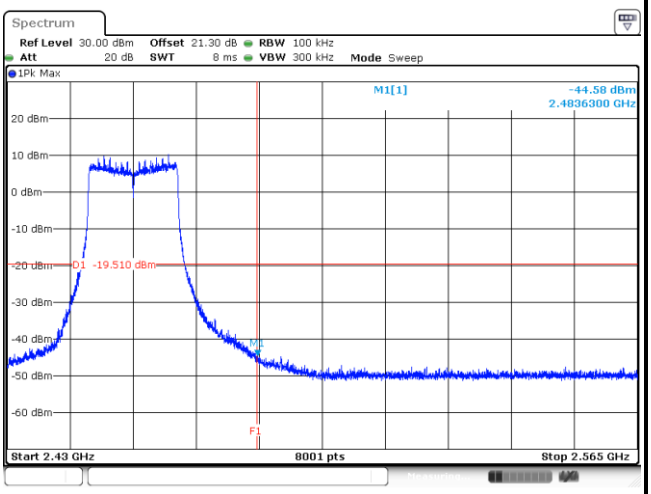
100kHz PSD reference Level	Channel Plot
	Left Blank

Spurious Emission 30MHz~3GHz	Spurious Emission 2GHz~25GHz
	

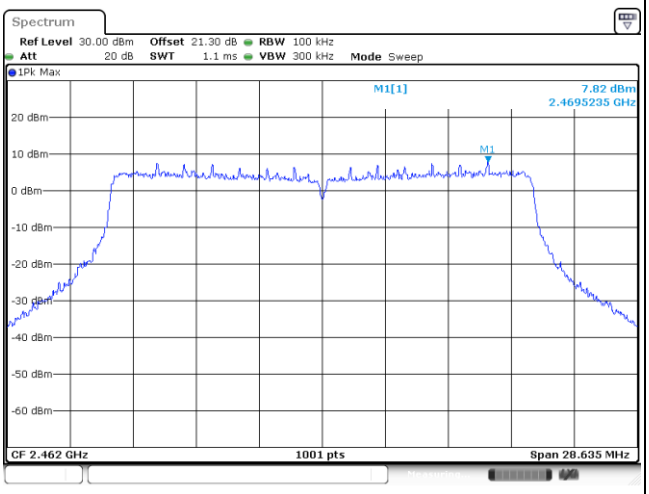
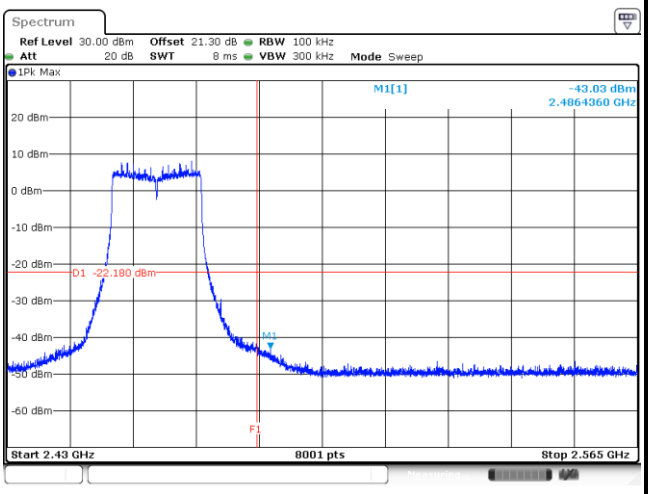
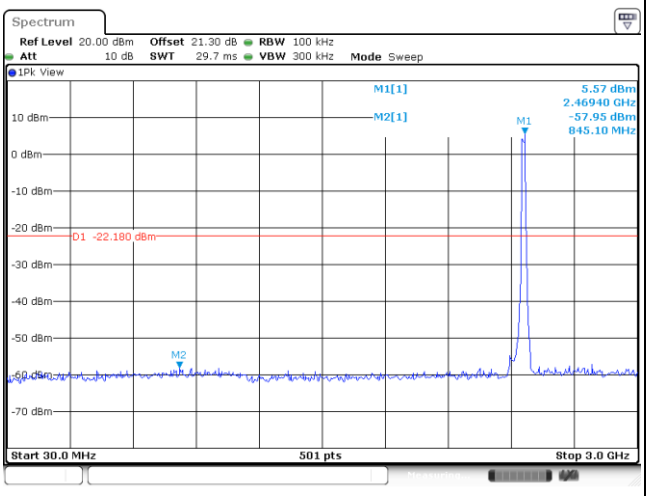
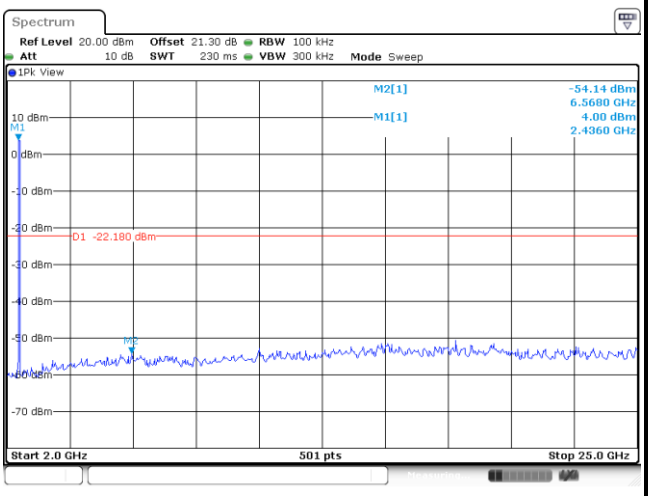
Test Mode :	802.11ax HE20 Full RU	Test Channel :	09

