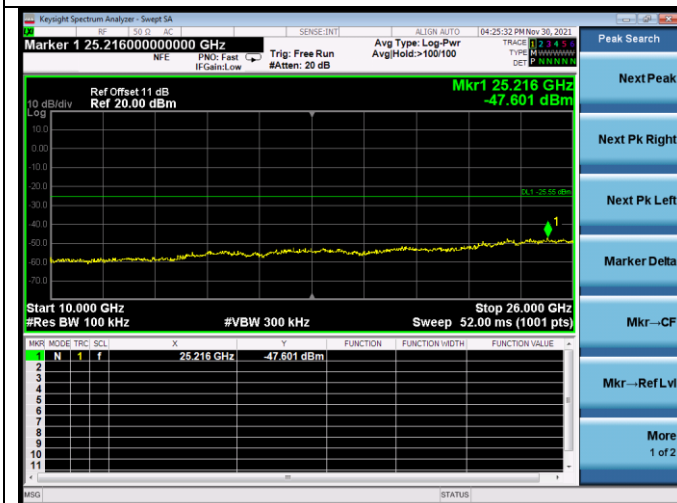
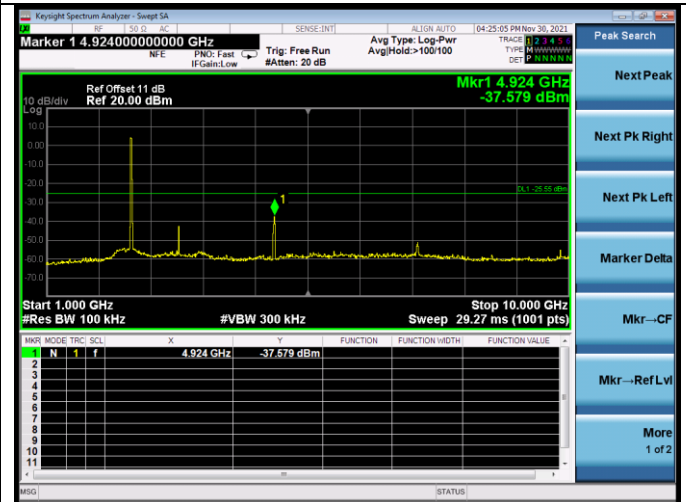
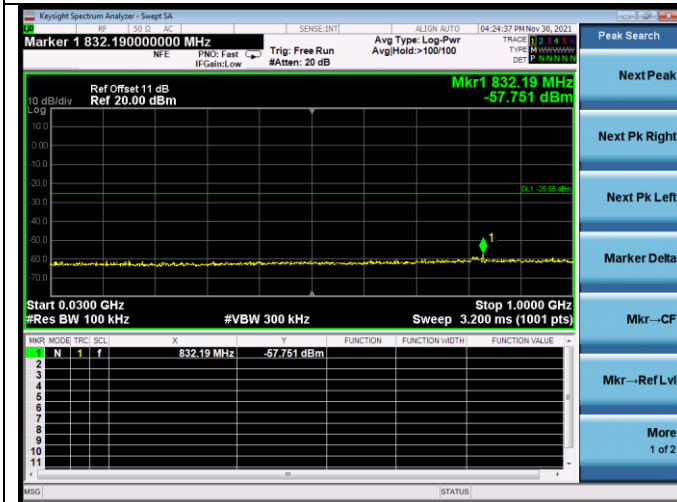
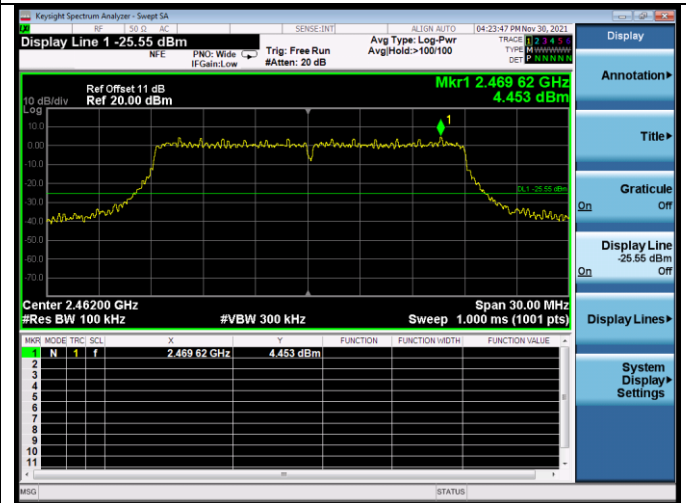
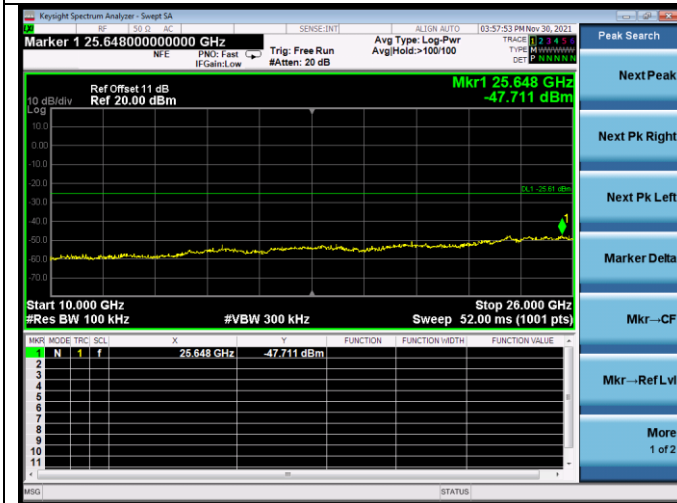
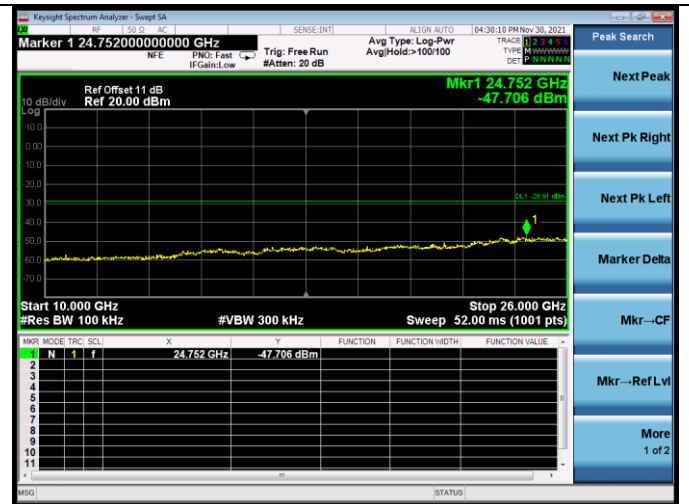
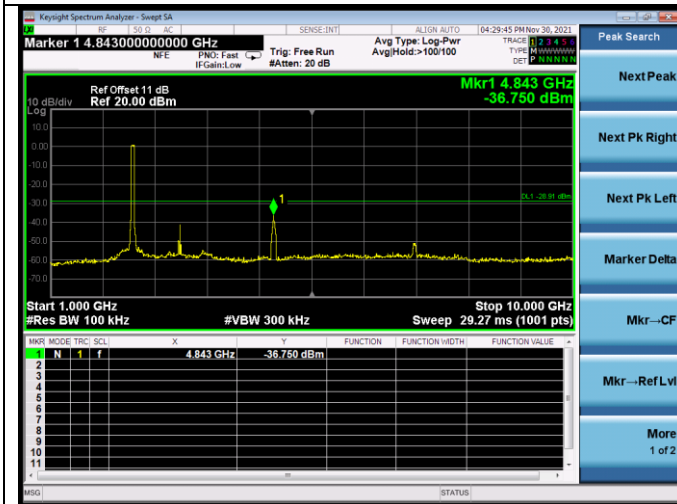
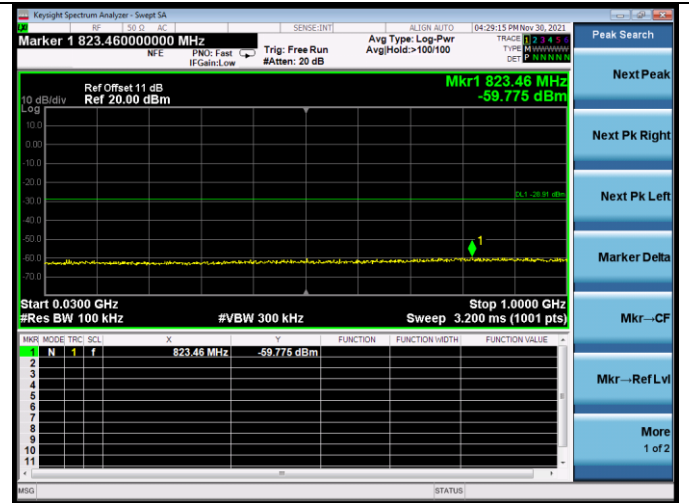
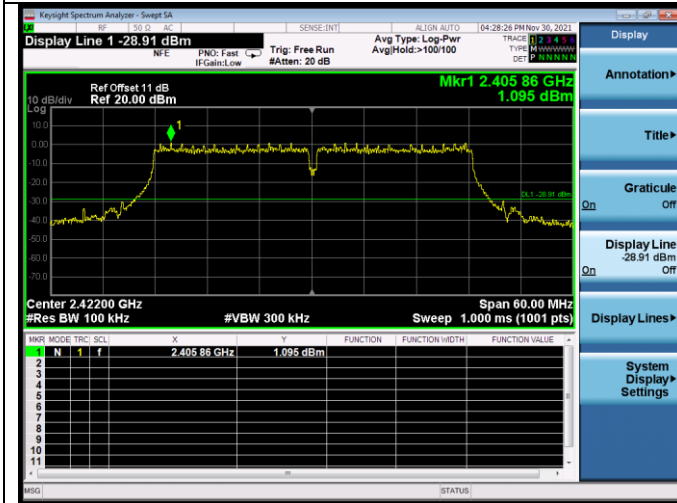


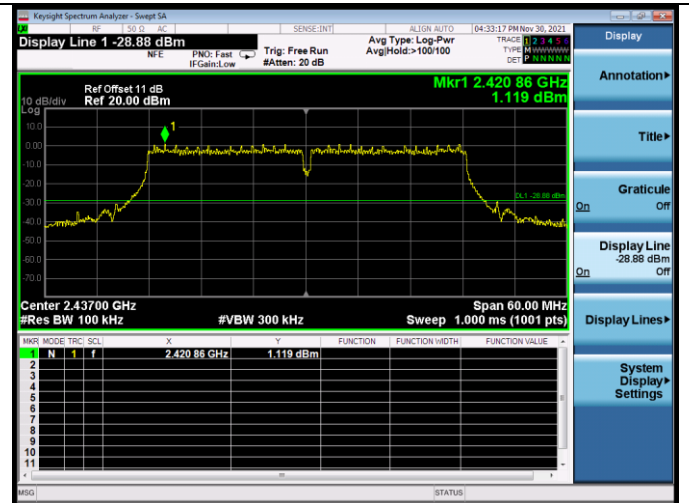
Test CH11: 2462MHz

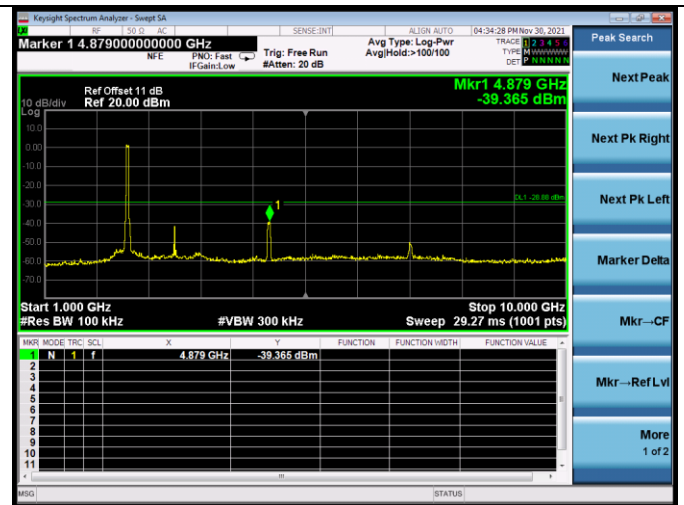
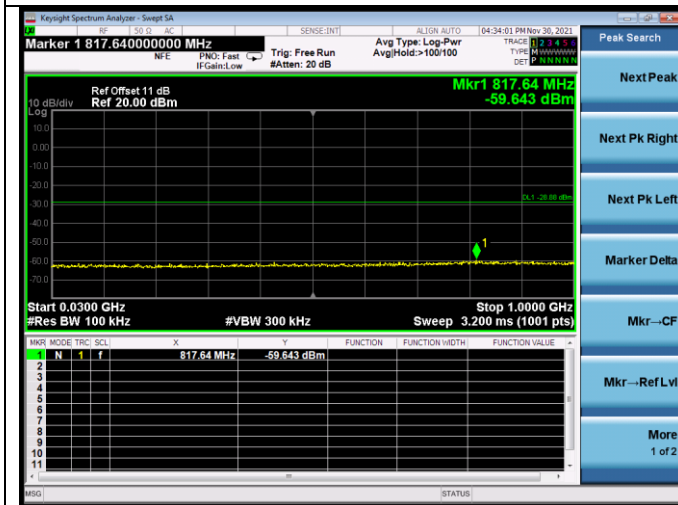


Test Mode: IEEE 802.11n HT40
Test CH1: 2422MHz

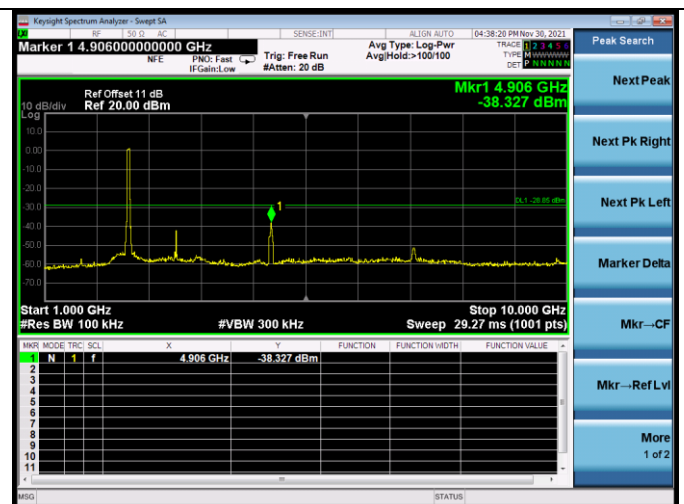
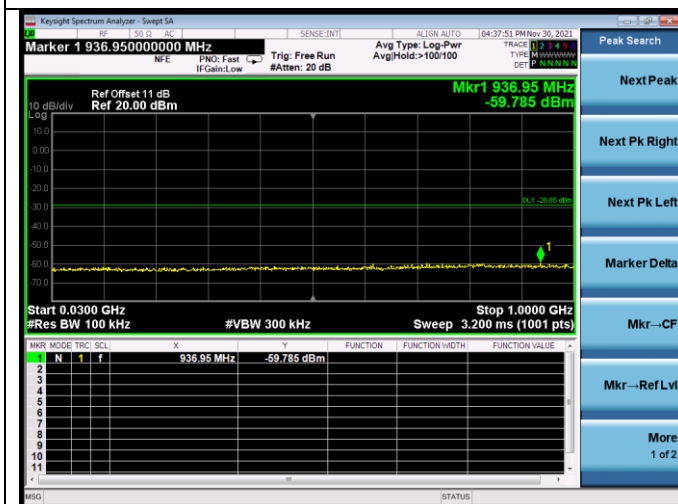
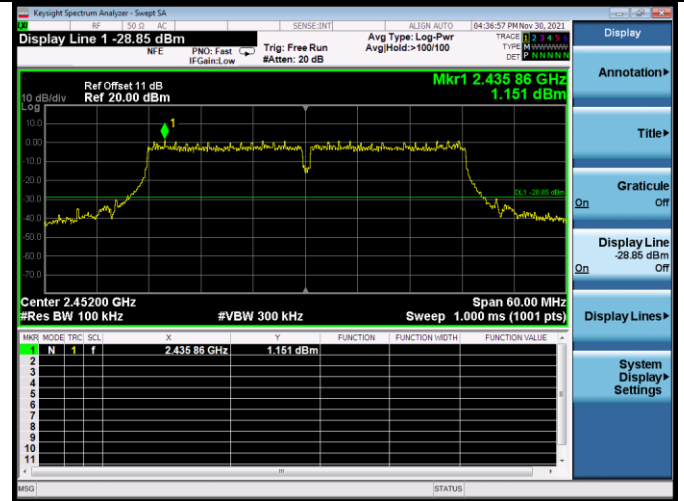
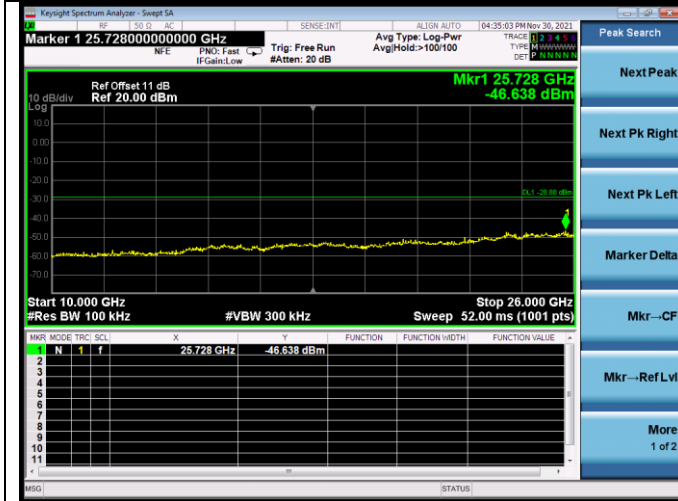


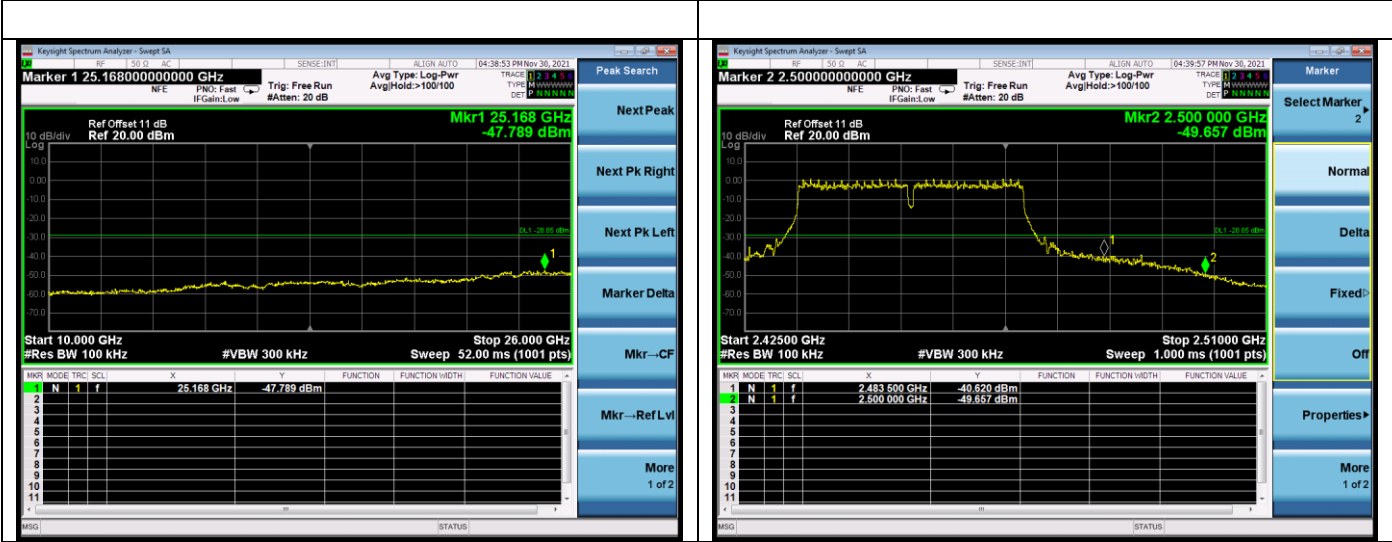
Test CH6: 2437MHz





Test CH11: 2452MHz





6. BAND EDGE COMPLIANCE TEST

6.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Apr.07,21	1 Year
2.	Amplifier	Agilent	8449B	3008A02495	Apr.07,21	1 Year
3.	Horn Antenna	ETC	MCTD 1209	DRH15F03006	Jul.26,21	1 Year
4.	RF Cable	Hubersuhner	SUCOFLEX-106	505238/6	Apr.07,21	1 Year

