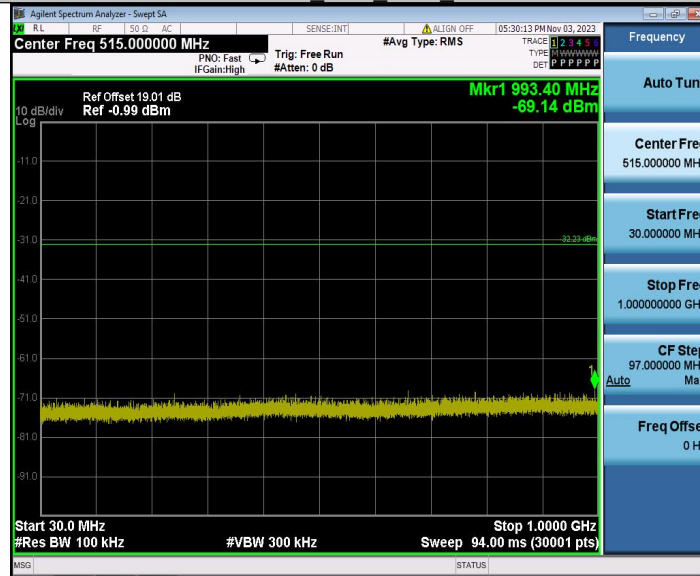
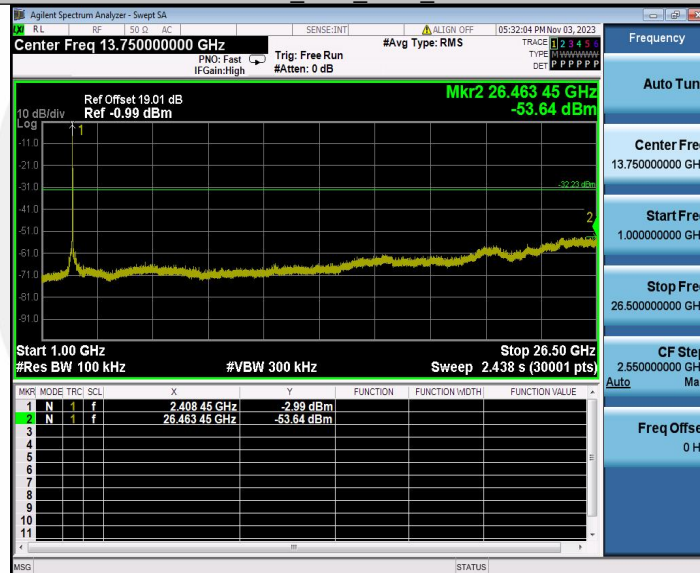