100kHz PSD reference Level	Channel Plot
	

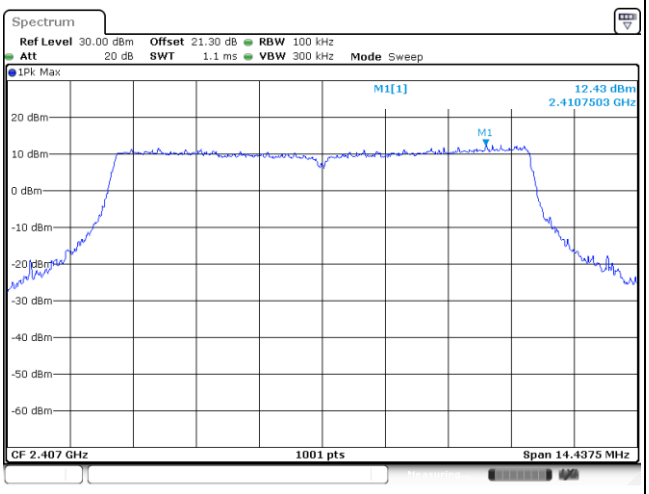
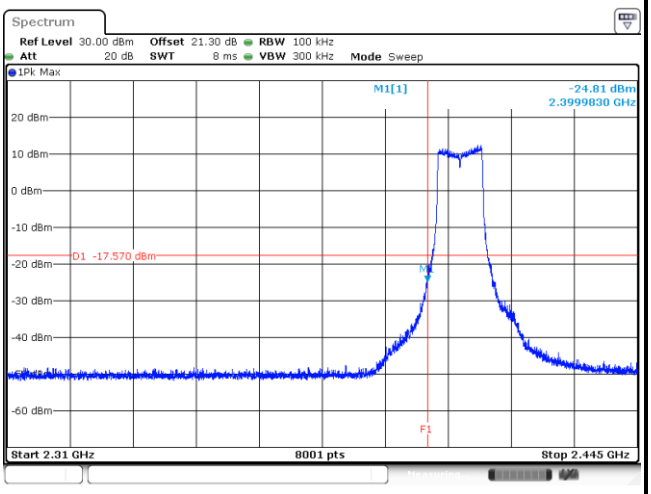
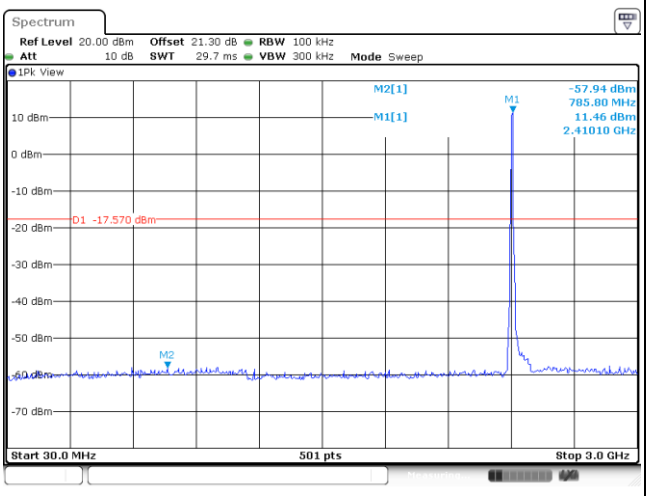
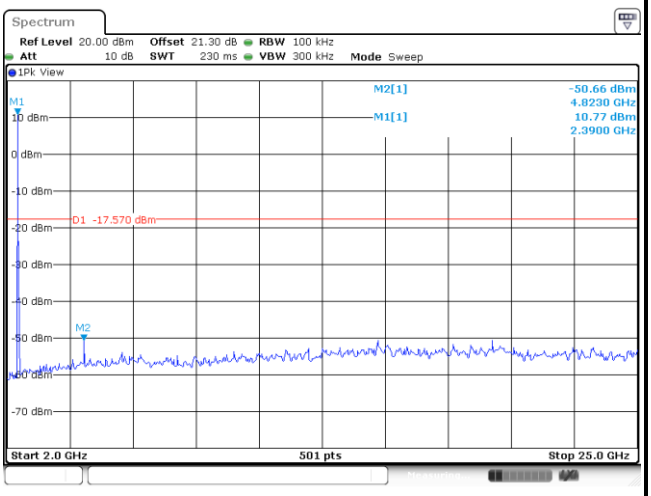
Test Mode :	802.11ax HE20 Full RU	Test Channel :	10

100kHz PSD reference Level	Channel Plot
	

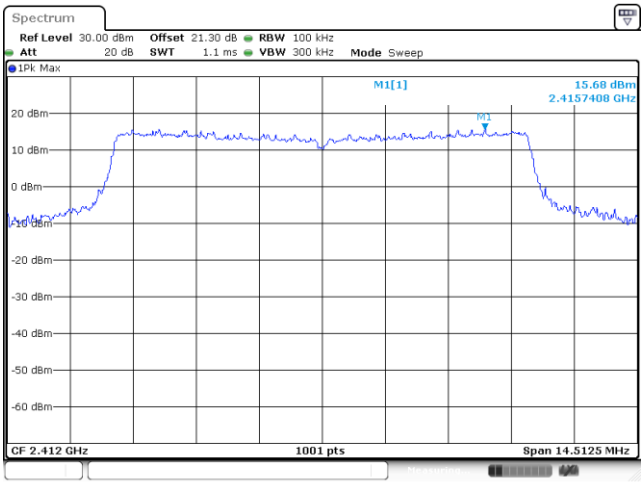
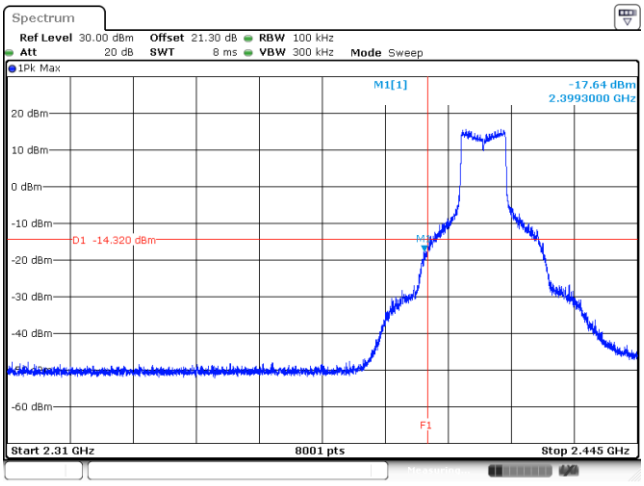
Test Mode :	802.11ax HE20 Full RU	Test Channel :	11