6.2. Limit

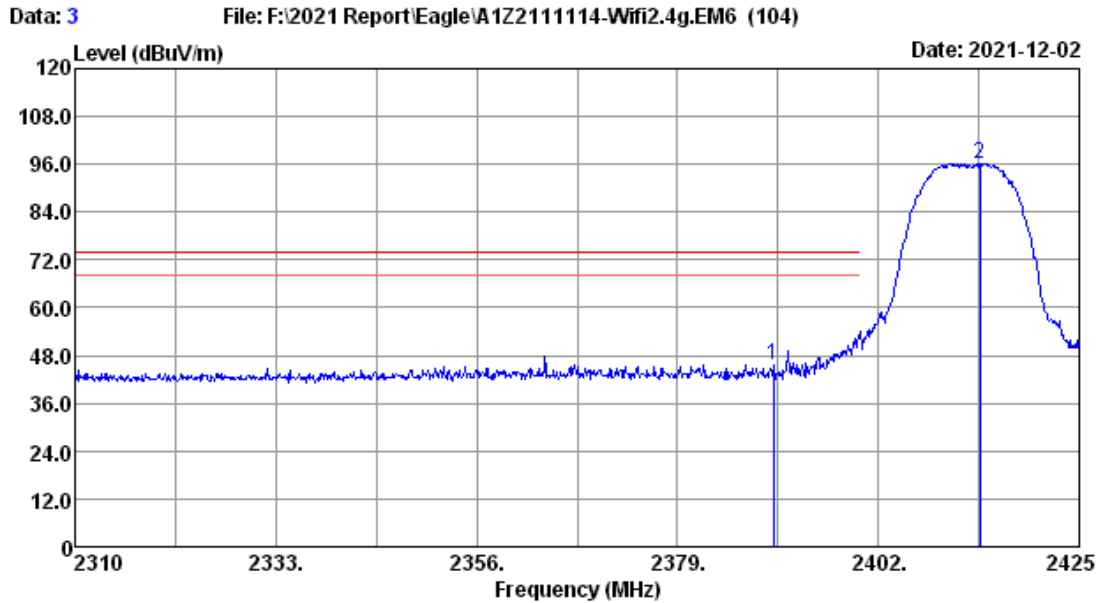
All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

6.3. Test Procedure

1. The EUT is placed on a turntable, which is 1.5m above the ground plane and worked at highest radiated power.
2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
 - (a) PEAK: RBW=1MHz; VBW=3MHz; Sweep=AUTO
 - (b) AVERAGE: RBW=1MHz; VBW=10Hz; Sweep=AUTO

6.4. Test Results

Pass (The testing data was attached in the next pages.)

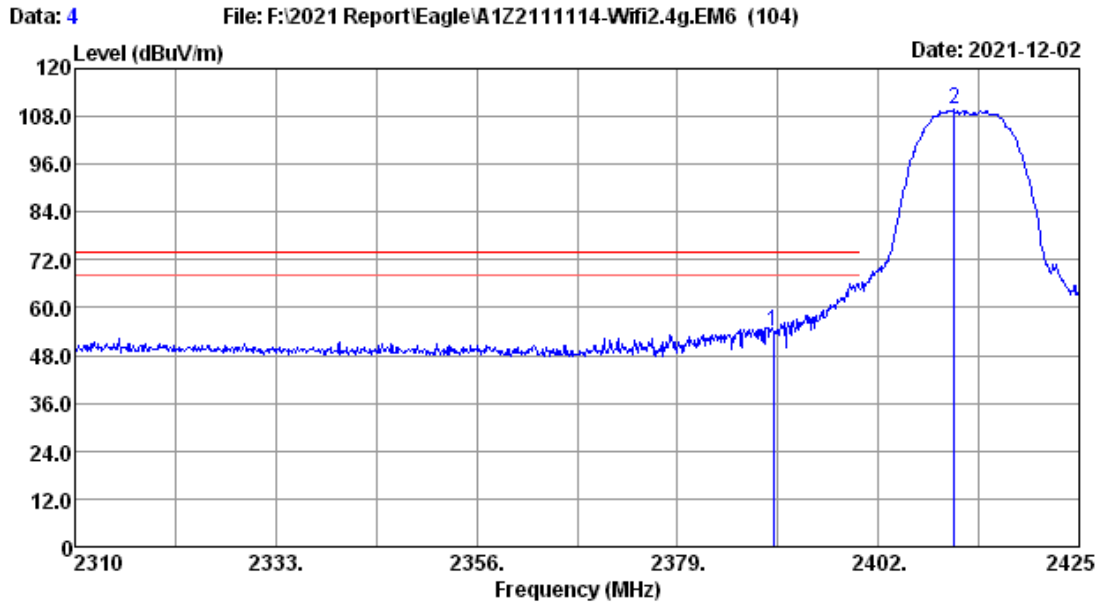


Site no.	: 3m Chamber	Data no.	: 3
Dis. / Ant.	: 3m 2021 MCTD1209-3006	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 22.1°C/51.5%	Engineer	: Lynn
Test Mode	: 11b 2412MHz Tx		

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	27.89	1.65	51.26	35.24	45.56	74.00	28.44	Peak
2	2413.62	27.93	1.66	101.93	35.24	96.28	-----	-----	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
-Amp factor.

2. The emission levels that are 20dB below the official
limit are not reported.

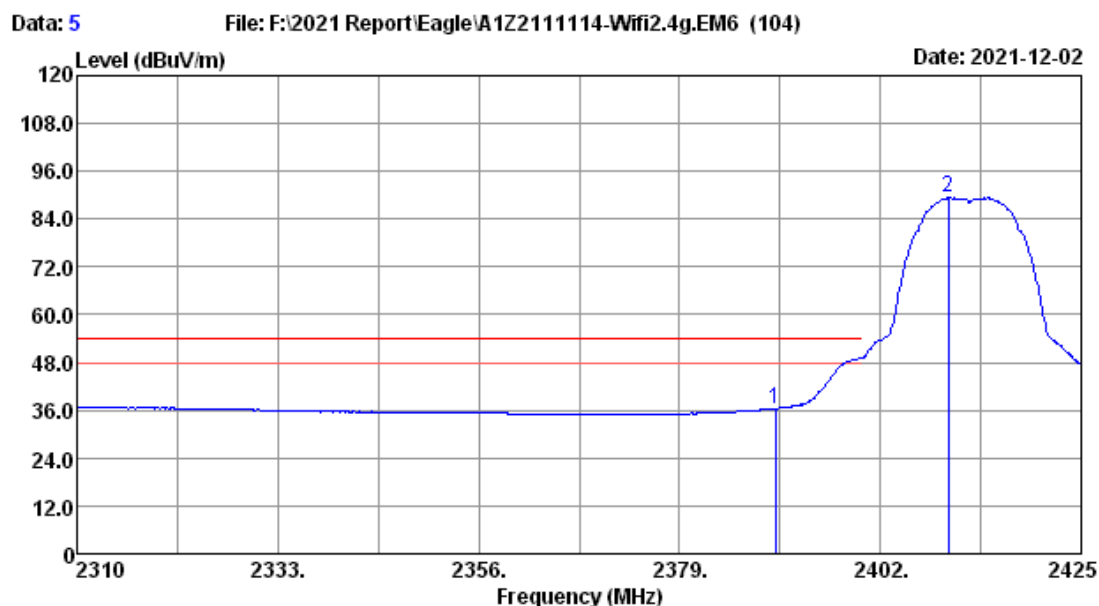


Site no.	: 3m Chamber	Data no.	: 4
Dis. / Ant.	: 3m 2021 MCTD1209-3006	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 22.1°C/51.5%	Engineer	: Lynn
Test Mode	: 11b 2412MHz Tx		

No.	Freq. (MHz)	Ant.	Cable	Reading (dBuV)	Amp	Emission		Margin (dB)	Remark
		Factor (dB/m)	Loss (dB)		factor (dB)	Level (dBuV/m)	Limits (dBuV/m)		
1	2390.00	27.89	1.65	59.80	35.24	54.10	74.00	19.90	Peak
2	2410.74	27.93	1.66	115.32	35.24	109.67	-----	-----	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
-Amp factor.

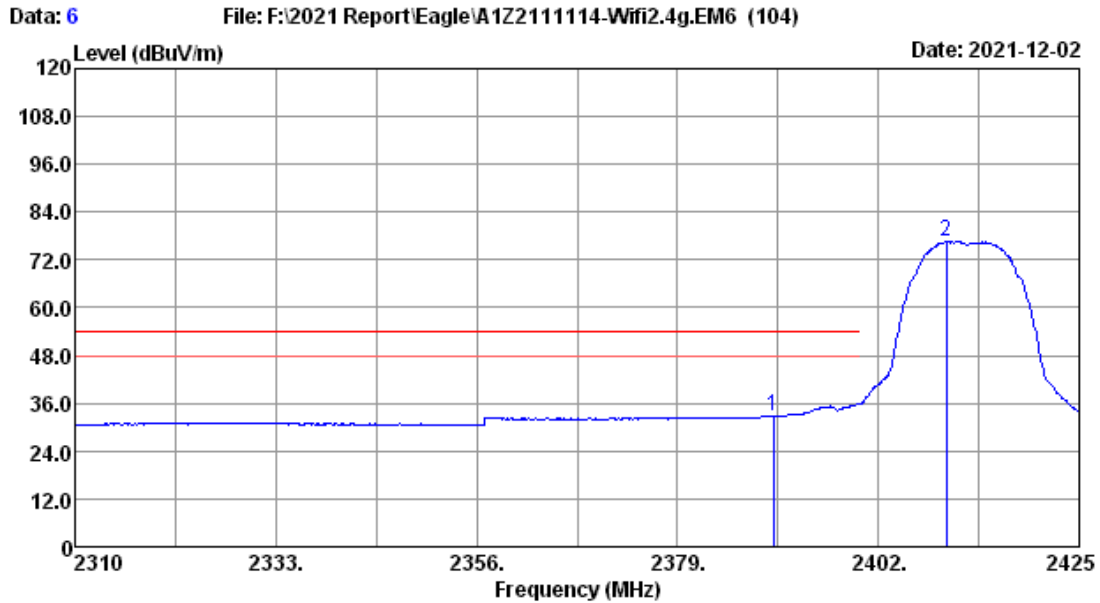
2. The emission levels that are 20dB below the official
limit are not reported.



Site no. : 3m Chamber Data no. : 5
 Dis. / Ant. : 3m 2021 MCTD1209-3006 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 22.1°C/51.5% Engineer : Lynn
 Test Mode : 11b 2412MHz Tx

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	27.89	1.65	42.15	35.24	36.45	54.00	17.55	Average
2	2409.82	27.93	1.66	95.06	35.24	89.41	-----	-----	Average

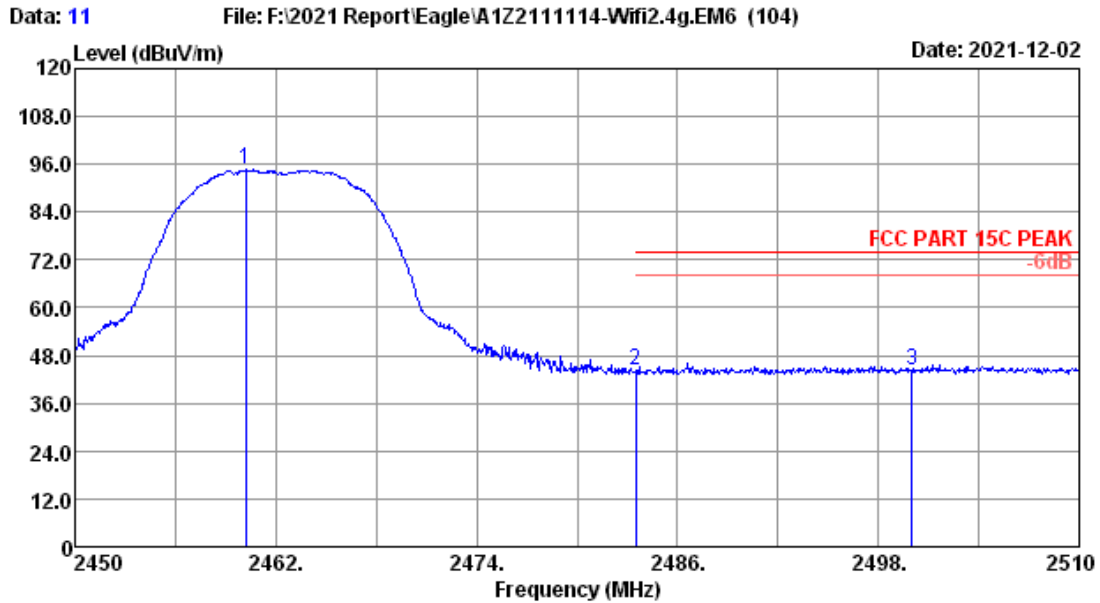
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no. : 3m Chamber Data no. : 6
 Dis. / Ant. : 3m 2021 MCTD1209-3006 Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 22.1°C/51.5% Engineer : Lynn
 Test Mode : 11b 2412MHz Tx

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	27.89	1.65	38.47	35.24	32.77	54.00	21.23	Average
2	2409.82	27.93	1.66	82.27	35.24	76.62	-----	-----	Average

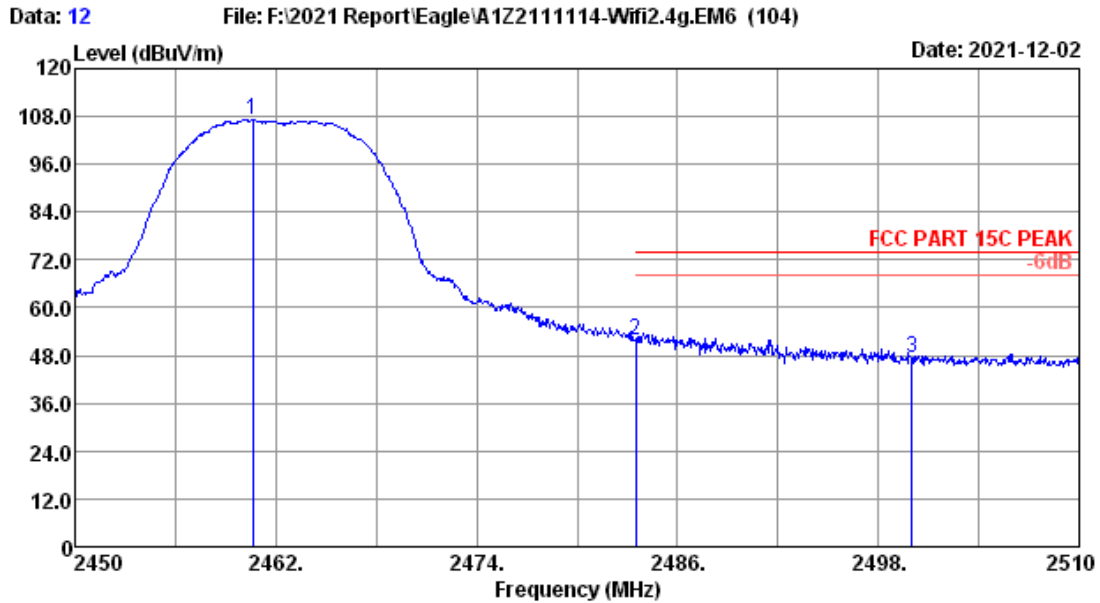
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no. : 3m Chamber Data no. : 11
 Dis. / Ant. : 3m 2021 MCTD1209-3006 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 22.1°C/51.5% Engineer : Lynn
 Test Mode : 11b 2462MHz Tx

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2460.20	28.03	1.68	100.12	35.25	94.58	-----	-----	Peak
2	2483.50	28.07	1.69	49.67	35.25	44.18	74.00	29.82	Peak
3	2500.00	28.10	1.70	49.71	35.25	44.26	74.00	29.74	Peak

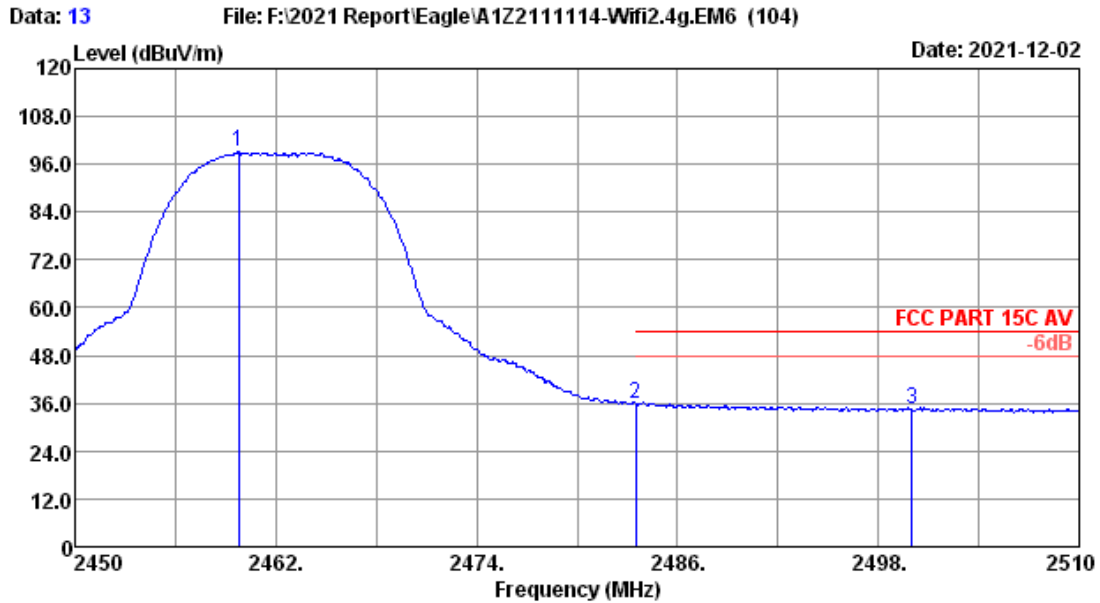
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no.	: 3m Chamber	Data no.	: 12
Dis. / Ant.	: 3m 2021 MCTD1209-3006	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 22.1°C/51.5%	Engineer	: Lynn
Test Mode	: 11b 2462MHz Tx		