100kHz PSD reference Level	Channel Plot
	
Spurious Emission 30MHz~3GHz	Spurious Emission 2GHz~25GHz
	

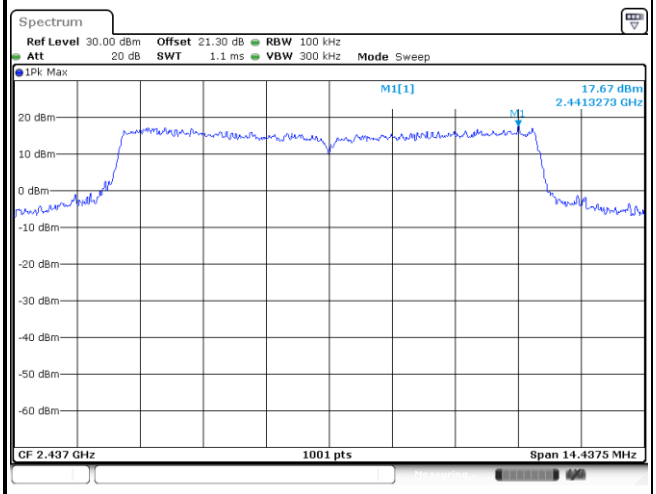
Test Mode :	802.11ax HE10 Full RU	Test Channel :	00

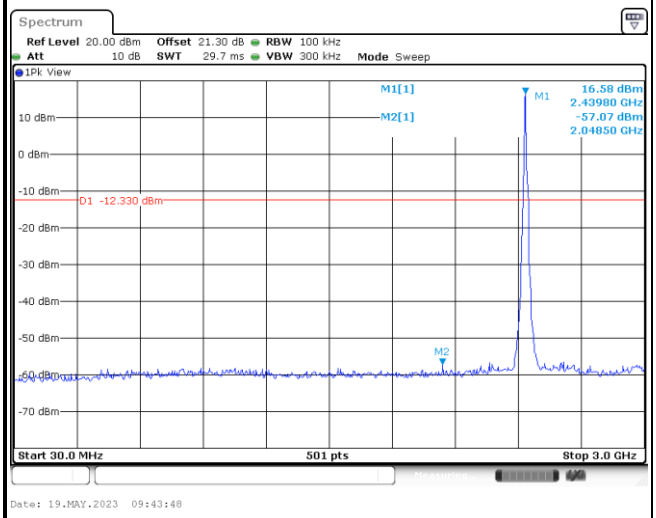
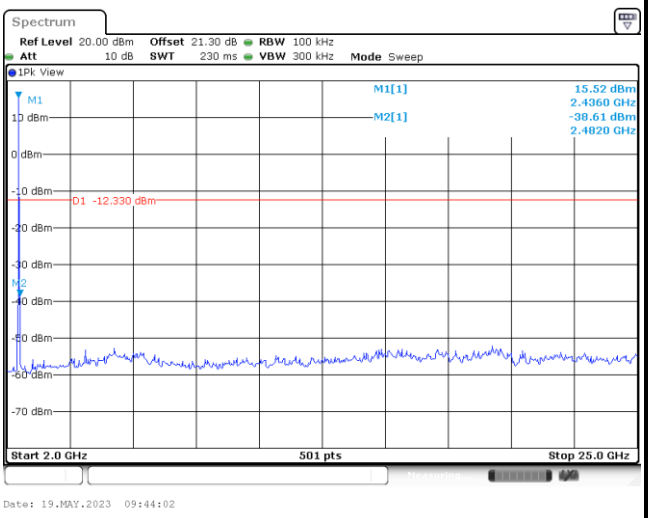
100kHz PSD reference Level	Channel Plot
	
Spurious Emission 30MHz~3GHz	Spurious Emission 2GHz~25GHz
	

Test Mode :	802.11ax HE10 Full RU	Test Channel :	01

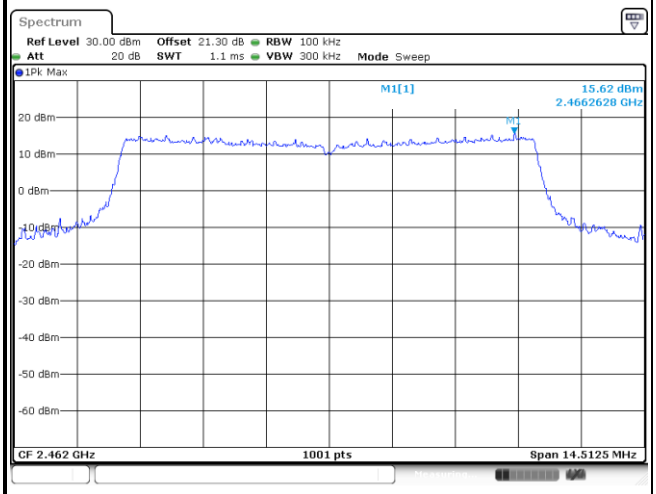
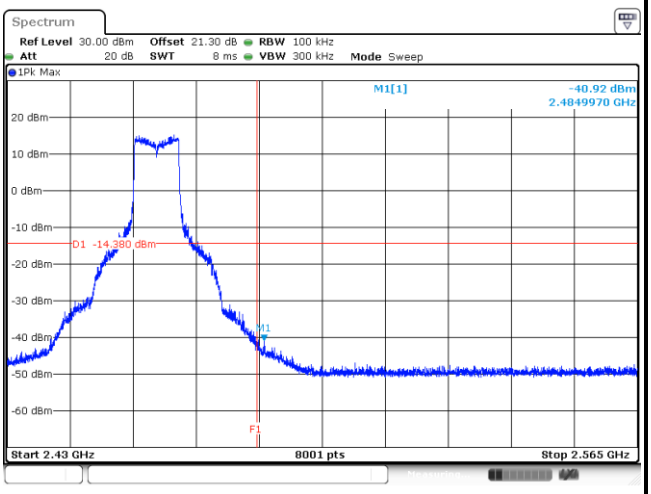
100kHz PSD reference Level	Channel Plot
	

Test Mode :	802.11ax HE10 Full RU	Test Channel :	06

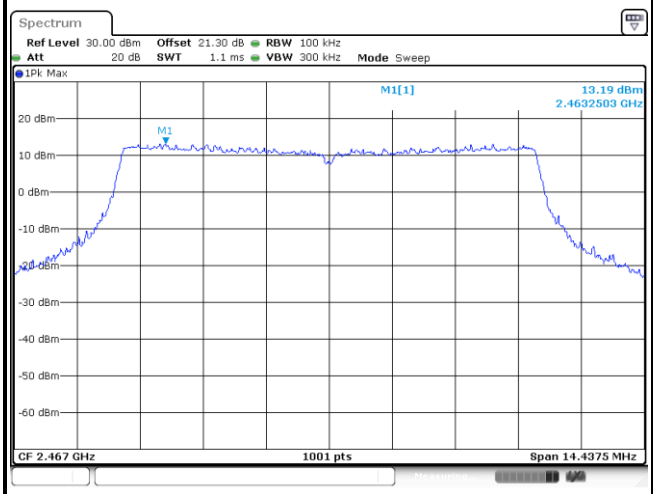
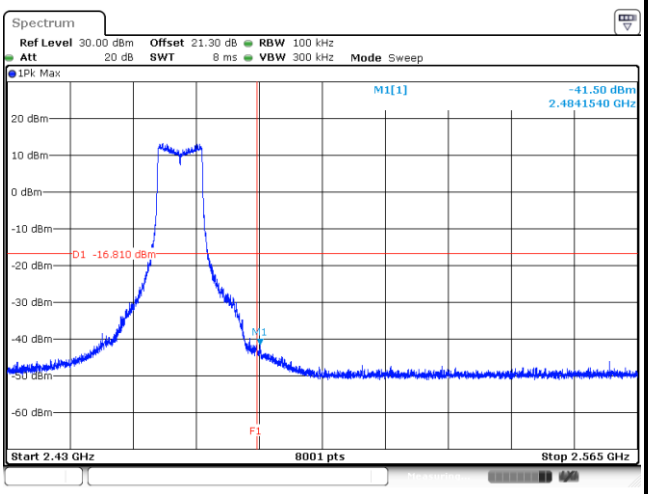
100kHz PSD reference Level	Channel Plot
	Left Blank