No.	Freq. (MHz)	Ant.		Reading (dBuV)	Amp factor (dB)	Emission		Limits (dBuV/m)	Margin (dB)	Remark
		Factor (dB/m)	Cable Loss (dB)			Level (dBuV/m)				
1	2460.62	28.03	1.68	112.67	35.25	107.13	-----	-----		Peak
2	2483.50	28.07	1.69	57.33	35.25	51.84	74.00	22.16		Peak
3	2500.00	28.10	1.70	52.93	35.25	47.48	74.00	26.52		Peak

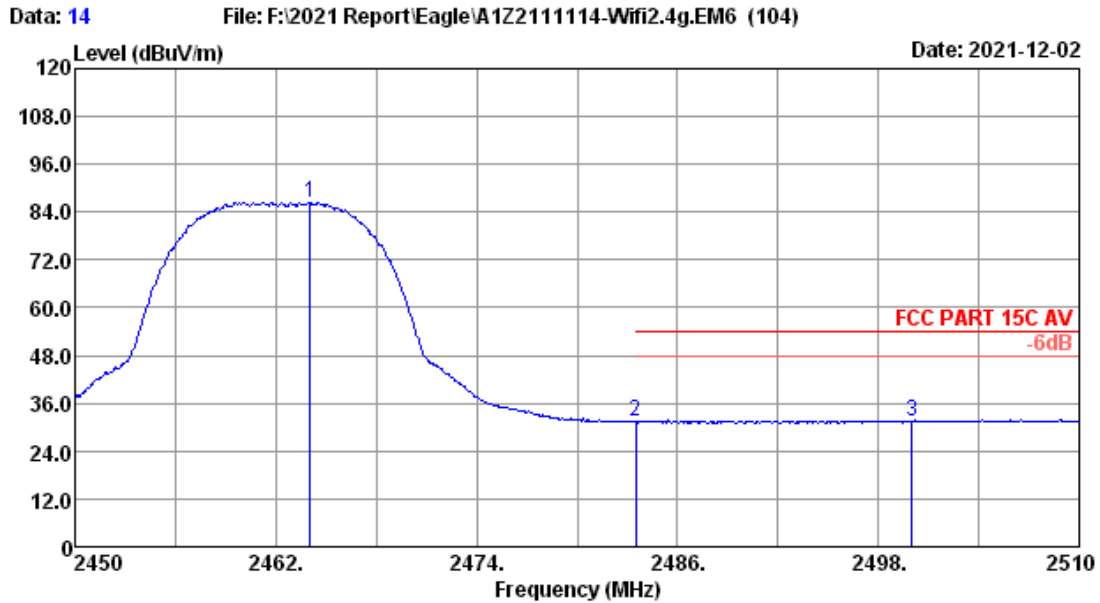
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
-Amp factor.
2. The emission levels that are 20dB below the official
limit are not reported.



Site no. : 3m Chamber Data no. : 13
 Dis. / Ant. : 3m 2021 MCTD1209-3006 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 22.1°C/51.5% Engineer : Lynn
 Test Mode : 11b 2462MHz Tx

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2459.78	28.03	1.68	104.56	35.25	99.02	-----	-----	Average
2	2483.50	28.07	1.69	41.56	35.25	36.07	54.00	17.93	Average
3	2500.00	28.10	1.70	39.98	35.25	34.53	54.00	19.47	Average

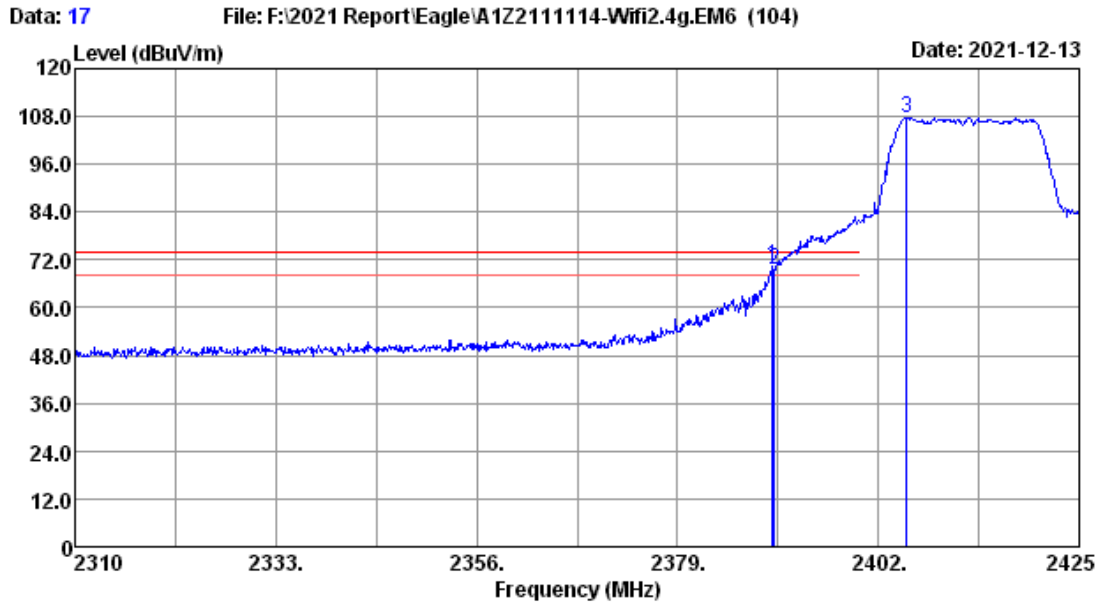
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no. : 3m Chamber Data no. : 14
 Dis. / Ant. : 3m 2021 MCTD1209-3006 Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 22.1°C/51.5% Engineer : Lynn
 Test Mode : 11b 2462MHz Tx

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2464.04	28.03	1.68	92.04	35.25	86.50	-----	-----	Average
2	2483.50	28.07	1.69	36.82	35.25	31.33	54.00	22.67	Average
3	2500.00	28.10	1.70	36.87	35.25	31.42	54.00	22.58	Average

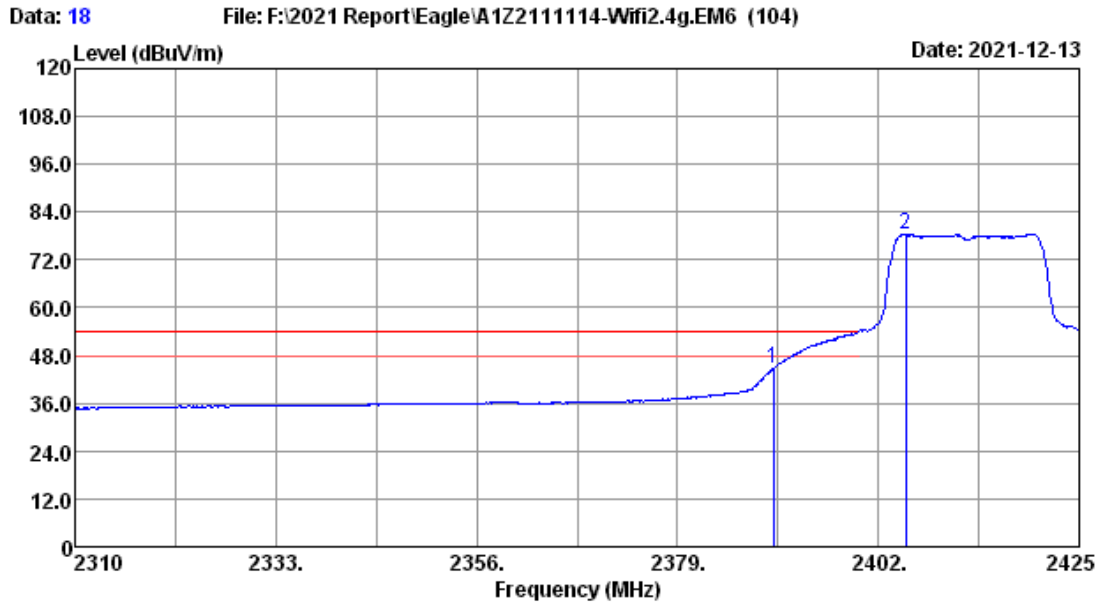
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no.	: 3m Chamber	Data no.	: 17
Dis. / Ant.	: 3m 2021 MCTD1209-3006	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 22.1°C/51.5%	Engineer	: Lynn
Test Mode	: 11g 2412MHz Tx		

No.	Freq. (MHz)	Ant.		Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission		Margin (dB)	Remark
		Factor (dB/m)					Level (dBuV/m)	Limits (dBuV/m)		
1	2389.93	27.89		1.65	75.93	35.24	70.23	74.00	3.77	Peak
2	2390.04	27.89		1.65	75.12	35.24	69.42	74.00	4.58	Peak
3	2405.22	27.93		1.66	113.40	35.24	107.75	-----	-----	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
-Amp factor.
2. The emission levels that are 20dB below the official
limit are not reported.

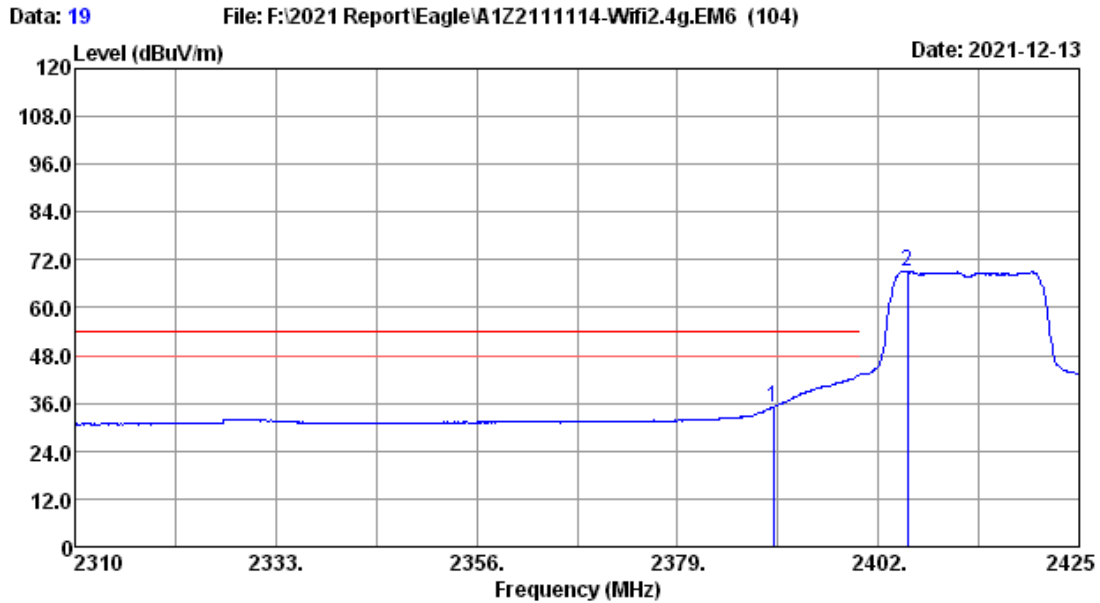


Site no.	: 3m Chamber	Data no.	: 18
Dis. / Ant.	: 3m 2021 MCTD1209-3006	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C AV		
Env. / Ins.	: 22.1°C/51.5%	Engineer	: Lynn
Test Mode	: 11g 2412MHz Tx		

No.	Freq. (MHz)	Ant.	Cable	Reading (dBuV)	Amp	Emission		Margin (dB)	Remark
		Factor (dB/m)	Loss (dB)		factor (dB)	Level (dBuV/m)	Limits (dBuV/m)		
1	2390.00	27.89	1.65	50.52	35.24	44.82	54.00	9.18	Average
2	2405.11	27.93	1.66	84.11	35.24	78.46	-----	-----	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
-Amp factor.

2. The emission levels that are 20dB below the official
limit are not reported.

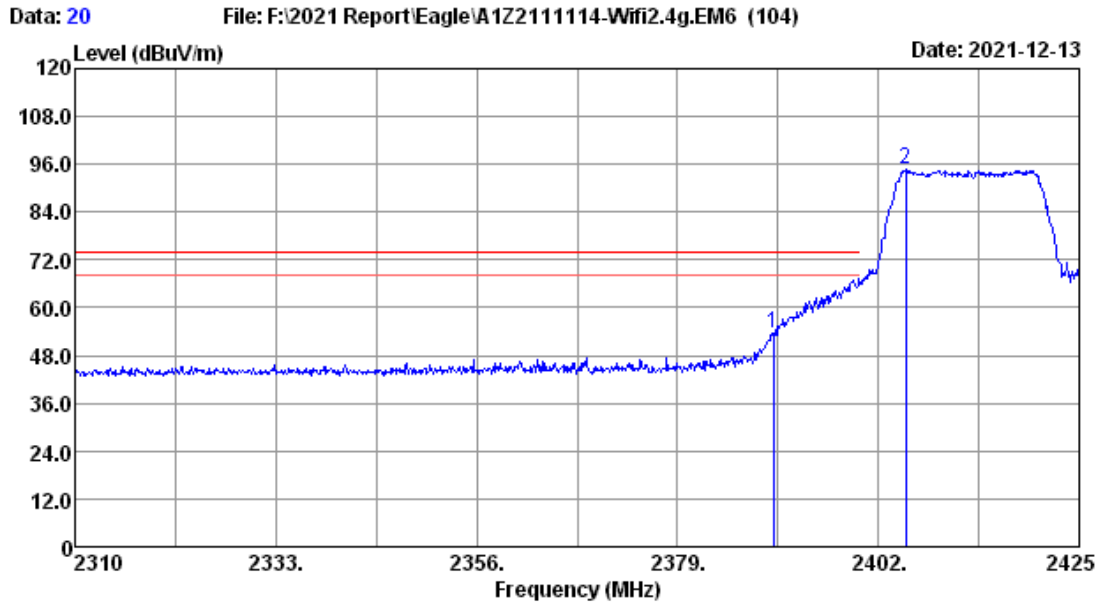


Site no.	: 3m Chamber	Data no.	: 19
Dis. / Ant.	: 3m 2021 MCTD1209-3006	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C AV		
Env. / Ins.	: 22.1°C/51.5%	Engineer	: Lynn
Test Mode	: 11g 2412MHz Tx		

No.	Freq. (MHz)	Ant.		Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission		Margin (dB)	Remark
		Factor (dB/m)					Level (dBuV/m)	Limits (dBuV/m)		
1	2390.00	27.89		1.65	40.80	35.24	35.10	54.00	18.90	Average
2	2405.34	27.93		1.66	74.89	35.24	69.24	-----	-----	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
-Amp factor.

2. The emission levels that are 20dB below the official
limit are not reported.

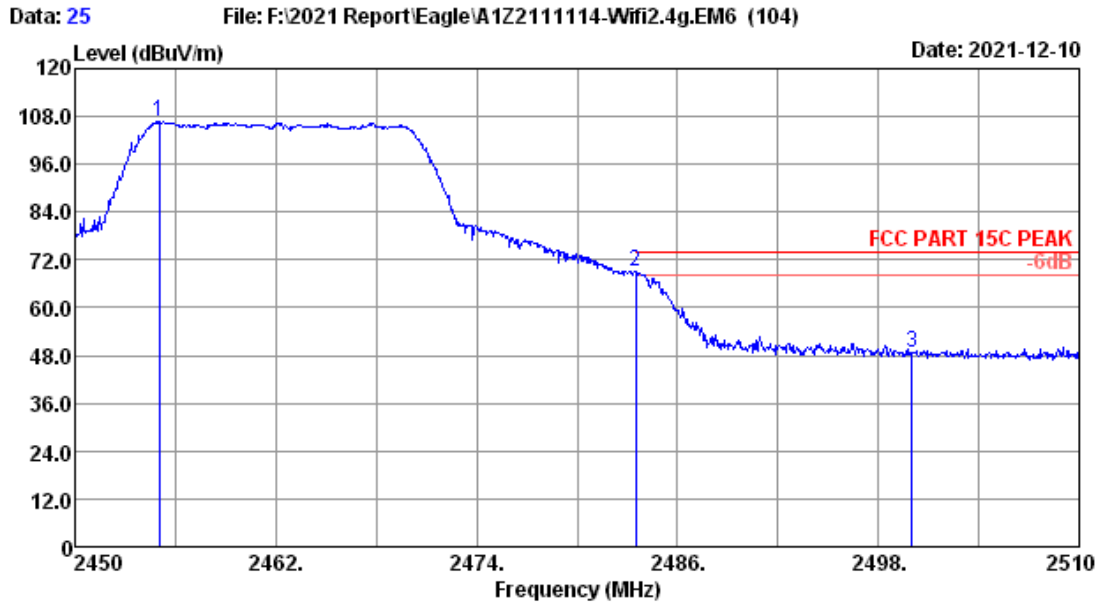


Site no.	: 3m Chamber	Data no.	: 20
Dis. / Ant.	: 3m 2021 MCTD1209-3006	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 22.1°C/51.5%	Engineer	: Lynn
Test Mode	: 11g 2412MHz Tx		

No.	Freq. (MHz)	Ant.		Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission		Margin (dB)	Remark
		Factor (dB/m)					Level (dBuV/m)	Limits (dBuV/m)		
1	2390.00	27.89		1.65	59.13	35.24	53.43	74.00	20.57	Peak
2	2405.11	27.93		1.66	100.24	35.24	94.59	-----	-----	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
-Amp factor.

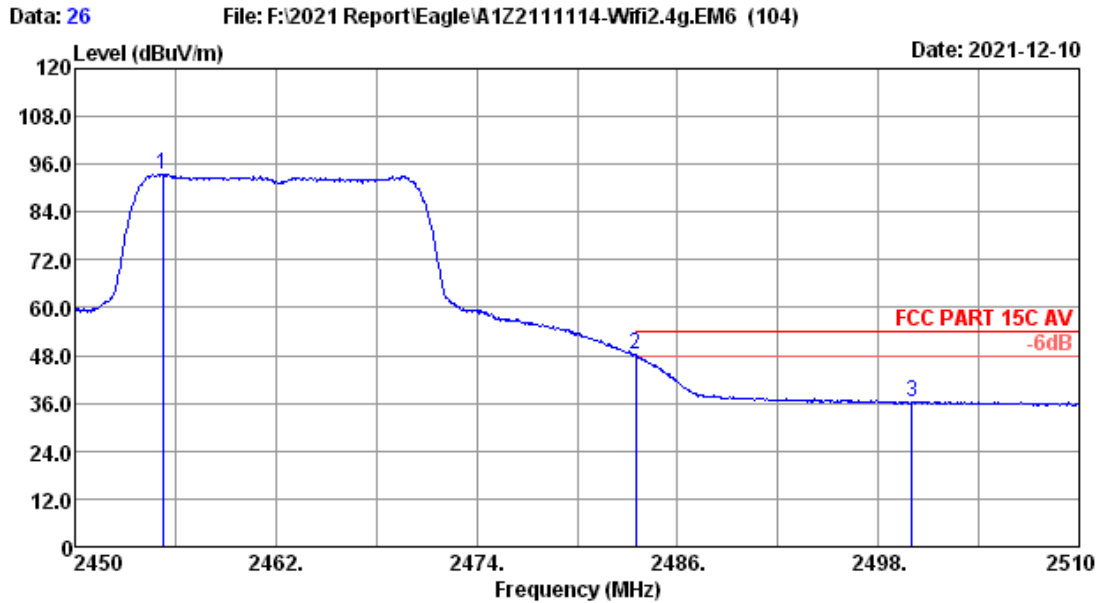
2. The emission levels that are 20dB below the official
limit are not reported.