Spurious Emission 30MHz~3GHz	Spurious Emission 2GHz~25GHz
	

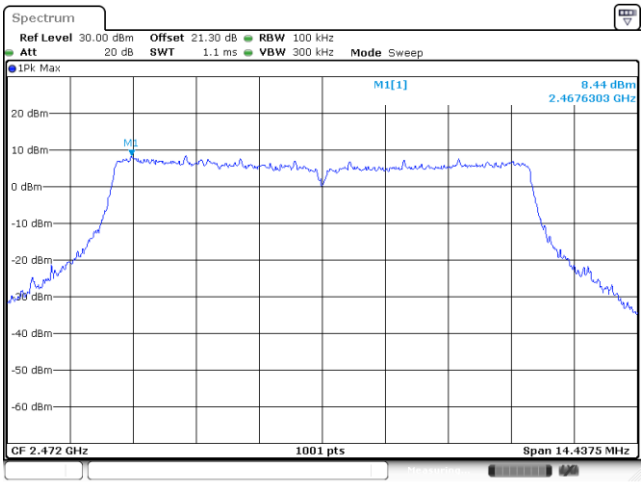
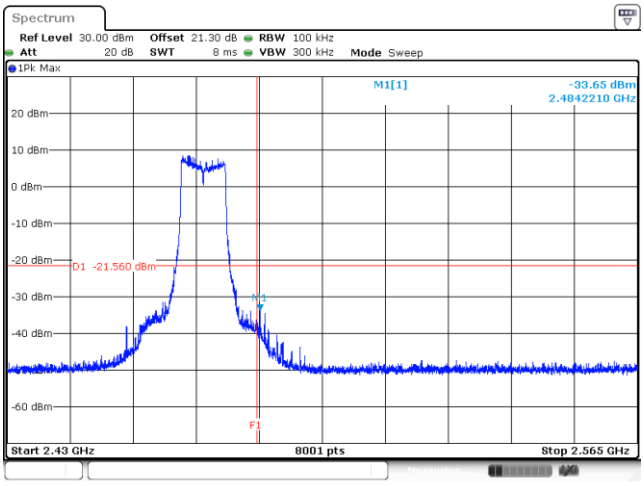
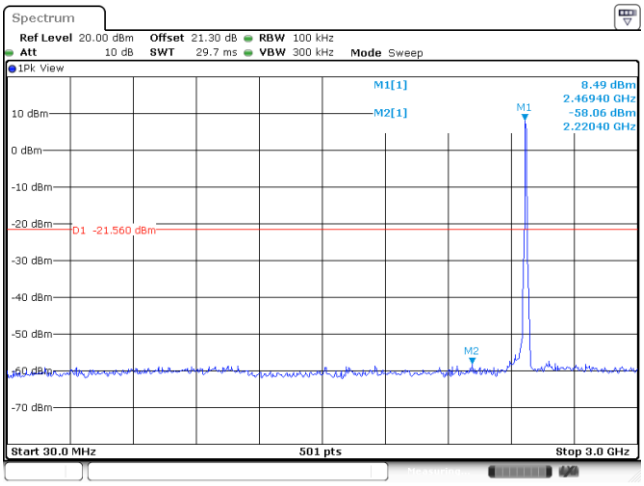
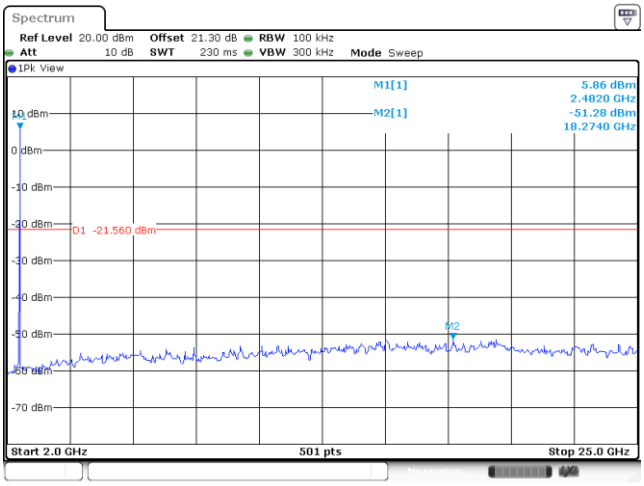
Test Mode :	802.11ax HE10 Full RU	Test Channel :	11

100kHz PSD reference Level	Channel Plot
	

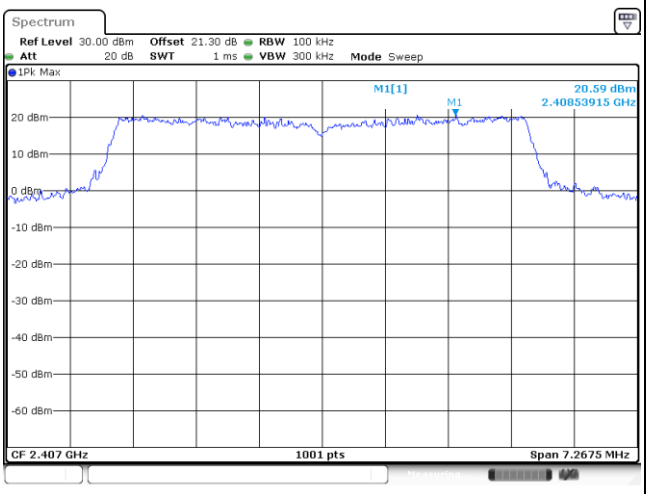
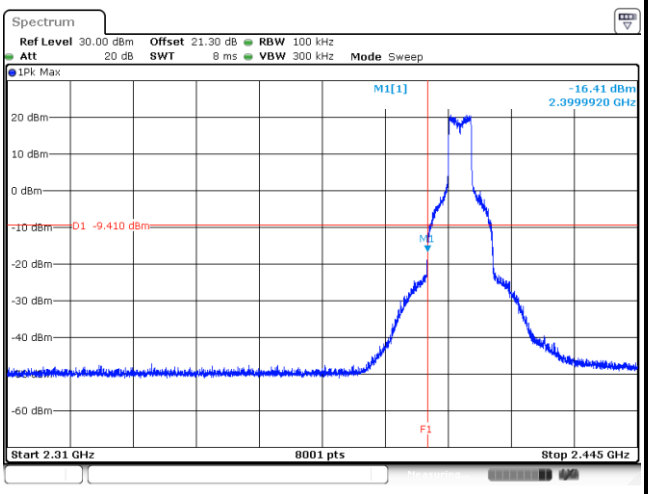
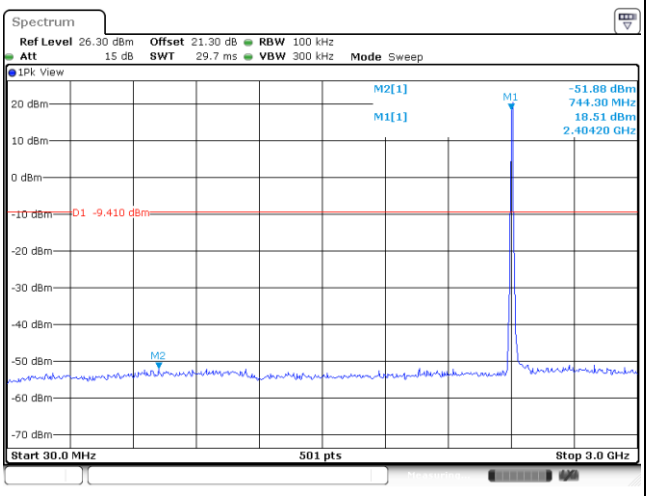
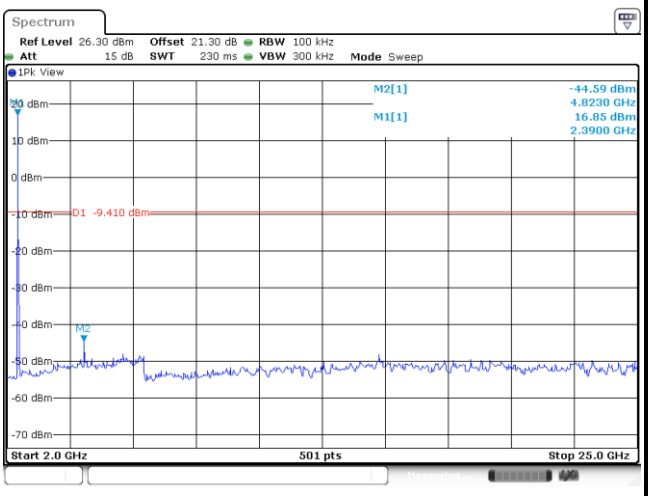
Test Mode :	802.11ax HE10 Full RU	Test Channel :	12

100kHz PSD reference Level	Channel Plot
	

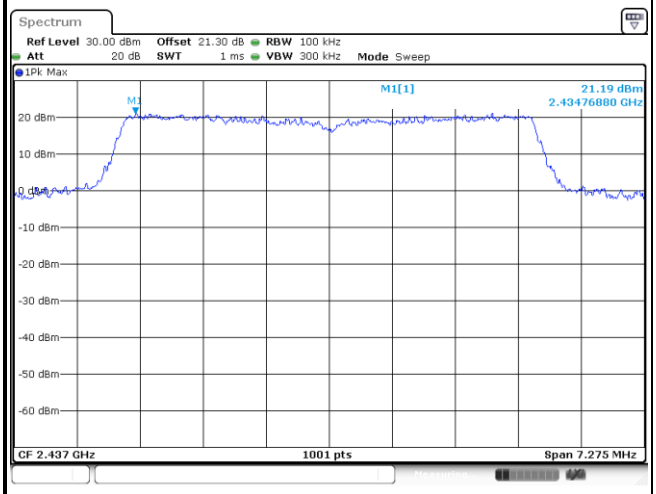
Test Mode :	802.11ax HE10 Full RU	Test Channel :	13

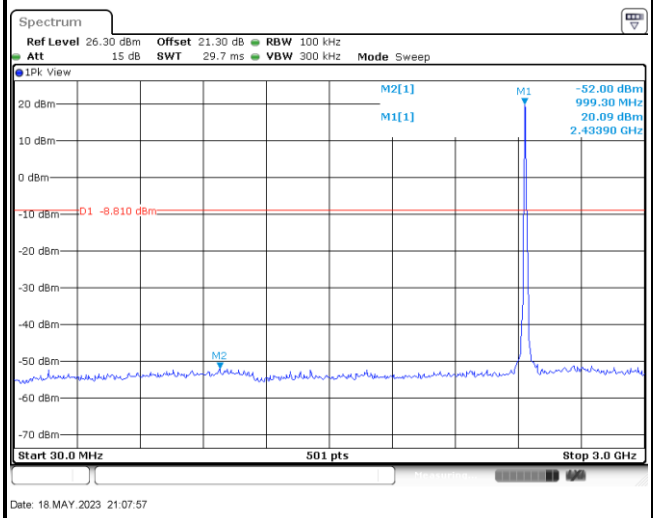
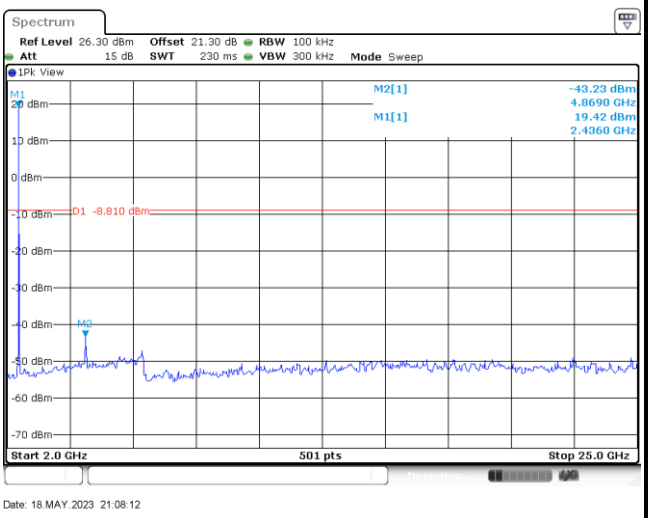
100kHz PSD reference Level	Channel Plot
	