Site no.	: 3m Chamber	Data no.	: 25
Dis. / Ant.	: 3m 2021 MCTD1209-3006	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 22.1°C/51.5%	Engineer	: Lynn
Test Mode	: 11g 2462MHz Tx		

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2455.04	28.03	1.68	112.24	35.25	106.70	-----	-----	Peak
2	2483.50	28.07	1.69	74.39	35.25	68.90	74.00	5.10	Peak
3	2500.00	28.10	1.70	54.07	35.25	48.62	74.00	25.38	Peak

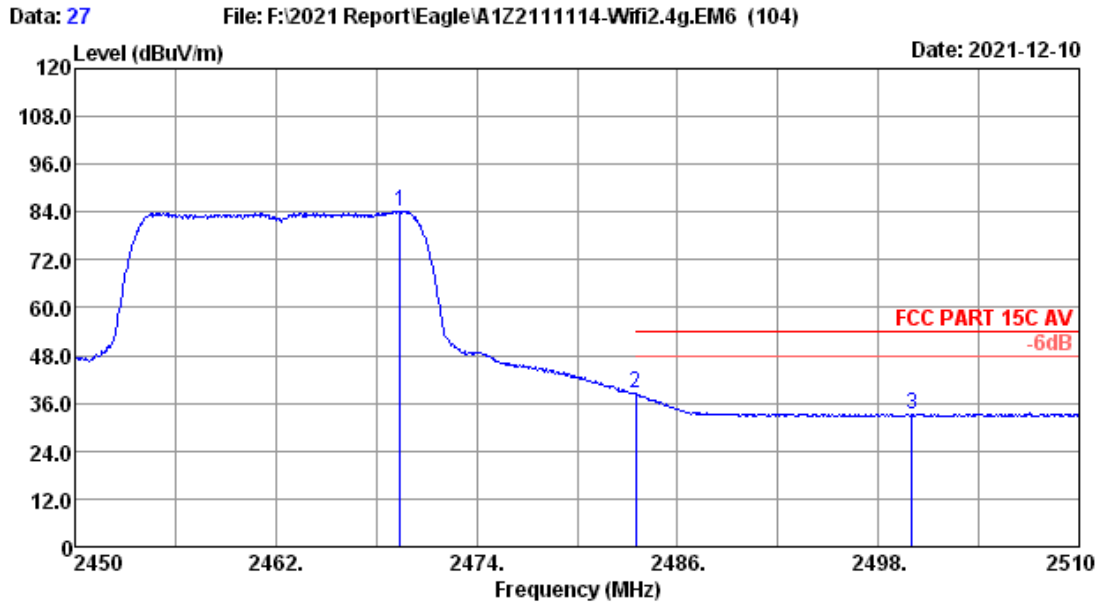
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp factor.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber	Data no. : 26
Dis. / Ant. : 3m 2021 MCTD1209-3006	Ant. pol. : HORIZONTAL
Limit : FCC PART 15C AV	
Env. / Ins. : 22.1°C/51.5%	Engineer : Lynn
Test Mode : 11g 2462MHz Tx	

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2455.22	28.03	1.68	99.13	35.25	93.59	-----	-----	Average
2	2483.50	28.07	1.69	53.56	35.25	48.07	54.00	5.93	Average
3	2500.00	28.10	1.70	41.67	35.25	36.22	54.00	17.78	Average

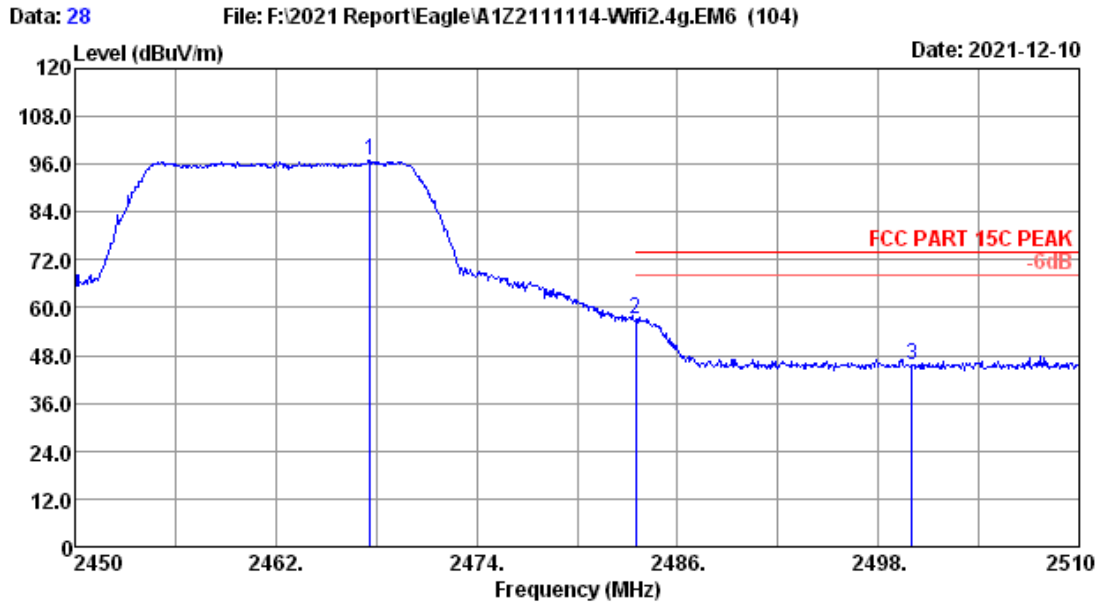
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
-Amp factor.
2. The emission levels that are 20dB below the official
limit are not reported.



Site no. : 3m Chamber Data no. : 27
 Dis. / Ant. : 3m 2021 MCTD1209-3006 Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 22.1°C/51.5% Engineer : Lynn
 Test Mode : 11g 2462MHz Tx

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2469.44	28.03	1.68	89.67	35.25	84.13	-----	-----	Average
2	2483.50	28.07	1.69	43.82	35.25	38.33	54.00	15.67	Average
3	2500.00	28.10	1.70	38.45	35.25	33.00	54.00	21.00	Average

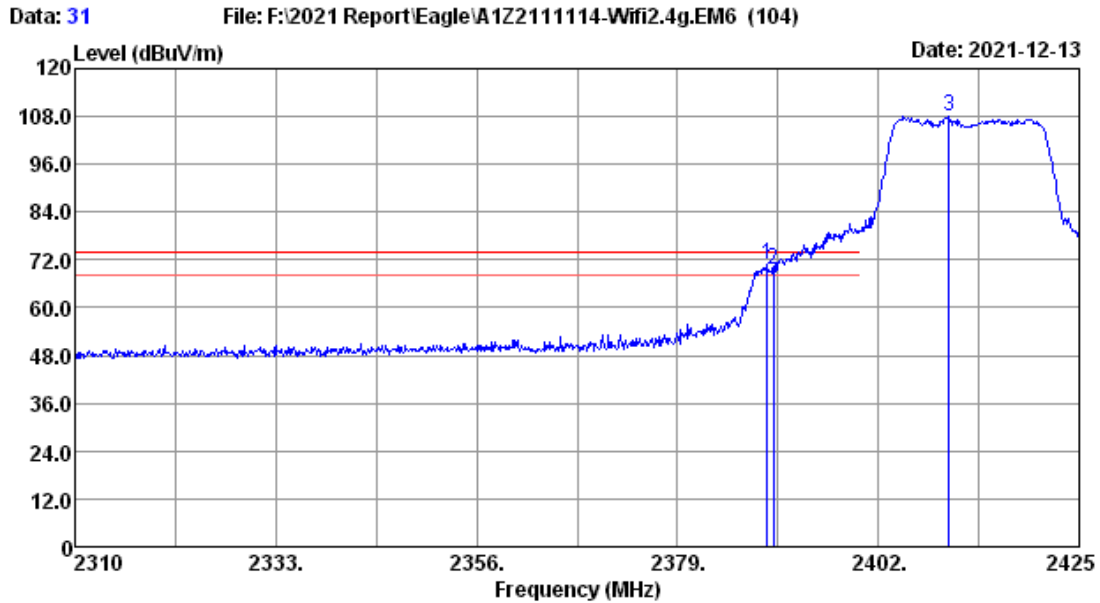
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no.	: 3m Chamber	Data no.	: 28
Dis. / Ant.	: 3m 2021 MCTD1209-3006	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 22.1°C/51.5%	Engineer	: Lynn
Test Mode	: 11g 2462MHz Tx		

No.	Freq. (MHz)	Ant.		Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission		Limits (dBuV/m)	Margin (dB)	Remark
		Factor (dB/m)					Level (dBuV/m)				
1	2467.64	28.03		1.68	102.45	35.25	96.91	-----	-----		Peak
2	2483.50	28.07		1.69	62.65	35.25	57.16	74.00	16.84		Peak
3	2500.00	28.10		1.70	51.21	35.25	45.76	74.00	28.24		Peak

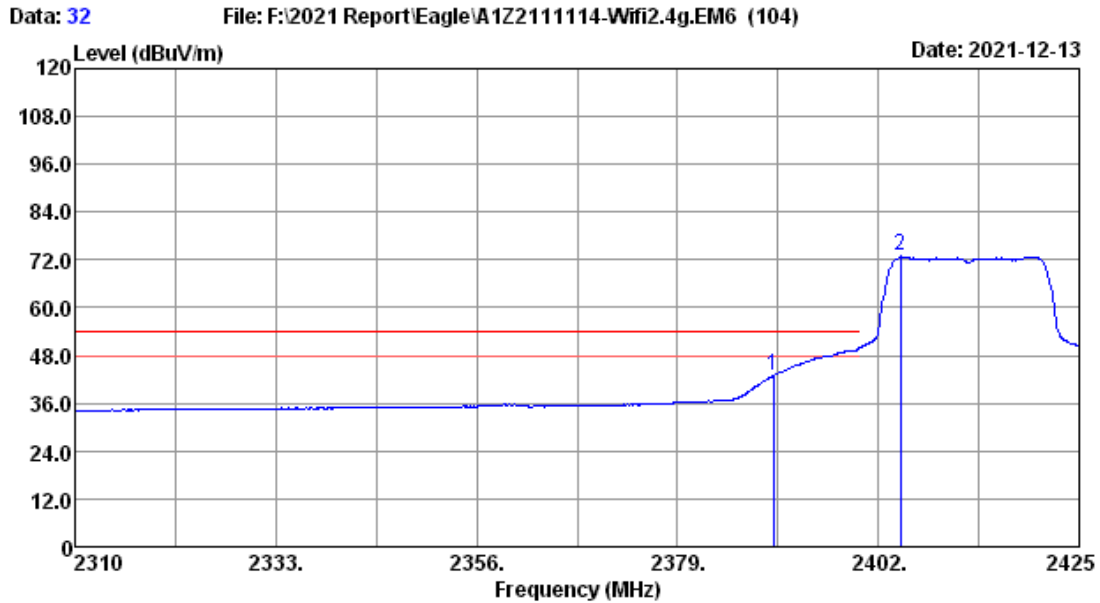
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp factor.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 31
 Dis. / Ant. : 3m 2021 MCTD1209-3006 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 22.1°C/51.5% Engineer : Lynn
 Test Mode : 11n20 2412MHz Tx

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.24	27.89	1.65	76.40	35.24	70.70	74.00	3.30	Peak
2	2390.00	27.89	1.65	75.14	35.24	69.44	74.00	4.56	Peak
3	2410.05	27.93	1.66	113.65	35.24	108.00	-----	-----	Peak

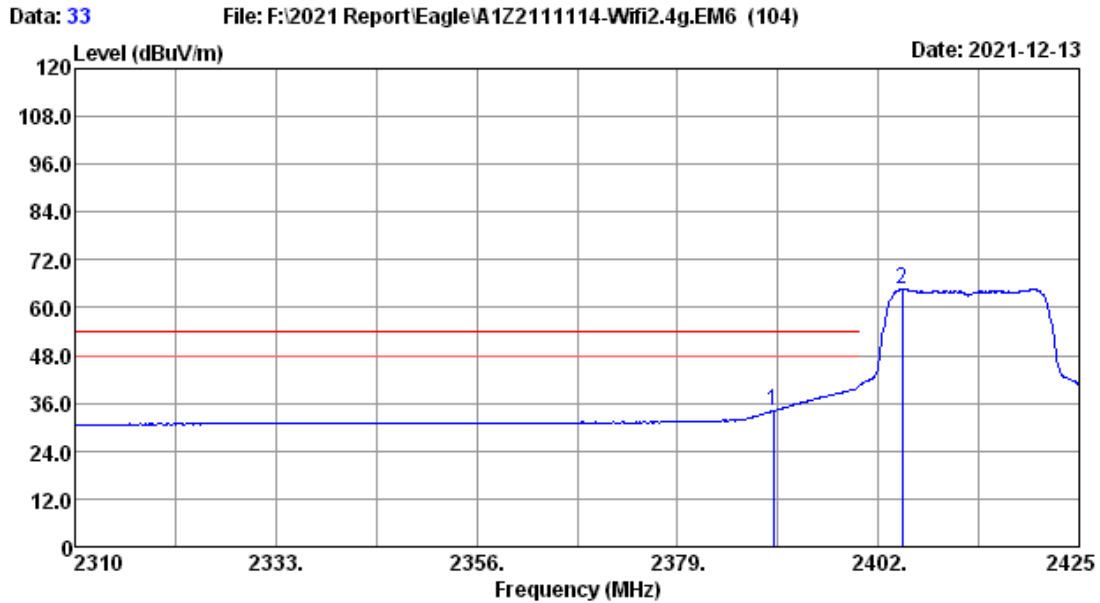
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no.	: 3m Chamber	Data no.	: 32
Dis. / Ant.	: 3m 2021 MCTD1209-3006	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C AV		
Env. / Ins.	: 22.1°C/51.5%	Engineer	: Lynn
Test Mode	: 11n20 2412MHz Tx		

No.	Freq. (MHz)	Ant.		Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission		Margin (dB)	Remark
		Factor (dB/m)					Level (dBuV/m)	Limits (dBuV/m)		
1	2390.00	27.89		1.65	48.77	35.24	43.07	54.00	10.93	Average
2	2404.53	27.93		1.66	78.53	35.24	72.88	-----	-----	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
-Amp factor.
2. The emission levels that are 20dB below the official
limit are not reported.

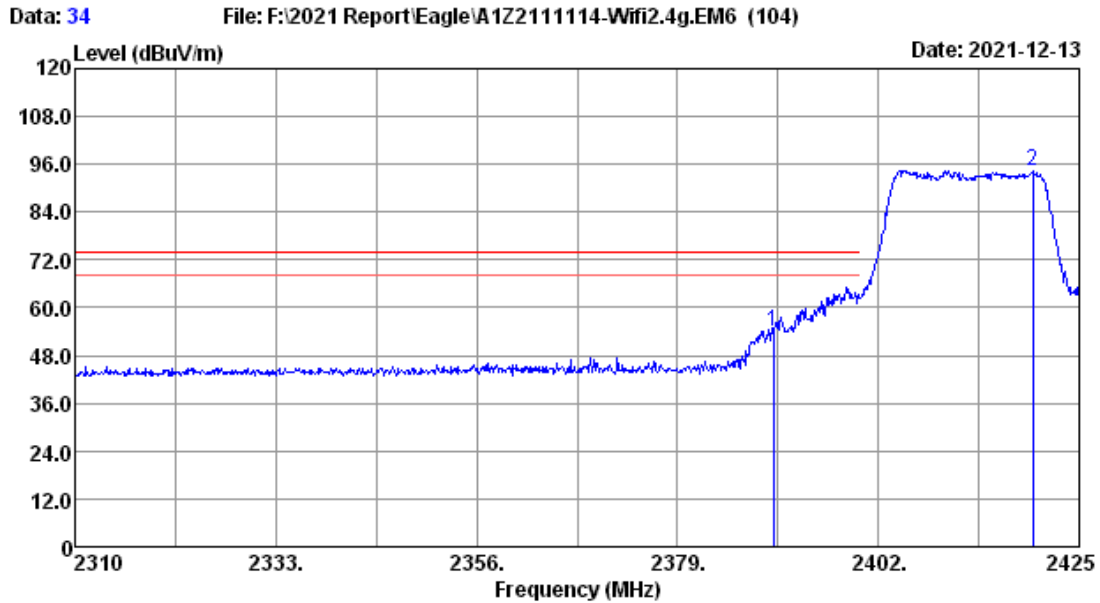


Site no.	: 3m Chamber	Data no.	: 33
Dis. / Ant.	: 3m 2021 MCTD1209-3006	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C AV		
Env. / Ins.	: 22.1°C/51.5%	Engineer	: Lynn
Test Mode	: 11n20 2412MHz Tx		

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	27.89	1.65	39.81	35.24	34.11	54.00	19.89	Average
2	2404.76	27.93	1.66	70.38	35.24	64.73	-----	-----	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
-Amp factor.

2. The emission levels that are 20dB below the official
limit are not reported.

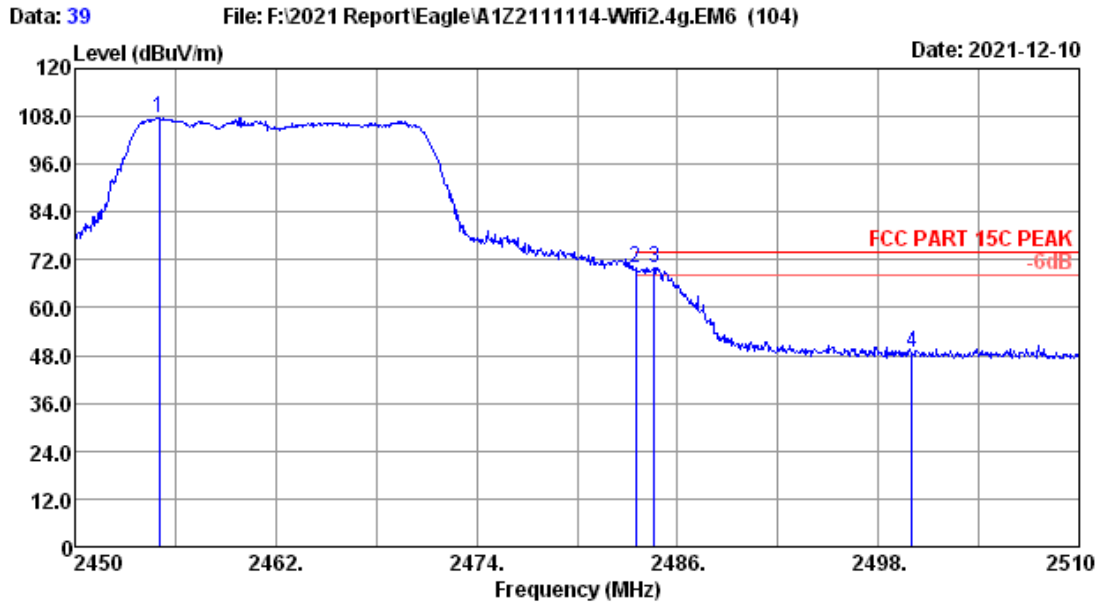


Site no.	: 3m Chamber	Data no.	: 34
Dis. / Ant.	: 3m 2021 MCTD1209-3006	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 22.1°C/51.5%	Engineer	: Lynn
Test Mode	: 11n20 2412MHz Tx		

No.	Freq. (MHz)	Ant.		Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission		Margin (dB)	Remark
		Factor (dB/m)					Level (dBuV/m)	Limits (dBuV/m)		
1	2390.00	27.89		1.65	59.55	35.24	53.85	74.00	20.15	Peak
2	2419.71	27.96		1.67	100.12	35.24	94.51	-----	-----	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
-Amp factor.