Spurious Emission 30MHz~3GHz	**Spurious Emission 2GHz~25GHz**
	

Test Mode :	802.11ax HE5 Full RU	Test Channel :	00

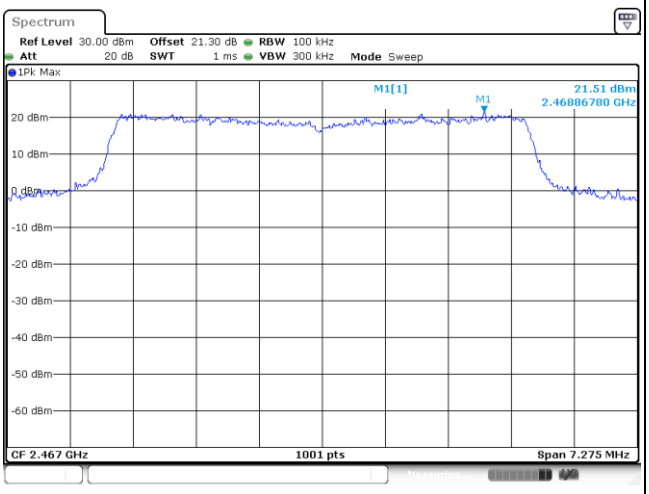
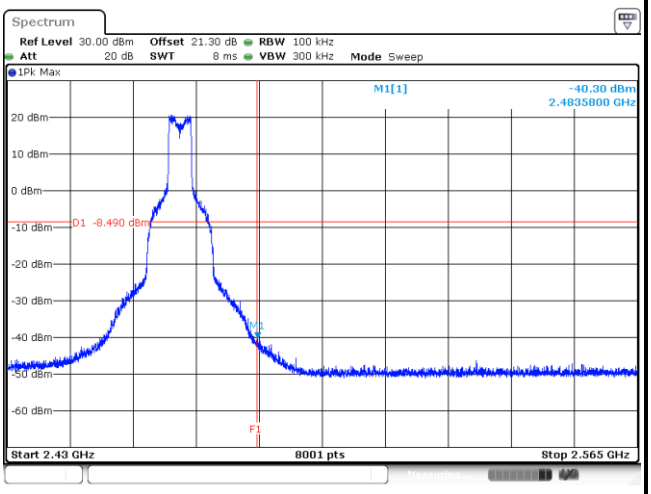
100kHz PSD reference Level	Channel Plot
	
Spurious Emission 30MHz~3GHz	Spurious Emission 2GHz~25GHz
	

Test Mode :	802.11ax HE5 Full RU	Test Channel :	06

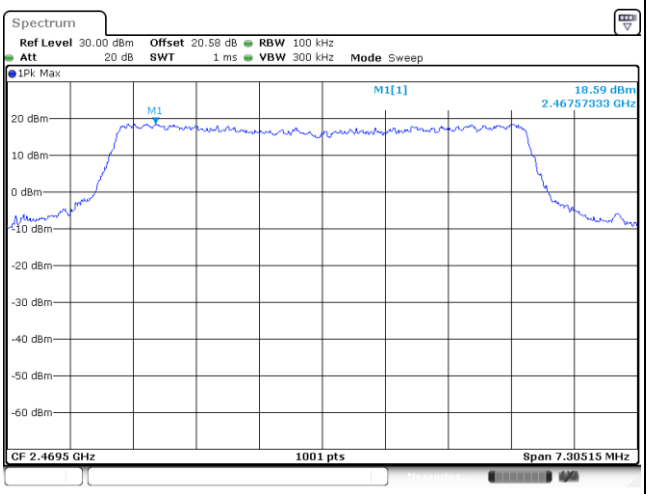
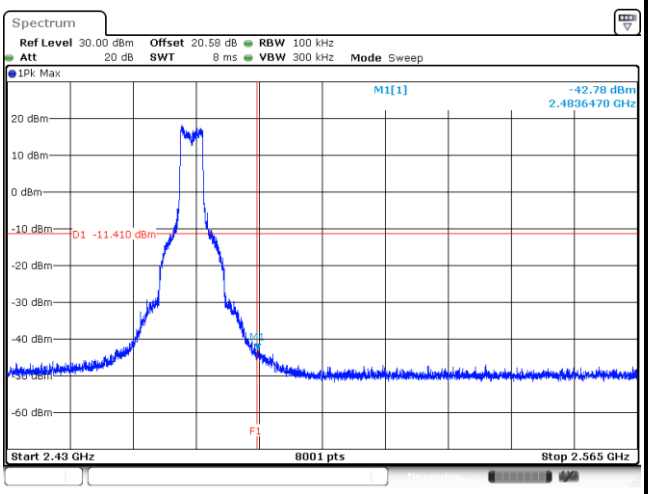
100kHz PSD reference Level	Channel Plot
	Left Blank