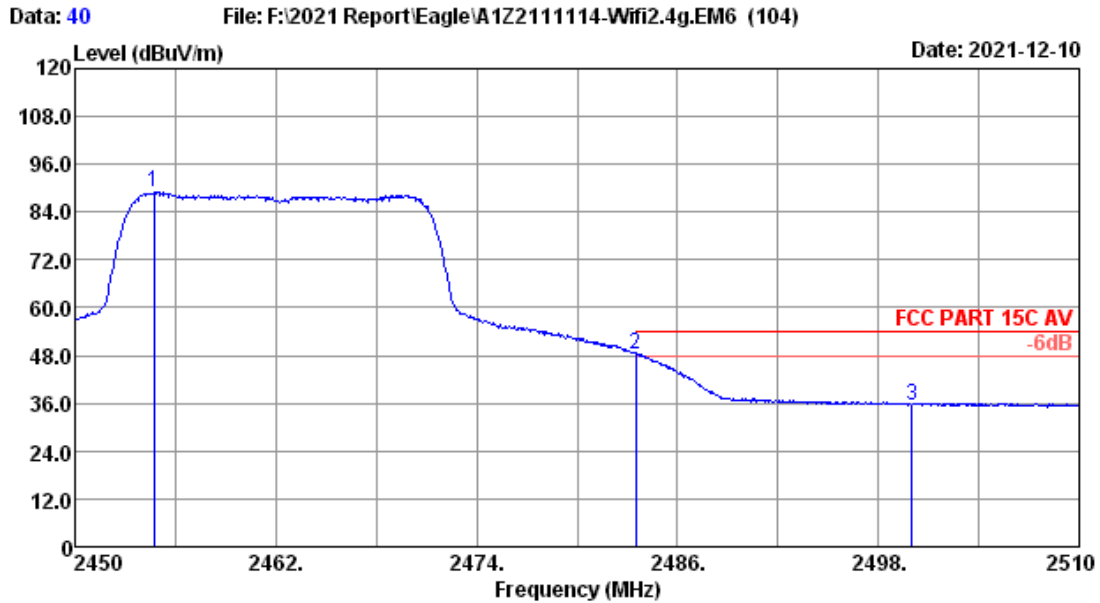
2. The emission levels that are 20dB below the official
limit are not reported.



Site no. : 3m Chamber Data no. : 39
 Dis. / Ant. : 3m 2021 MCTD1209-3006 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 22.1°C/51.5% Engineer : Lynn
 Test Mode : 11n20 2462MHz Tx

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2455.04	28.03	1.68	113.17	35.25	107.63	-----	-----	Peak
2	2483.50	28.07	1.69	75.58	35.25	70.09	74.00	3.91	Peak
3	2484.62	28.07	1.69	75.60	35.25	70.11	74.00	3.89	Peak
4	2500.00	28.10	1.70	54.03	35.25	48.58	74.00	25.42	Peak

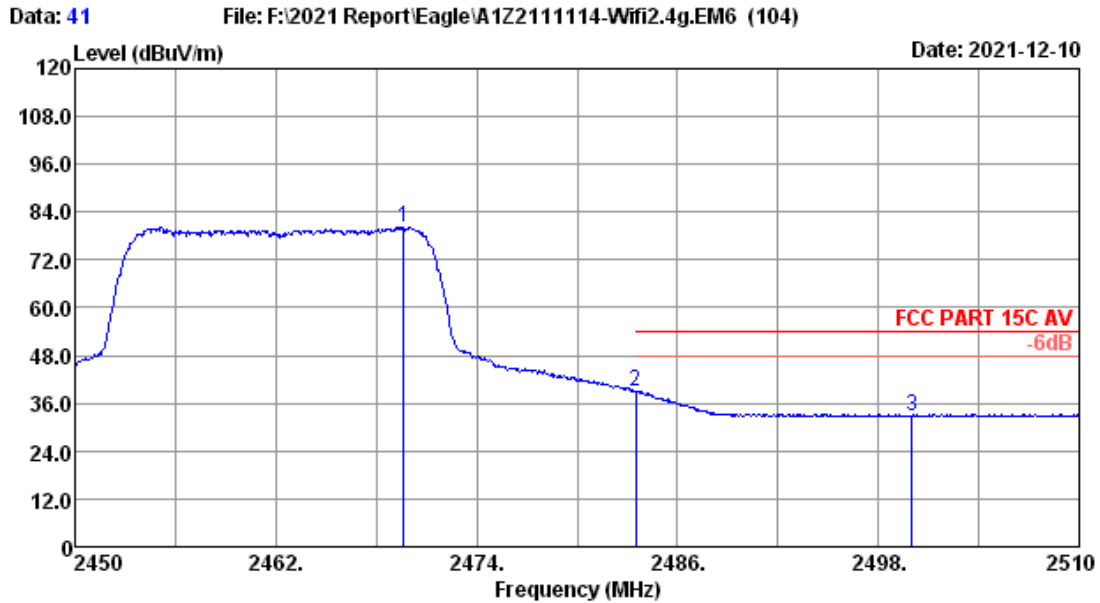
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no. : 3m Chamber Data no. : 40
 Dis. / Ant. : 3m 2021 MCTD1209-3006 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 22.1°C/51.5% Engineer : Lynn
 Test Mode : 11n20 2462MHz Tx

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2454.74	28.03	1.68	94.52	35.25	88.98	-----	-----	Average
2	2483.50	28.07	1.69	53.88	35.25	48.39	54.00	5.61	Average
3	2500.00	28.10	1.70	41.09	35.25	35.64	54.00	18.36	Average

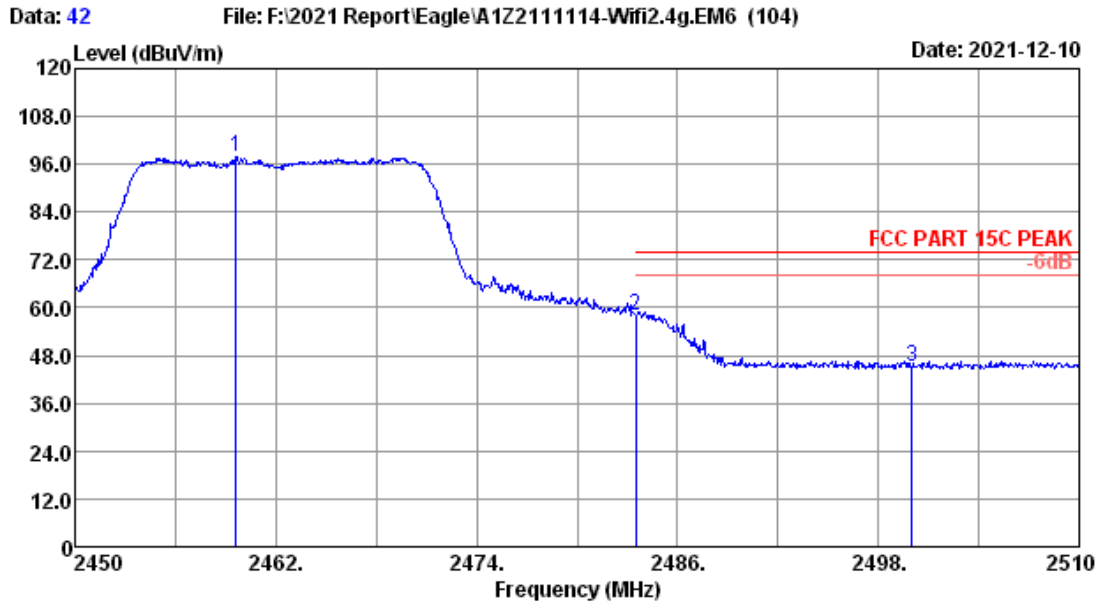
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no. : 3m Chamber Data no. : 41
 Dis. / Ant. : 3m 2021 MCTD1209-3006 Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 22.1°C/51.5% Engineer : Lynn
 Test Mode : 11n20 2462MHz Tx

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2469.62	28.03	1.68	85.85	35.25	80.31	-----	-----	Average
2	2483.50	28.07	1.69	44.25	35.25	38.76	54.00	15.24	Average
3	2500.00	28.10	1.70	38.32	35.25	32.87	54.00	21.13	Average

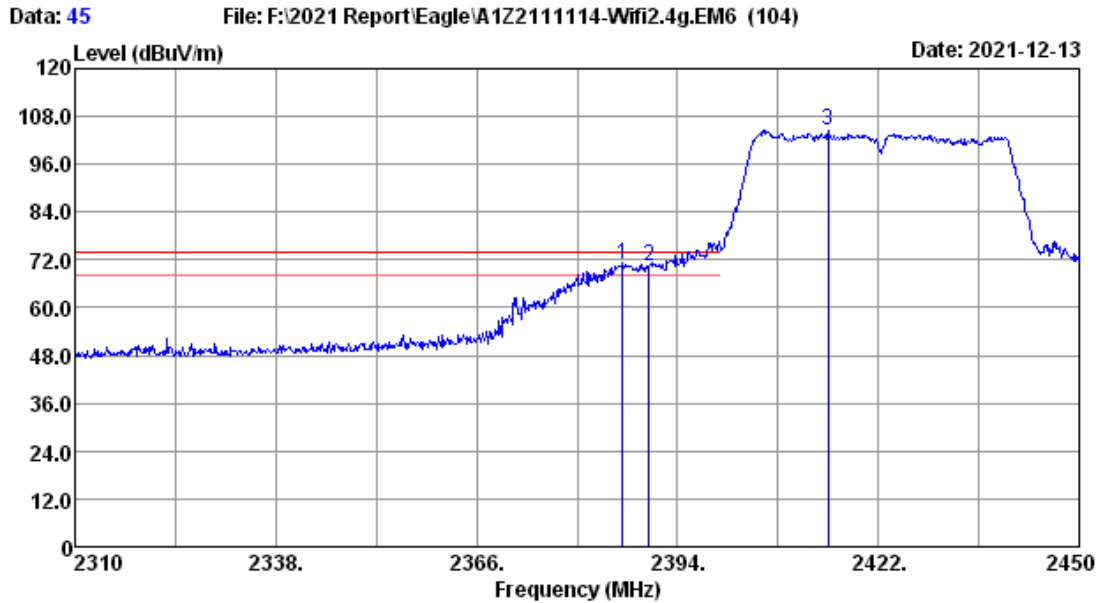
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no. : 3m Chamber Data no. : 42
 Dis. / Ant. : 3m 2021 MCTD1209-3006 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 22.1°C/51.5% Engineer : Lynn
 Test Mode : 11n20 2462MHz Tx

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2459.60	28.03	1.68	103.21	35.25	97.67	-----	-----	Peak
2	2483.50	28.07	1.69	63.40	35.25	57.91	74.00	16.09	Peak
3	2500.00	28.10	1.70	50.50	35.25	45.05	74.00	28.95	Peak

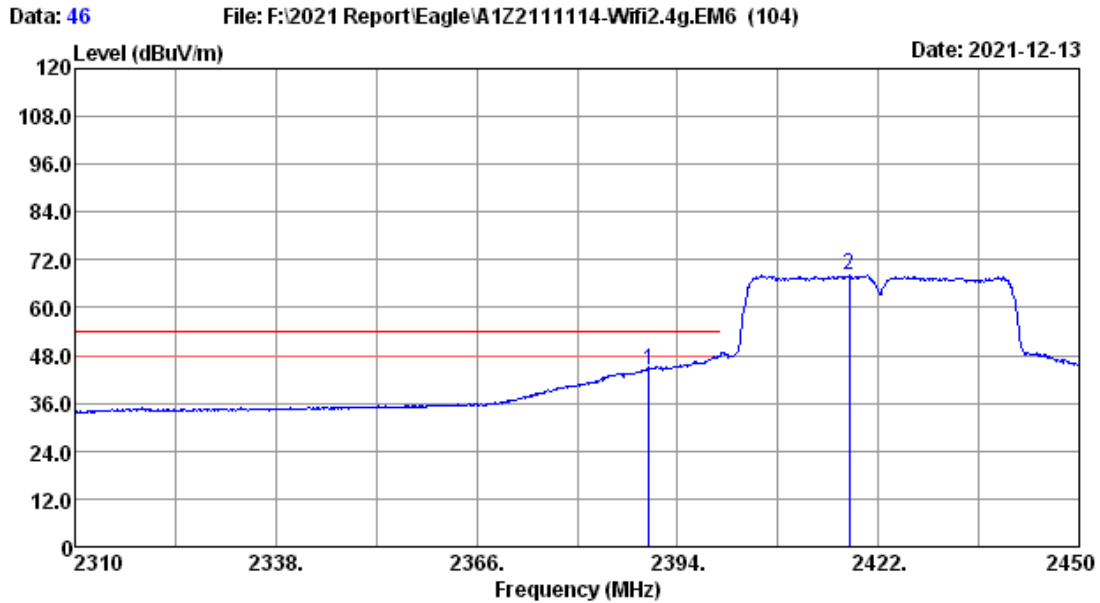
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no. : 3m Chamber Data no. : 45
 Dis. / Ant. : 3m 2021 MCTD1209-3006 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 22.1°C/51.5% Engineer : Lynn
 Test Mode : 11n40 2422MHz Tx

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2386.30	27.89	1.65	76.61	35.24	70.91	74.00	3.09	Peak
2	2390.00	27.89	1.65	76.12	35.24	70.42	74.00	3.58	Peak
3	2415.00	27.93	1.66	110.09	35.24	104.44	-----	-----	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.

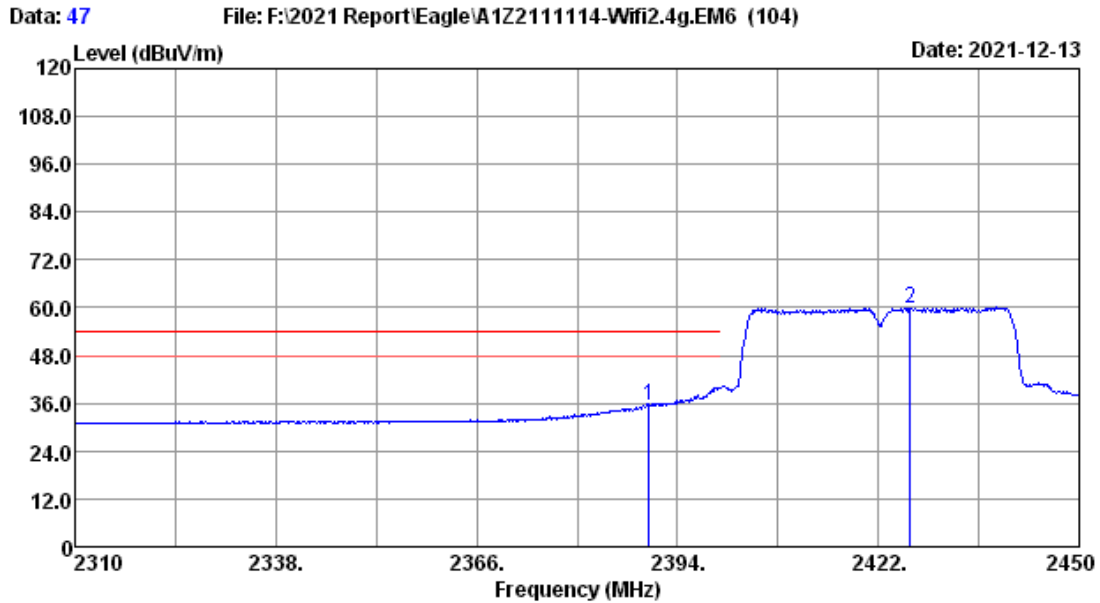


Site no.	: 3m Chamber	Data no.	: 46
Dis. / Ant.	: 3m 2021 MCTD1209-3006	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C AV		
Env. / Ins.	: 22.1°C/51.5%	Engineer	: Lynn
Test Mode	: 11n40 2422MHz Tx		

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	27.89	1.65	50.16	35.24	44.46	54.00	9.54	Average
2	2417.94	27.93	1.67	73.81	35.24	68.17	-----	-----	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
-Amp factor.

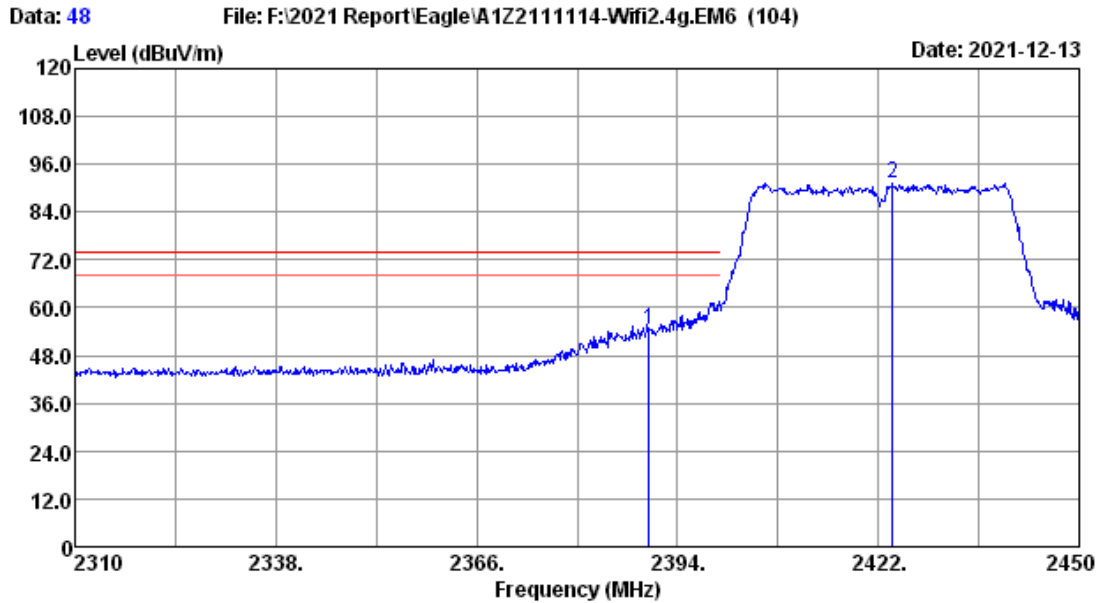
2. The emission levels that are 20dB below the official
limit are not reported.



Site no. : 3m Chamber Data no. : 47
 Dis. / Ant. : 3m 2021 MCTD1209-3006 Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 22.1°C/51.5% Engineer : Lynn
 Test Mode : 11n40 2422MHz Tx

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	27.89	1.65	41.15	35.24	35.45	54.00	18.55	Average
2	2426.48	27.96	1.67	65.57	35.24	59.96	-----	-----	Average

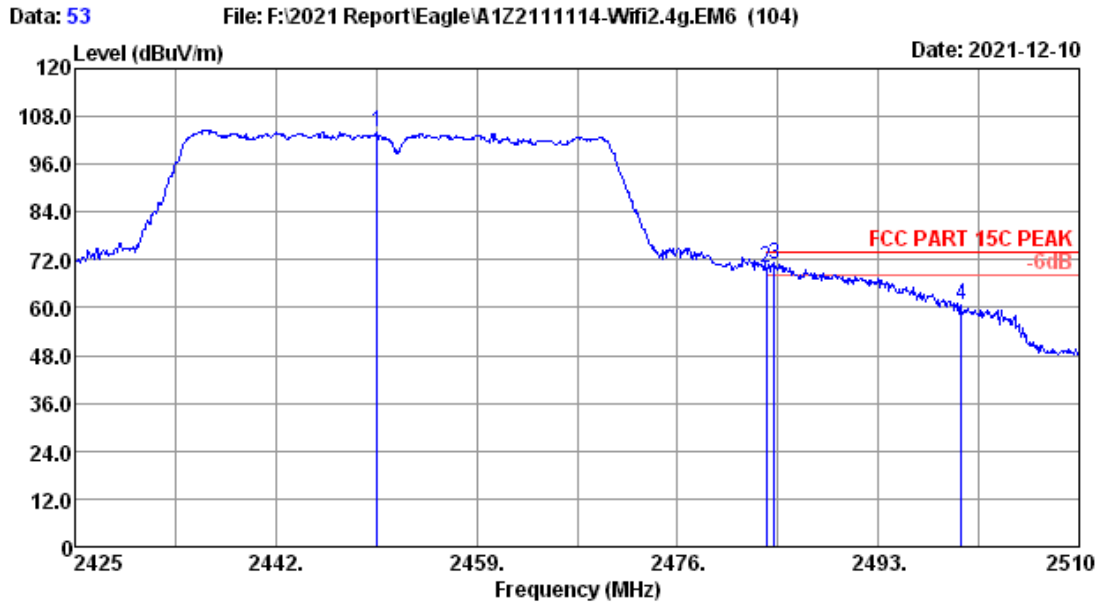
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no. : 3m Chamber Data no. : 48
 Dis. / Ant. : 3m 2021 MCTD1209-3006 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 22.1°C/51.5% Engineer : Lynn
 Test Mode : 11n40 2422MHz Tx

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	27.89	1.65	60.36	35.24	54.66	74.00	19.34	Peak
2	2423.96	27.96	1.67	97.04	35.24	91.43	-----	-----	Peak

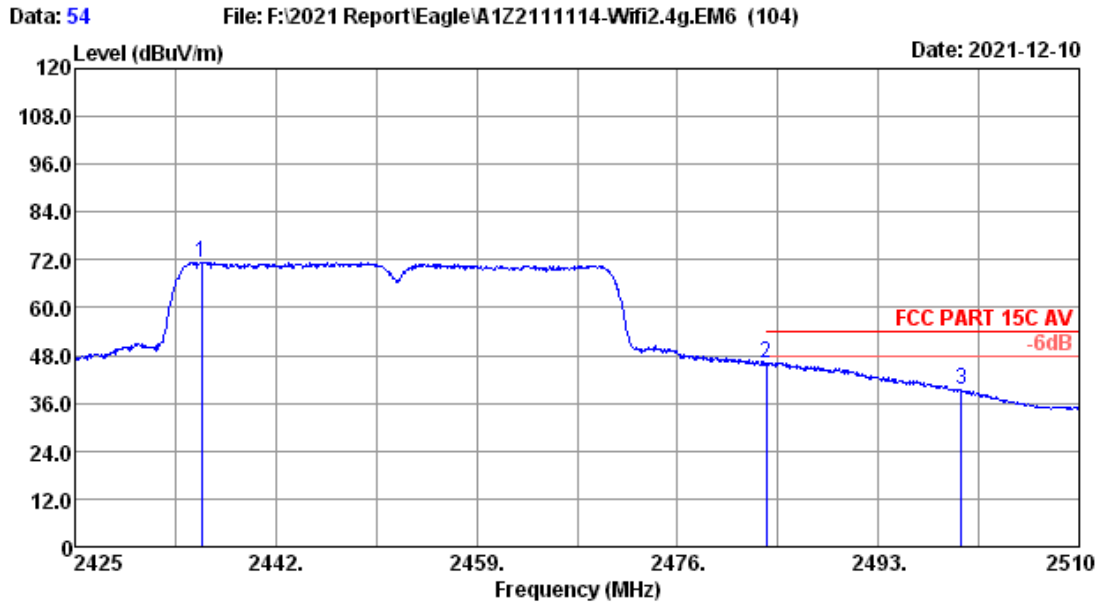
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no. : 3m Chamber Data no. : 53
 Dis. / Ant. : 3m 2021 MCTD1209-3006 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 22.1°C/51.5% Engineer : Lynn
 Test Mode : 11n40 2452MHz Tx

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2450.59	28.00	1.68	109.58	35.25	104.01	-----	-----	Peak
2	2483.50	28.07	1.69	75.56	35.25	70.07	74.00	3.93	Peak
3	2484.16	28.07	1.69	76.47	35.25	70.98	74.00	3.02	Peak
4	2500.00	28.10	1.70	65.97	35.25	60.52	74.00	13.48	Peak

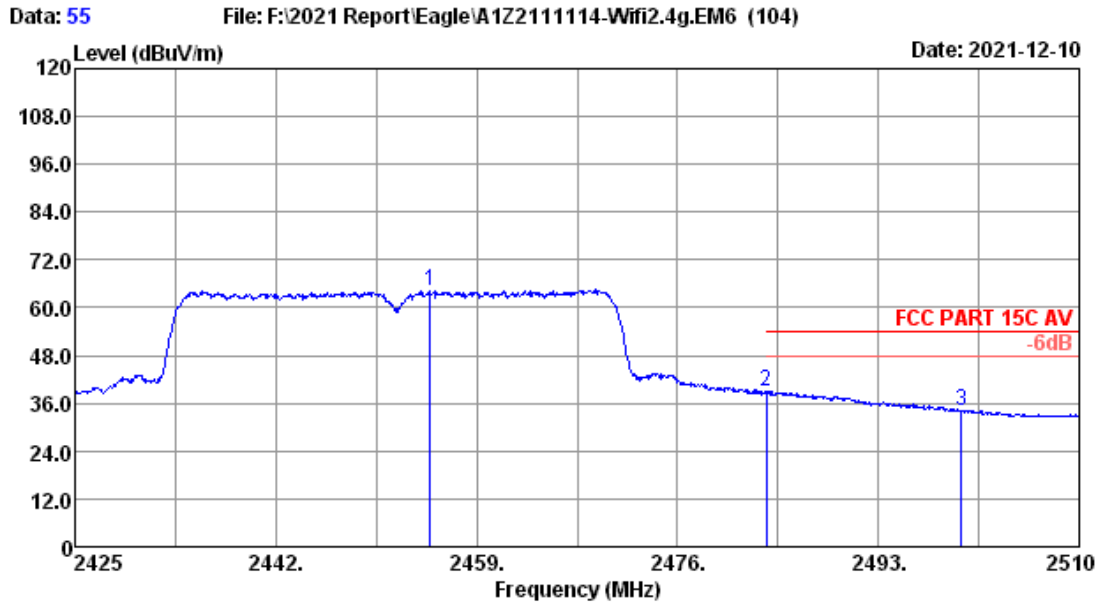
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no.	: 3m Chamber	Data no.	: 54
Dis. / Ant.	: 3m 2021 MCTD1209-3006	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C AV		
Env. / Ins.	: 22.1°C/51.5%	Engineer	: Lynn
Test Mode	: 11n40 2452MHz Tx		

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2435.71	27.96	1.68	77.05	35.24	71.45	-----	-----	Average
2	2483.50	28.07	1.69	51.36	35.25	45.87	54.00	8.13	Average
3	2500.00	28.10	1.70	44.73	35.25	39.28	54.00	14.72	Average

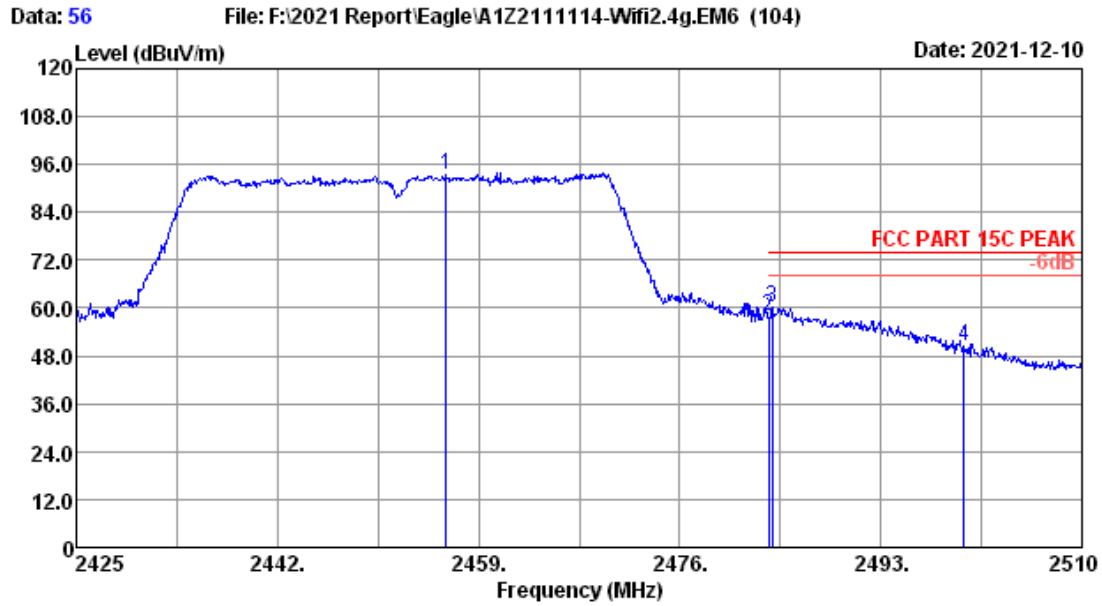
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
-Amp factor.
2. The emission levels that are 20dB below the official
limit are not reported.



Site no. : 3m Chamber Data no. : 55
 Dis. / Ant. : 3m 2021 MCTD1209-3006 Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 22.1°C/51.5% Engineer : Lynn
 Test Mode : 11n40 2452MHz Tx

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2455.09	28.03	1.68	69.69	35.25	64.15	-----	-----	Average
2	2483.50	28.07	1.69	44.30	35.25	38.81	54.00	15.19	Average
3	2500.00	28.10	1.70	39.69	35.25	34.24	54.00	19.76	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no. : 3m Chamber Data no. : 56
 Dis. / Ant. : 3m 2021 MCTD1209-3006 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 22.1°C/51.5% Engineer : Lynn
 Test Mode : 11n40 2452MHz Tx

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2456.28	28.03	1.68	98.82	35.25	93.28	-----	-----	Peak
2	2483.50	28.07	1.69	63.31	35.25	57.82	74.00	16.18	Peak
3	2483.82	28.07	1.69	65.53	35.25	60.04	74.00	13.96	Peak
4	2500.00	28.10	1.70	56.00	35.25	50.55	74.00	23.45	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.

7. 6dB Bandwidth Test

7.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Apr.07,21	1 Year
2.	Attenuator	Agilent	8491B	MY39269201	Oct.09,21	1 Year
3.	RF Cable	Hubersuhner	SUCOFLEX-106	505238/6	Apr.07,21	1 Year

7.2. Limit

For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz

7.3. Test Procedure

The transmitter output was connected to a spectrum analyzer, The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 300kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

7.4. Test Results

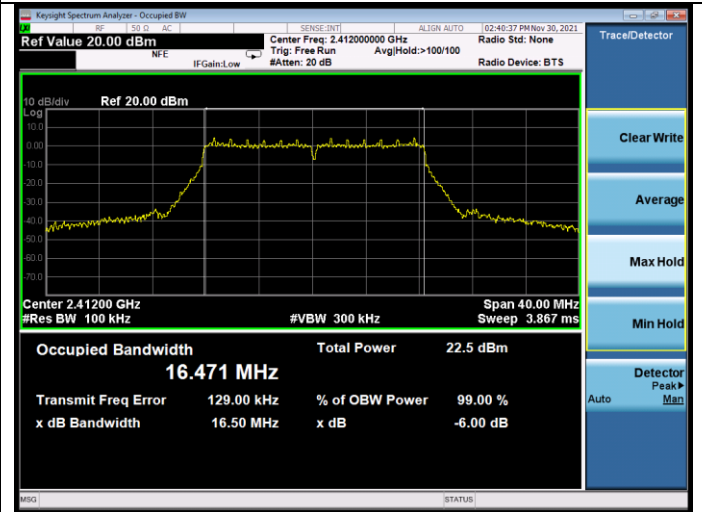
EUT: Set Top Box		
M/N: VSBB100		
Test date: 2021-11-30	Pressure: 102.1±1.0 kpa	Humidity: 53.2±3.0%
Tested by: Lynn	Test site: RF site	Temperature: 23.3±0.6 °C

Test Mode	CH	-6dB Bandwidth (MHz)	Limit (KHz)
11b	CH1	10.06	≥ 500
	CH6	10.06	
	CH11	10.06	
11g	CH1	16.50	≥ 500
	CH6	16.50	
	CH11	16.48	
11n HT20	CH1	17.68	≥ 500
	CH6	17.70	
	CH11	17.67	
11n HT40	CH3	36.52	≥ 500
	CH6	36.50	
	CH9	36.52	
Conclusion: PASS			

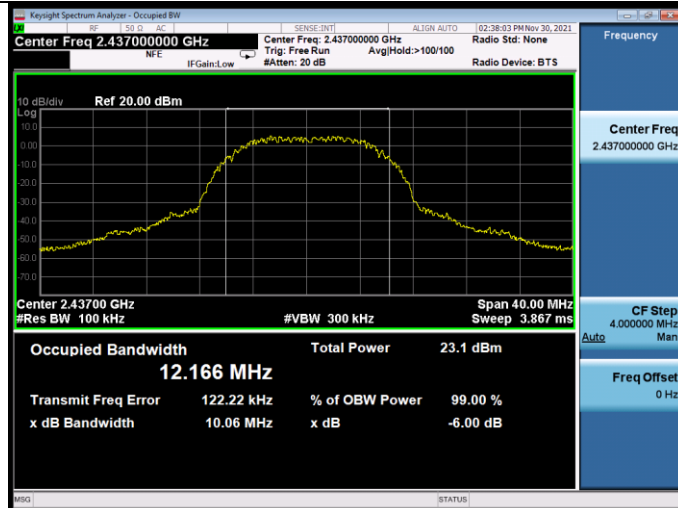
Test Mode: IEEE 802.11b
Test CH1: 2412MHz



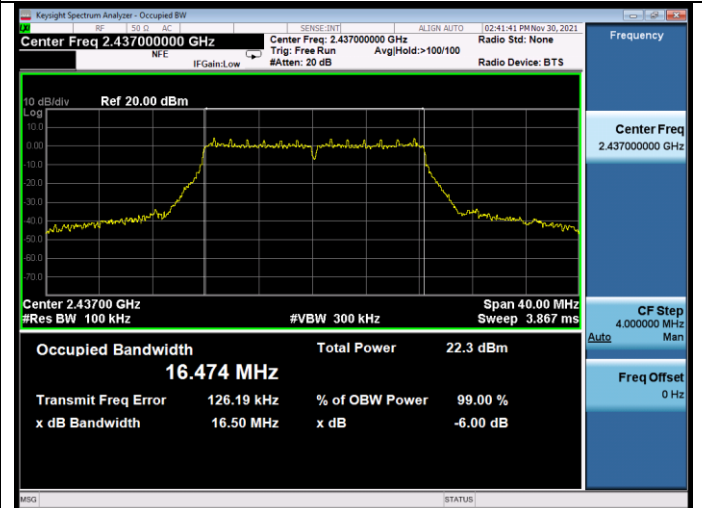
Test Mode: IEEE 802.11g
Test CH1: 2412MHz



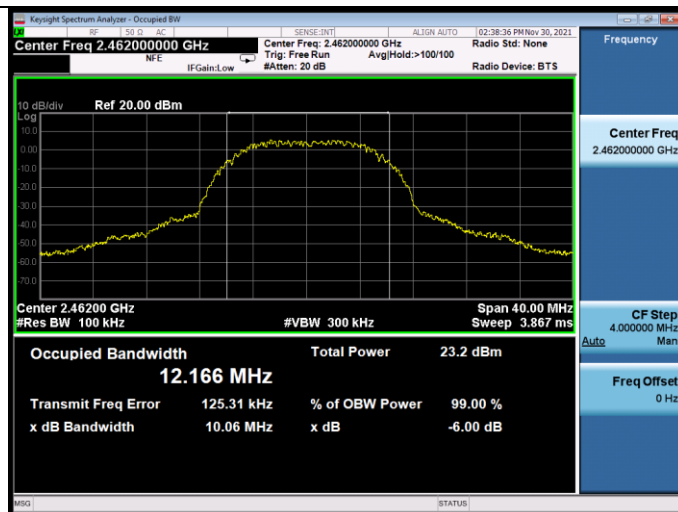
Test CH6: 2437MHz



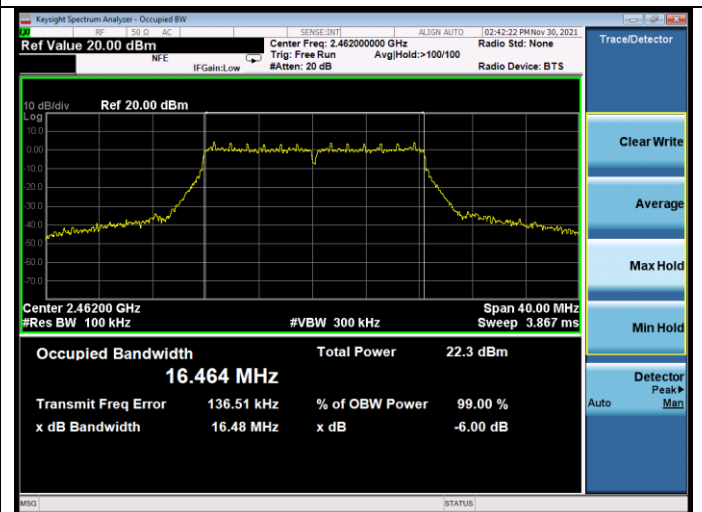
Test CH6: 2437MHz



Test CH11: 2462MHz



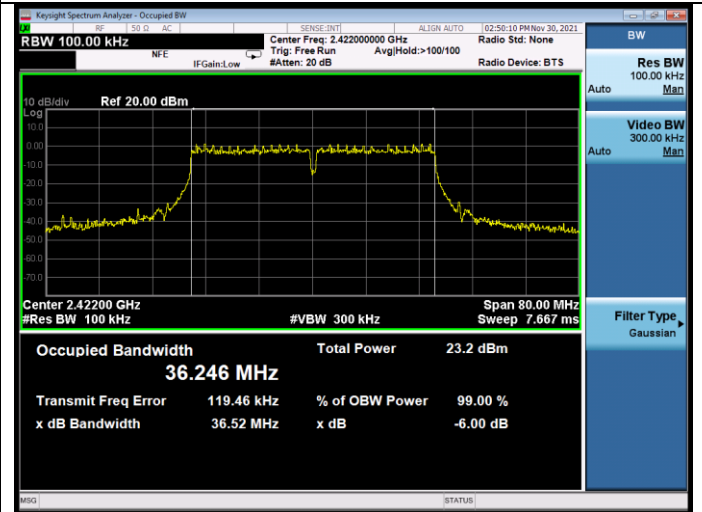
Test CH11: 2462MHz



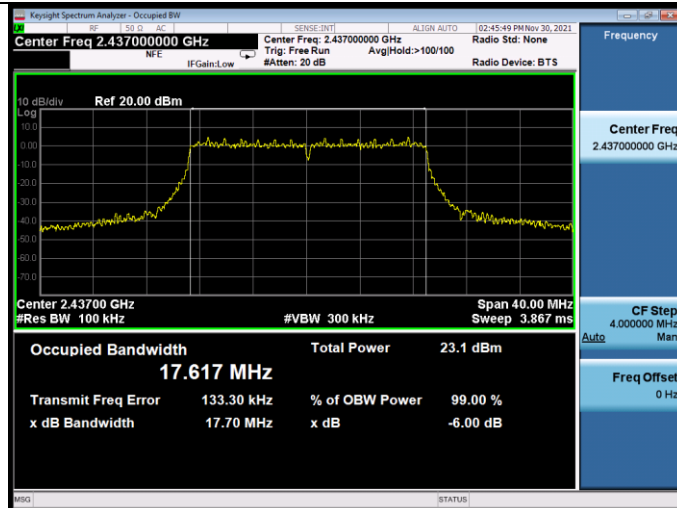
Test Mode: IEEE 802.11n HT20
Test CH1: 2412MHz