Spurious Emission 30MHz~3GHz	Spurious Emission 2GHz~25GHz
	

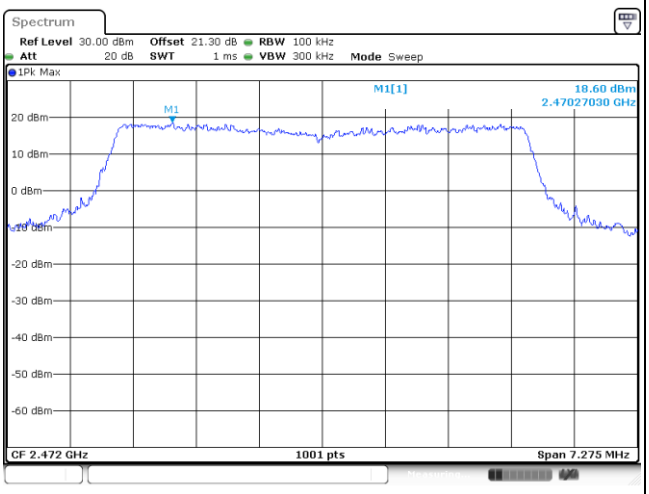
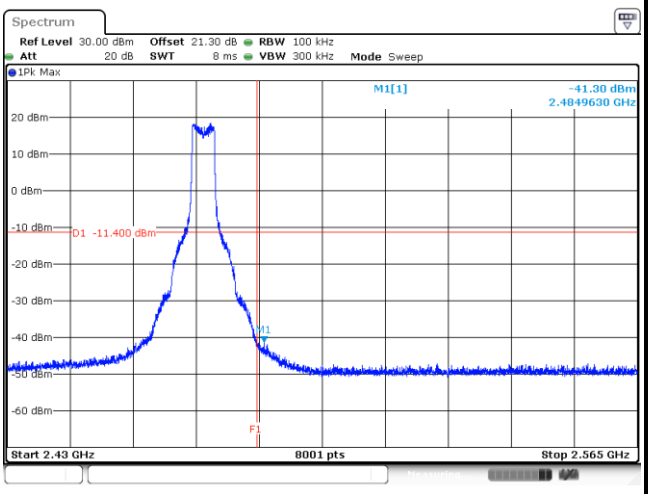
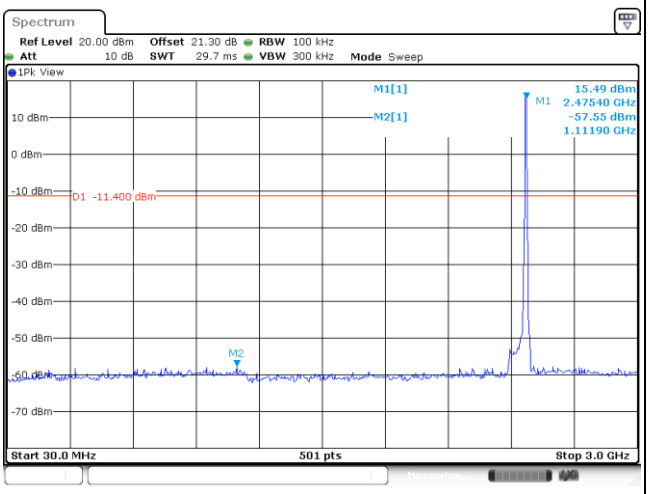
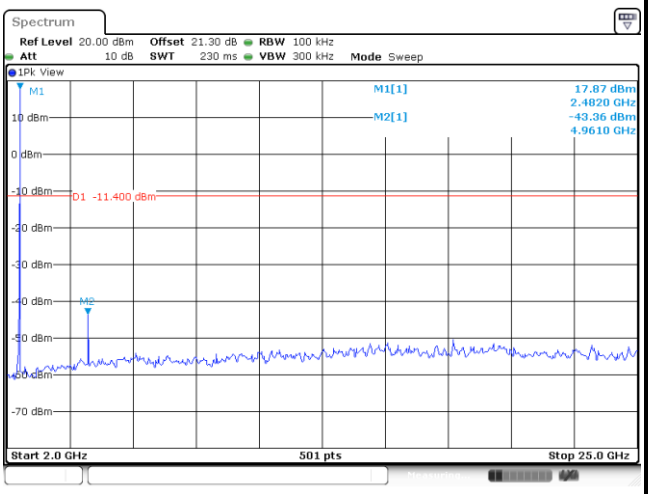
Test Mode :	802.11ax HE5 Full RU	Test Channel :	12

100kHz PSD reference Level	Channel Plot
	

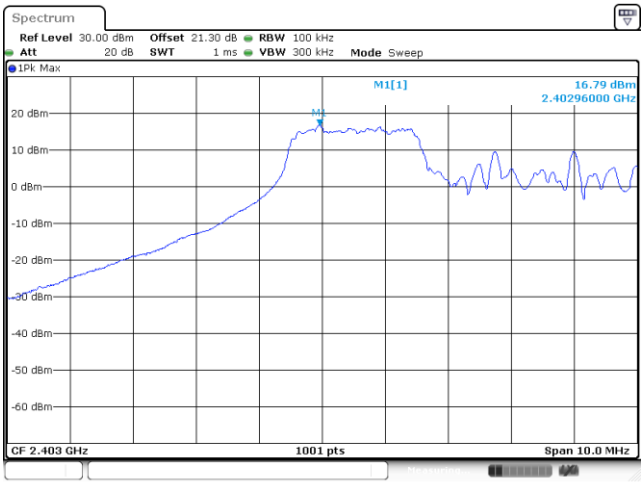
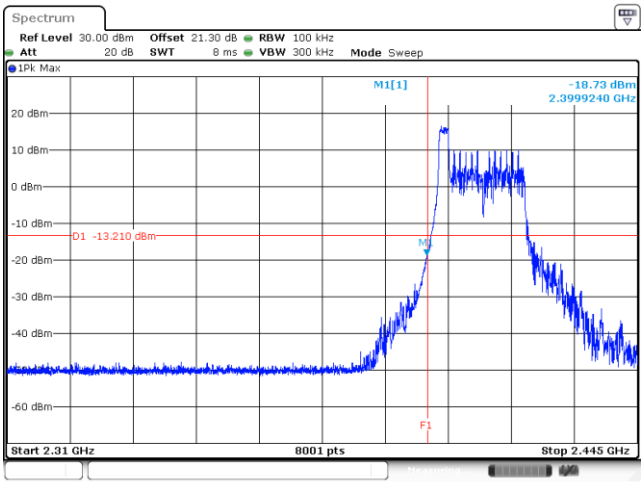
Test Mode :	802.11ax HE5 Full RU	Test Channel :	12.5

100kHz PSD reference Level	Channel Plot
	

Test Mode :	802.11ax HE5 Full RU	Test Channel :	13

100kHz PSD reference Level	Channel Plot
	
Spurious Emission 30MHz~3GHz	**Spurious Emission 2GHz~25GHz**
	

Test Mode :	802.11ax HE20 Single RU	Test Channel :	01

100kHz PSD reference Level	Channel Plot
	
Spurious Emission 30MHz~3GHz	**Spurious Emission 2GHz~25GHz**