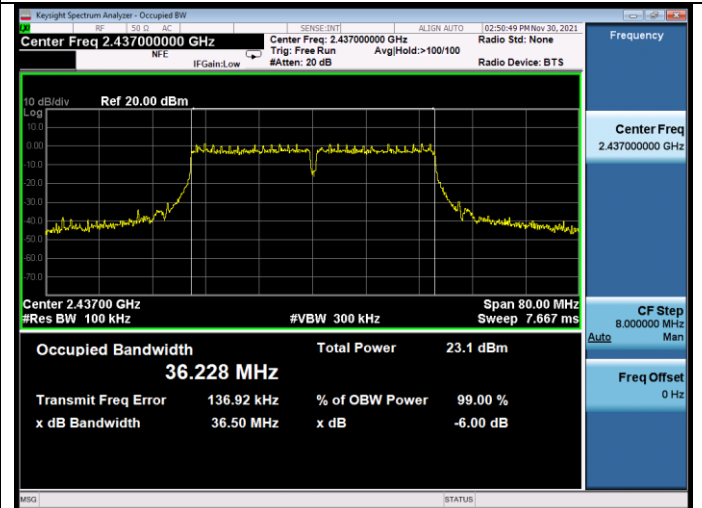
Test Mode: IEEE 802.11n HT40
Test CH3: 2422MHz



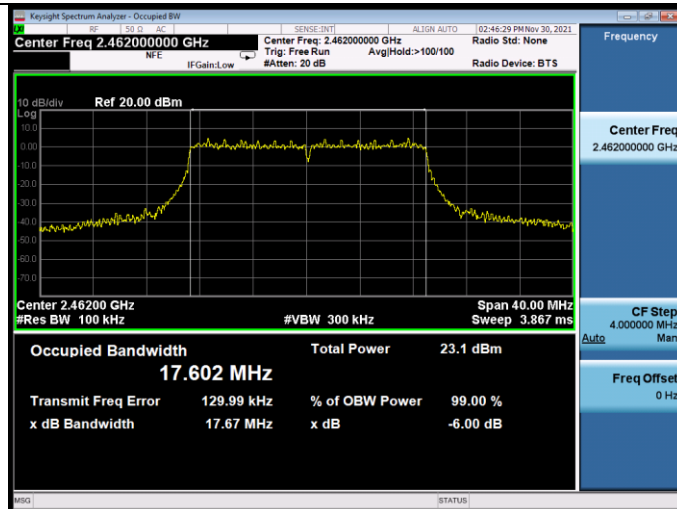
Test CH6: 2437MHz



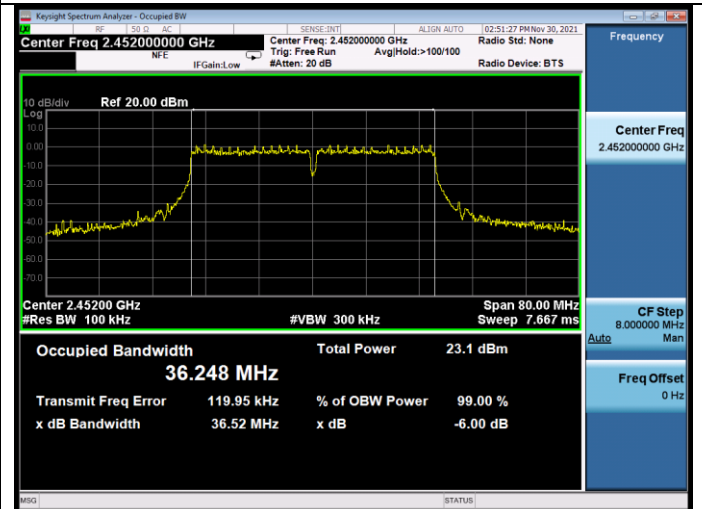
Test CH6: 2437MHz



Test CH11: 2462MHz



Test CH9: 2452MHz



8. OUTPUT POWER TEST

8.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Apr.07,21	1Year
2.	Power meter	Anritsu	ML2487A	6K00002472	Apr.07,21	1Year
3.	Power Sensor	Anritsu	MA2491A	033005	Apr.06,21	1Year
4.	Attenuator	Agilent	8491B	MY39269201	Oct.09,21	1 Year
5.	RF Cable	Hubersuhner	SUCOFLE X-106	505238/6	Apr.07,21	1 Year

8.2. Limit (FCC Part 15C 15.247 b(3))

For systems using digital modulation in the 2400—2483.5MHz, The Peak output Power shall not exceed 1W(30dBm), As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level.

8.3. Test Procedure

- 1, Connected the EUT's antenna port to measure device by 20dB attenuator.
- 2, Use the test method described in ANSI C63.10-2013 clause 11.9.2.2.2 Method AVGSA-1.
 - 1) Set span to at least 1.5 times the OBW.
 - 2) Set RBW = 1% to 5% of the OBW, not to exceed 1MHz.
 - 3) Set VBW $\geq [3 \times \text{RBW}]$.
 - 4) Number of points in sweep $\geq [2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing $\leq \text{RBW} / 2$, so that narrowband signals are not lost between frequency bins.)
 - 5) Sweep time = auto.
 - 6) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
 - 7) If transmit duty cycle $< 98\%$, use a sweep trigger with the level set to enable triggering only on full power pulses. The transmitter shall operate at the maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no OFF intervals) or at duty cycle $\geq 98\%$, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run."
 - 8) Trace average at least 100 traces in power averaging (rms) mode.
 - 9) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

8.4.Test Results

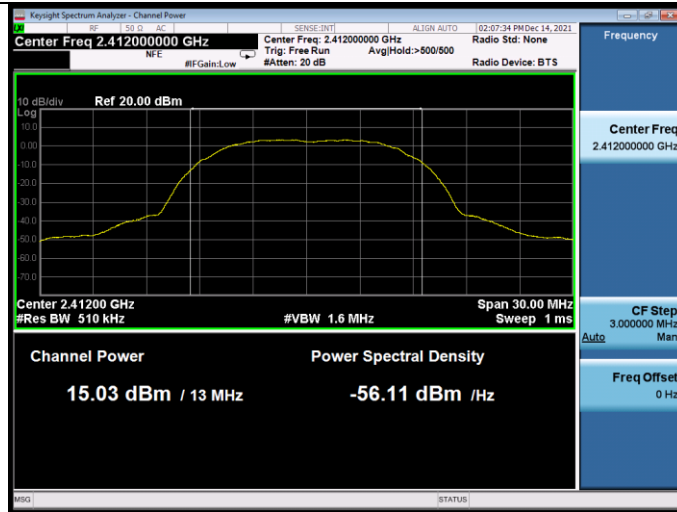
EUT: Set Top Box		
M/N: VSBB100		
Test date: 2021-12-14	Pressure: 102.1±1.0 kpa	Humidity: 53.2±3.0%
Tested by: Lynn	Test site: RF site	Temperature:23.3±0.6 °C

Test Mode	CH	Power Setting	Output Power (dBm)	Limit (dBm)
11b	CH1	1	15.83	30
	CH6	1	15.71	
	CH11	1	15.56	
11g	CH1	1	13.52	30
	CH6	1	13.38	
	CH11	1	13.19	
11n HT20	CH1	0	12.88	30
	CH6	0	12.75	
	CH11	0	12.61	
11n HT40	CH3	0	12.38	30
	CH6	0	12.30	
	CH9	0	12.21	

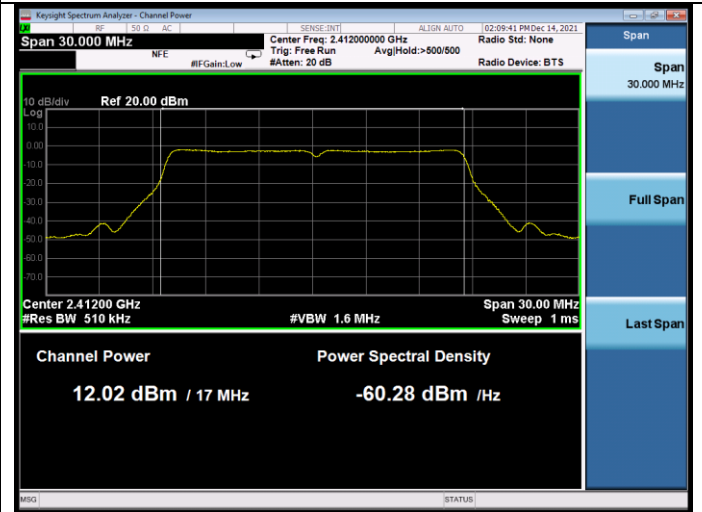
Conclusion : PASS

Output Power=Reading+10log(1/ Duty cycle)

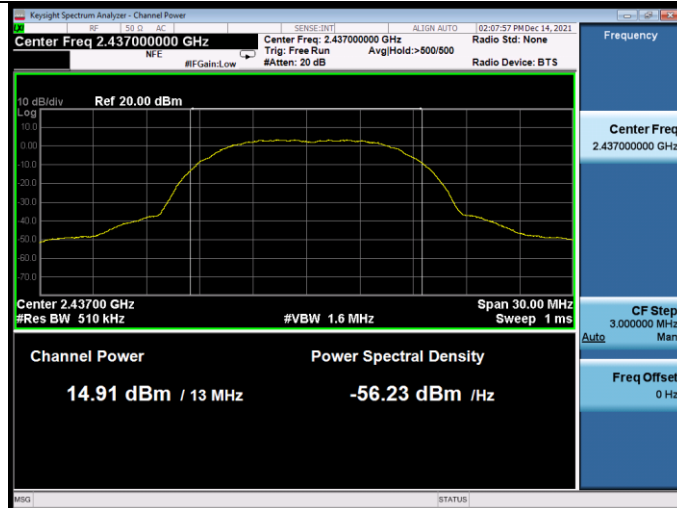
Test Mode: IEEE 802.11b
Test CH1: 2412MHz



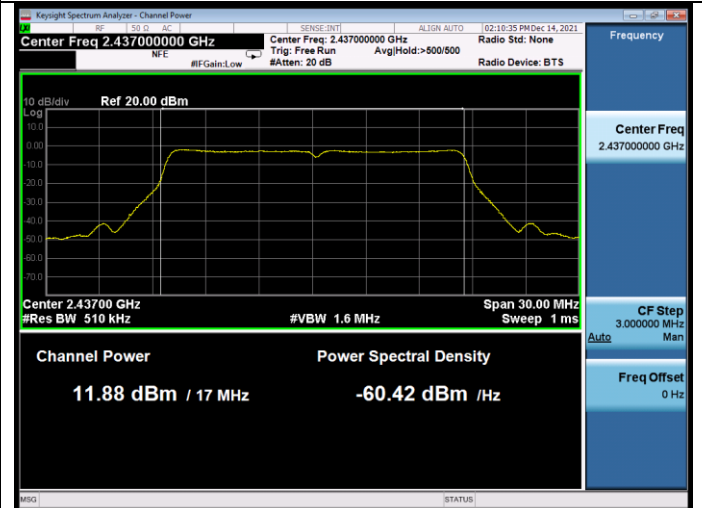
Test Mode: IEEE 802.11g
Test CH1: 2412MHz



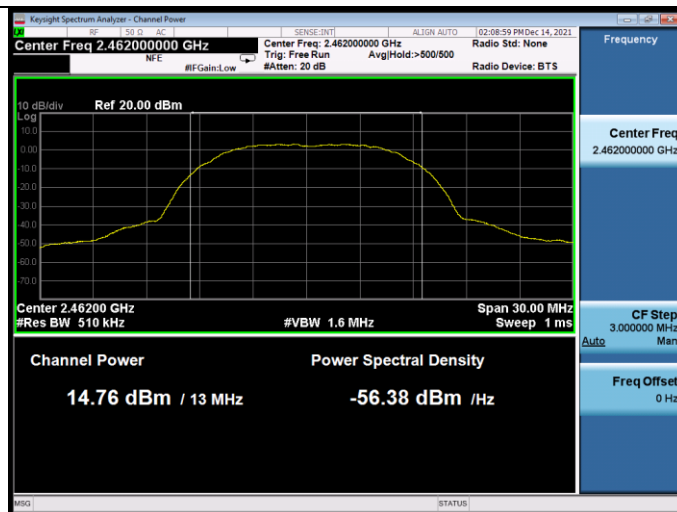
Test CH6: 2437MHz



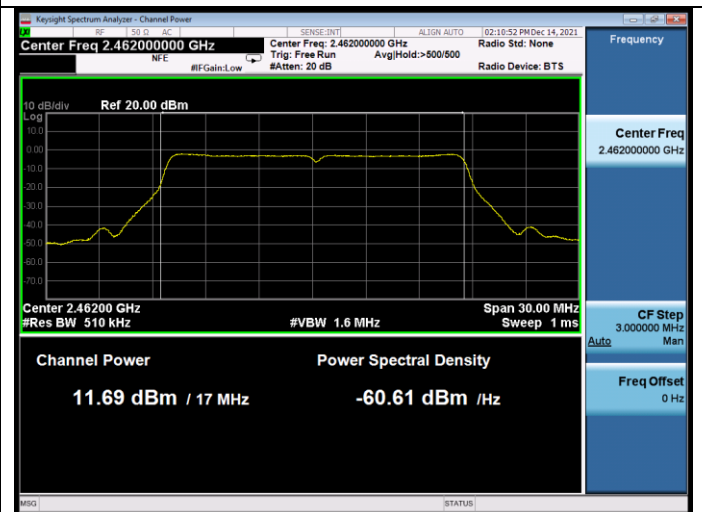
Test CH6: 2437MHz



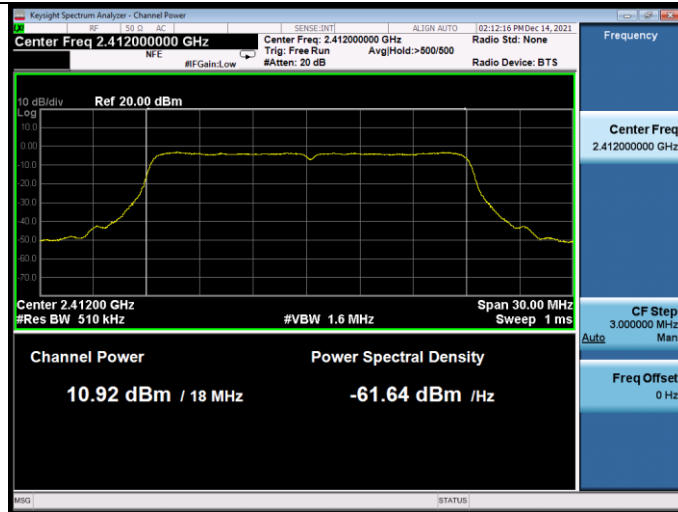
Test CH11: 2462MHz



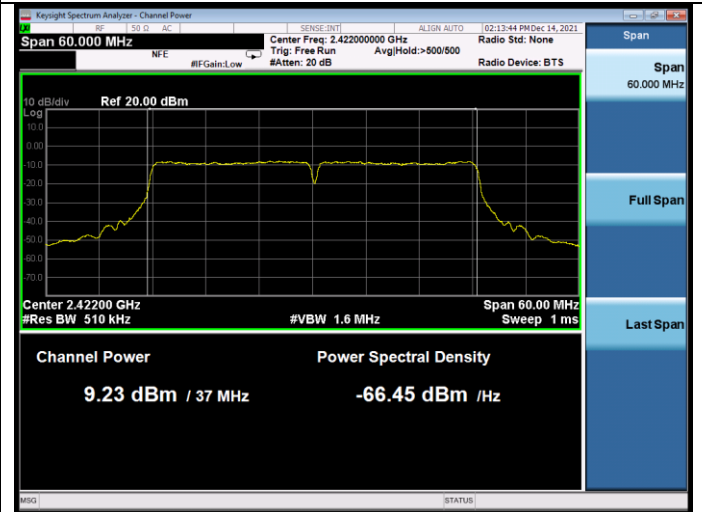
Test CH11: 2462MHz



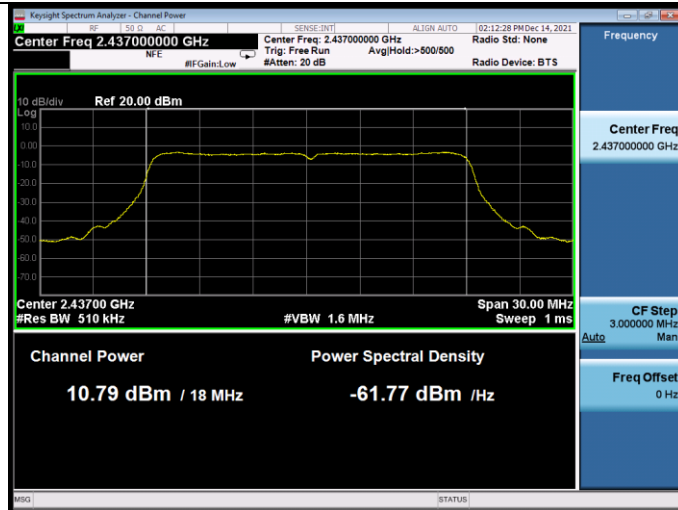
Test Mode: IEEE 802.11n HT20
Test CH1: 2412MHz



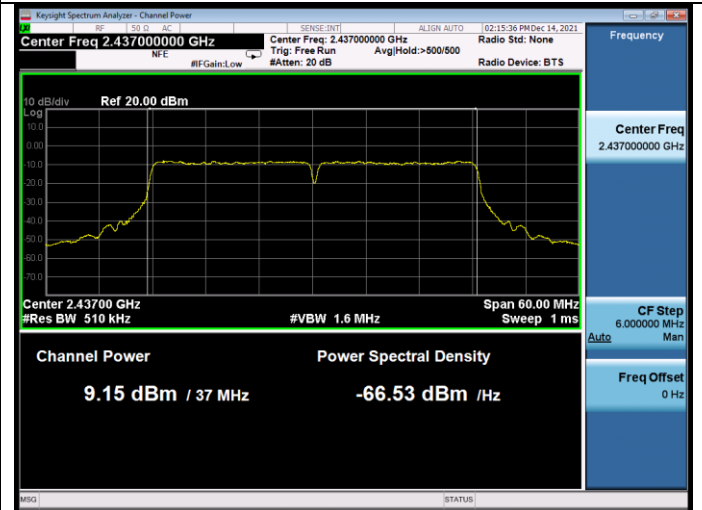
Test Mode: IEEE 802.11n HT40
Test CH3: 2422MHz



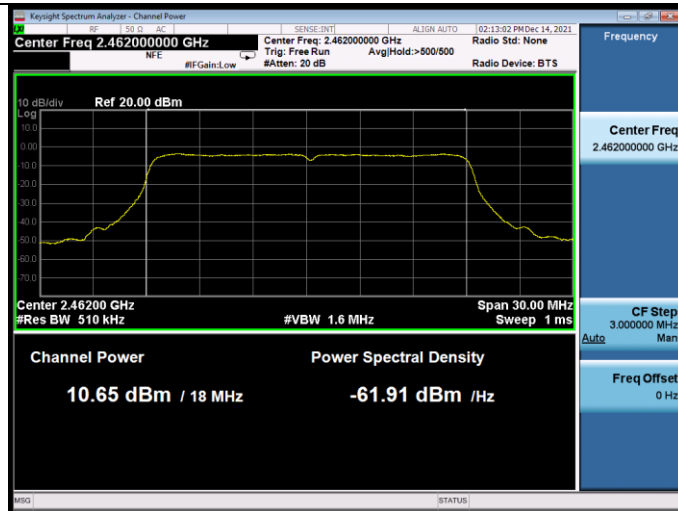
Test CH6: 2437MHz



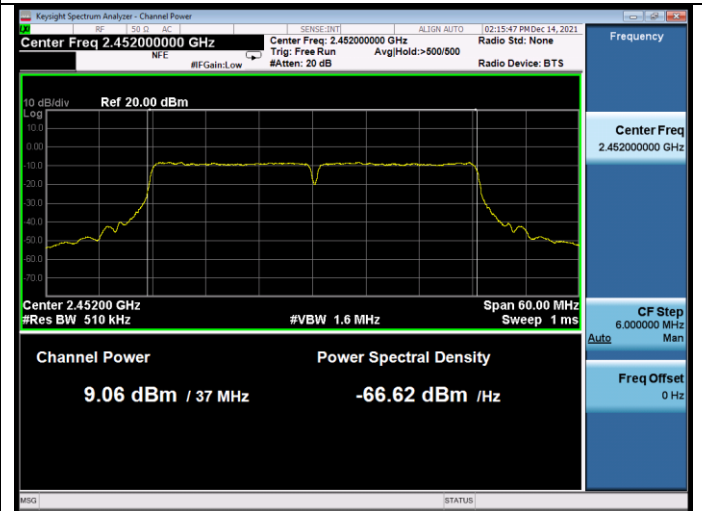
Test CH6: 2437MHz



Test CH11: 2462MHz



Test CH9: 2452MHz



9. POWER SPECTRAL DENSITY TEST

9.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Apr.07,21	1 Year
2.	Attenuator	Agilent	8491B	MY39269201	Oct.09,21	1 Year
3.	RF Cable	HUBER+SUHNER	SUCOFLEX-106	505238/6	Apr.07,21	1 Year

9.2. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

9.3. Test Procedure

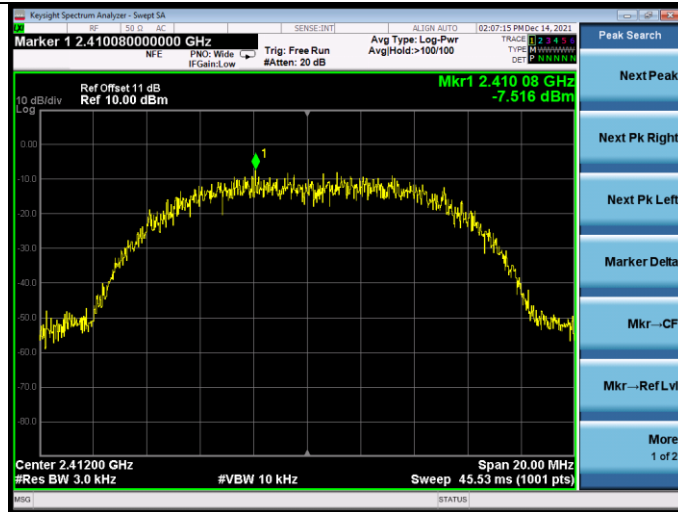
- Set analyzer center frequency to DTS channel center frequency.
- Set the span to 1.5 DTS bandwidth.
- Set the RBW to: $3\text{kHz} \leq \text{RBW} \leq 100\text{kHz}$.
- Set the VBW $\geq [3 \times \text{RBW}]$.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level within the RBW.

9.4.Test Results

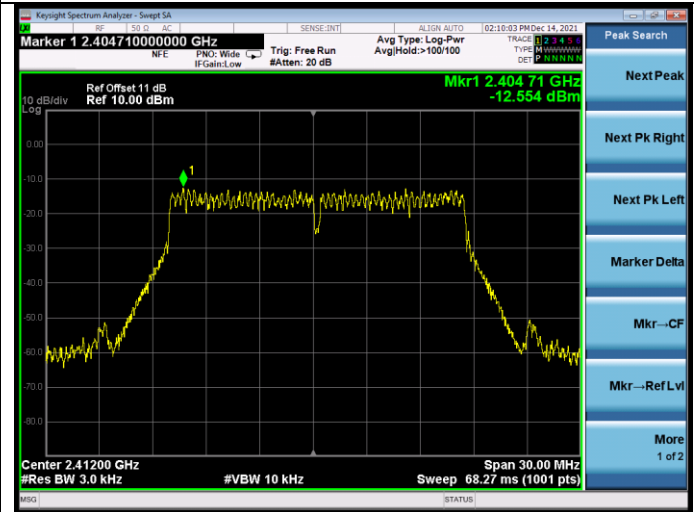
EUT: Set Top Box		
M/N: VSBB100		
Test date: 2021-12-14	Pressure: 102.1±1.0 kpa	Humidity: 53.2±3.0%
Tested by: Lynn	Test site: RF site	Temperature:23.3±0.6 °C

Test Mode	CH	Power Spectral Density (dBm/3KHz)	Limit (dBm/3KHz)
11b	CH1	-7.516	8
	CH6	-7.601	
	CH11	-7.716	
11g	CH1	-12.554	8
	CH6	-12.585	
	CH11	-12.783	
11n HT20	CH1	-12.997	8
	CH6	-12.962	
	CH11	-12.511	
11n HT40	CH3	-16.452	8
	CH6	-16.377	
	CH9	-16.211	
Conclusion: PASS			

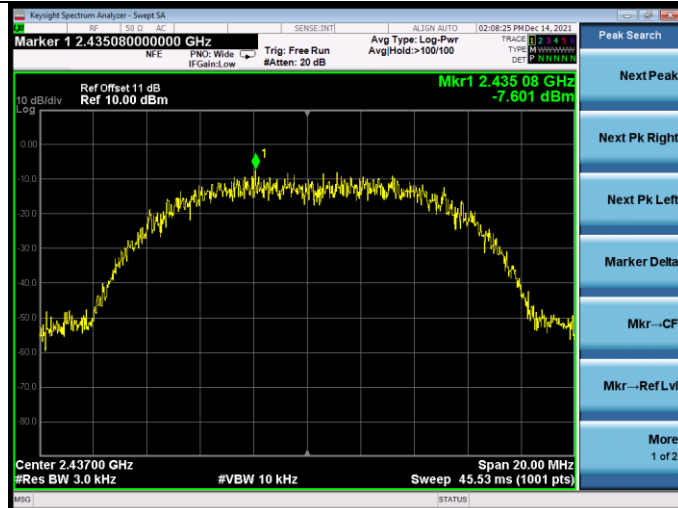
Test Mode: IEEE 802.11b
Test CH1: 2412MHz



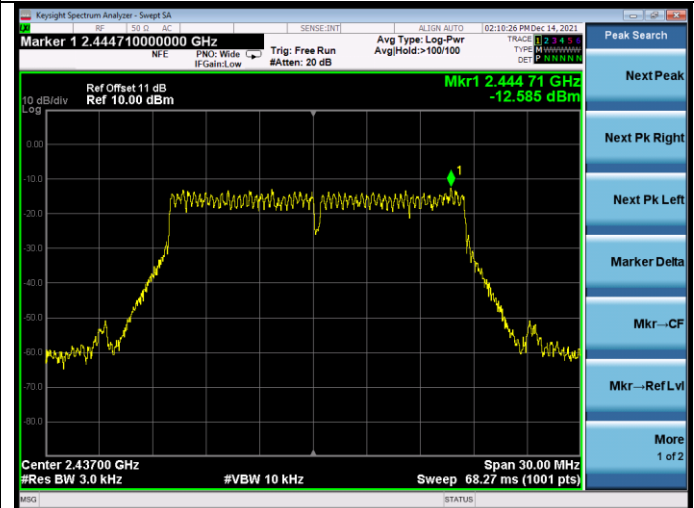
Test Mode: IEEE 802.11g
Test CH1: 2412MHz



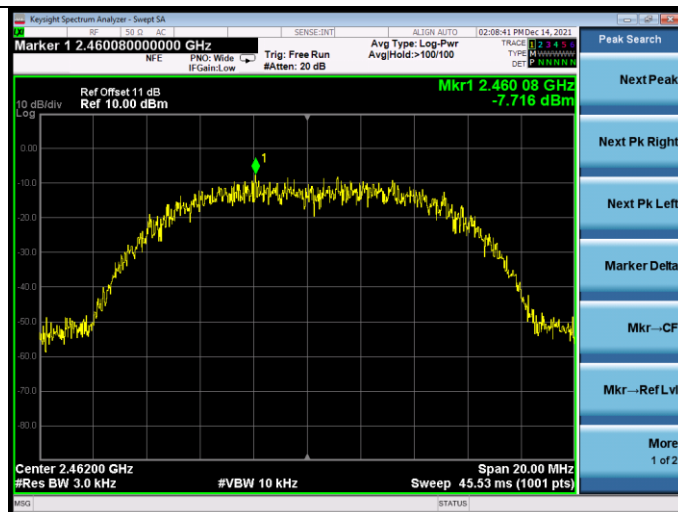
Test CH6: 2437MHz



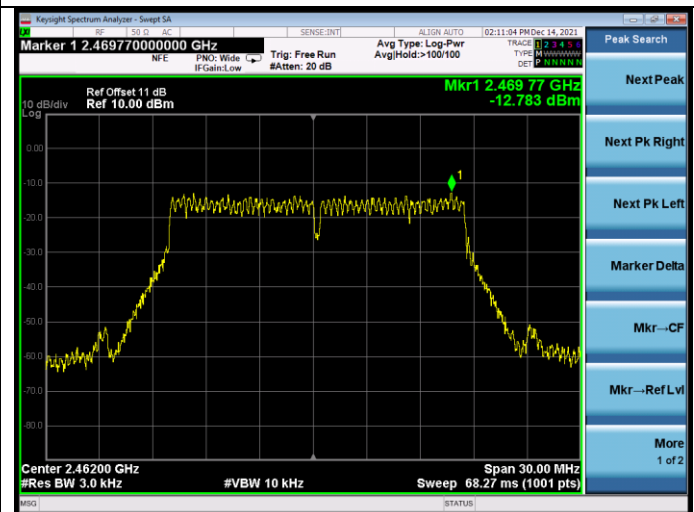
Test CH6: 2437MHz



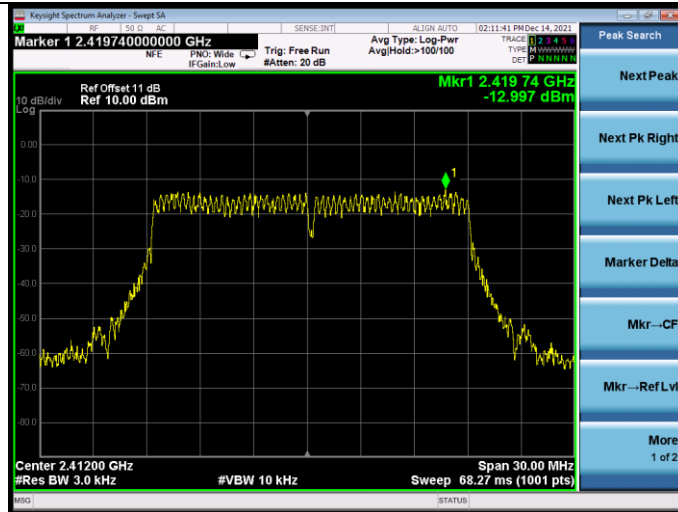
Test CH11: 2462MHz



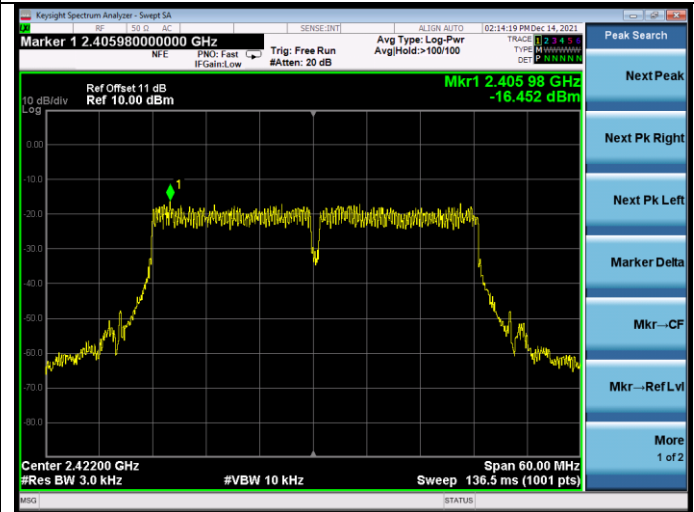
Test CH11: 2462MHz



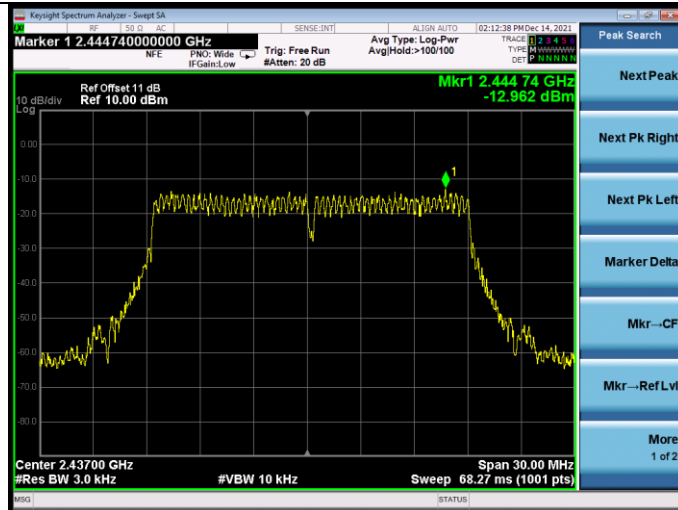
Test Mode: IEEE 802.11n HT20
Test CH1: 2412MHz



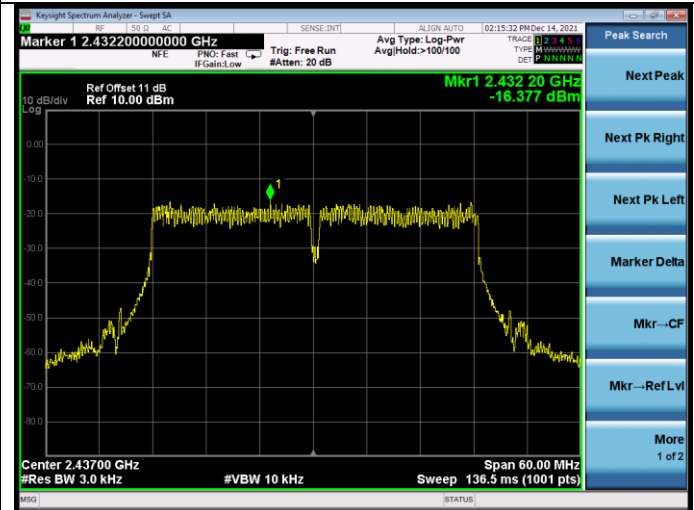
Test Mode: IEEE 802.11n HT40
Test CH3: 2422MHz



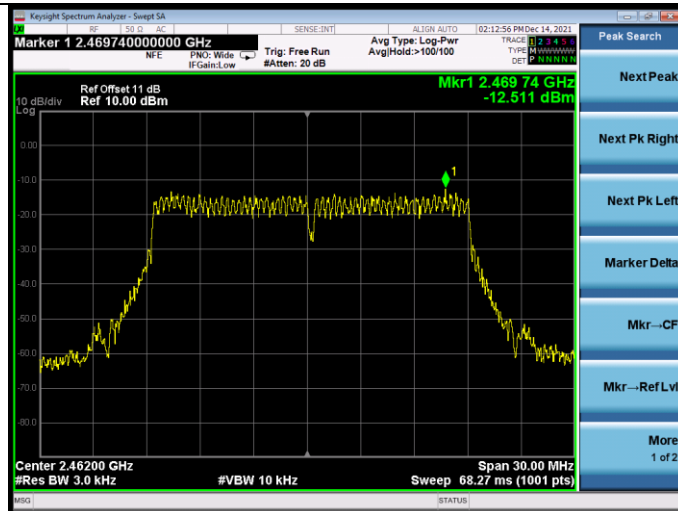
Test CH6: 2437MHz



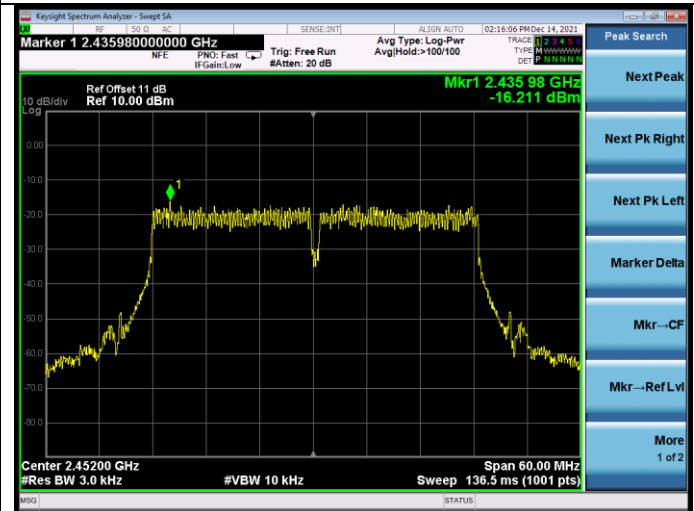
Test CH6: 2437MHz



Test CH11: 2462MHz



Test CH9: 2452MHz



10. ANTENNA REQUIREMENT

10.1. Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, 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. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

10.2. Antenna Connected Construction

The antennas used for this product are PCB antenna that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is 2dBi.

11. DEVIATION TO TEST SPECIFICATIONS

[NONE]

..... THE END