11N20MIMO_Ant2_2412_30~1000



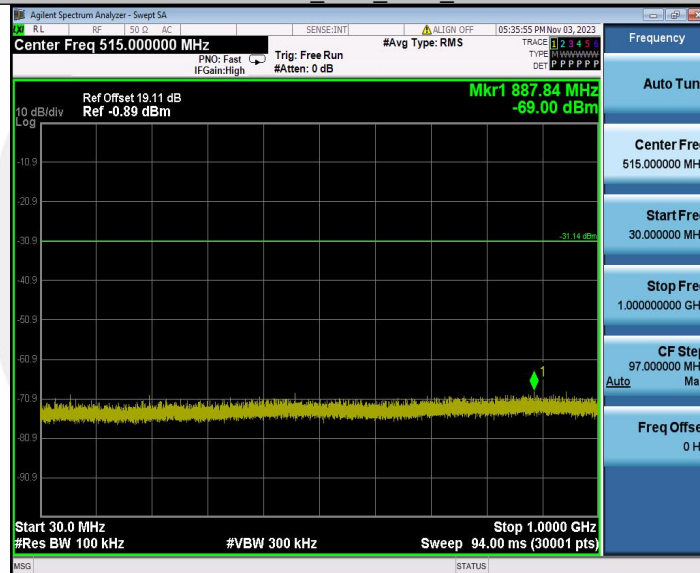
11N20MIMO_Ant2_2412_1000~26500



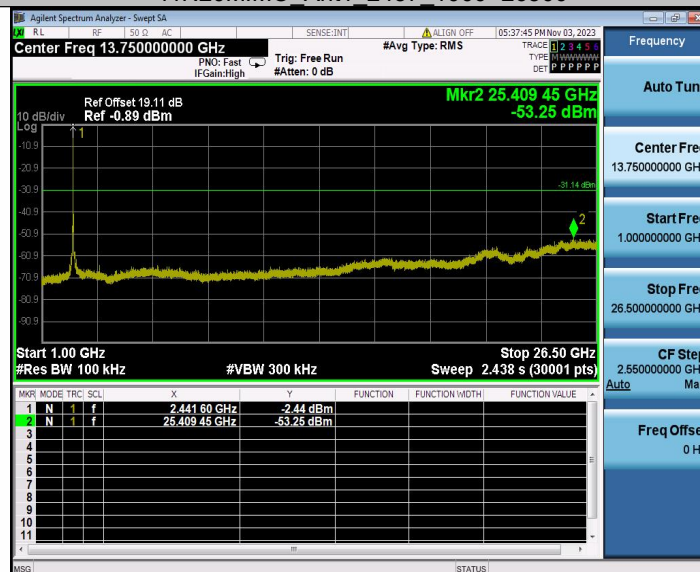
11N20MIMO_Ant1_2437_0~Reference



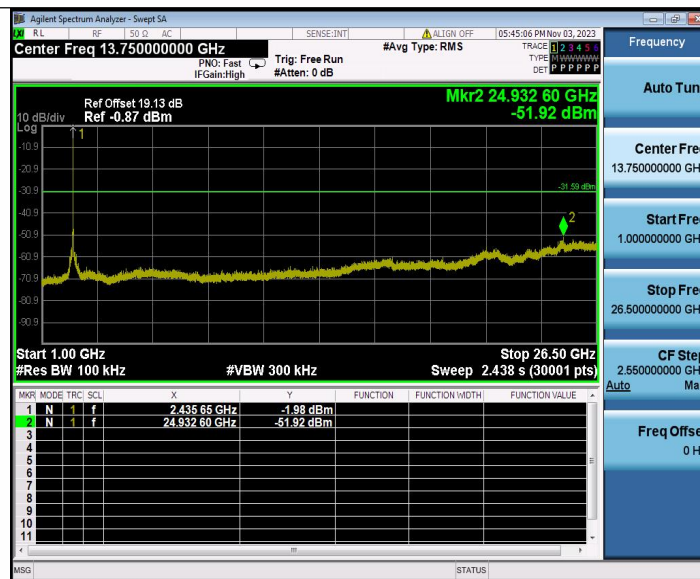
11N20MIMO Ant1 2437 30~1000



11N20MIMO Ant1 2437 1000~26500



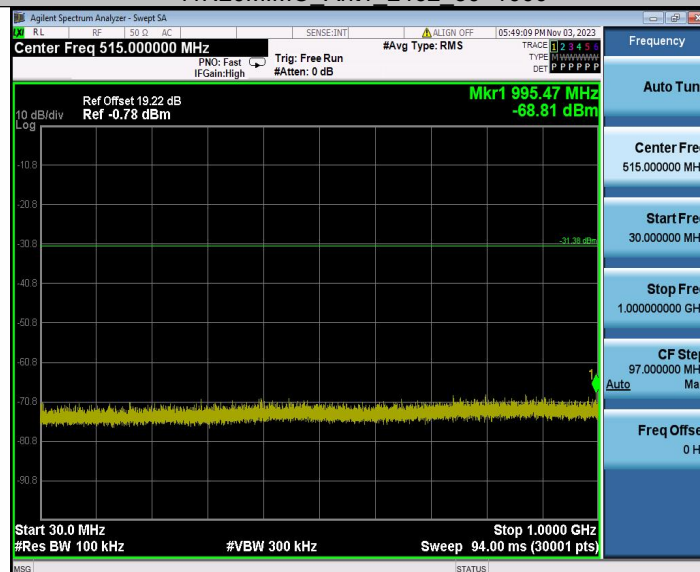




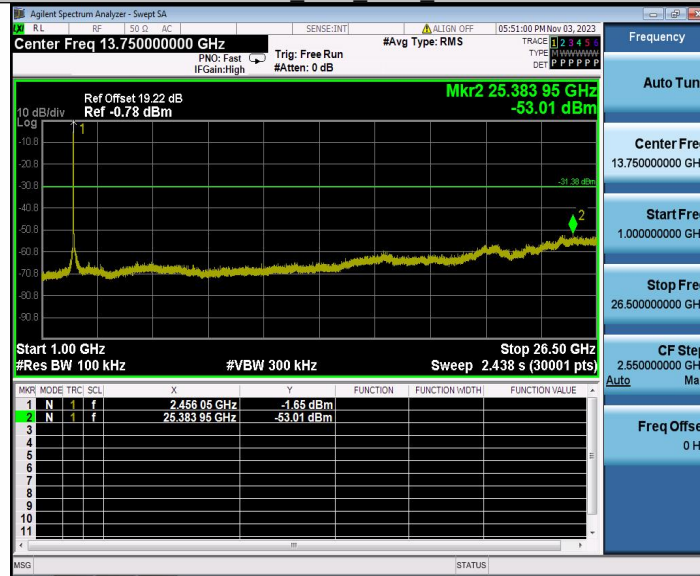
11N20MIMO Ant1 2462 0~Reference



11N20MIMO Ant1 2462 30~1000



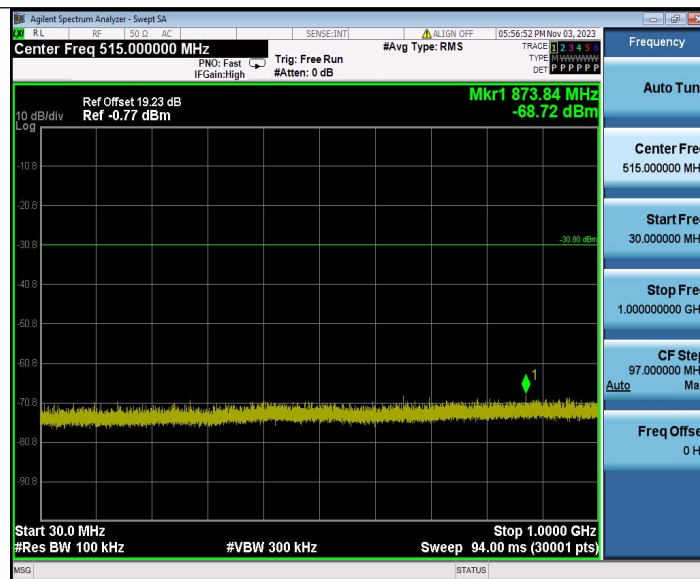
11N20MIMO_Ant1_2462_1000~26500



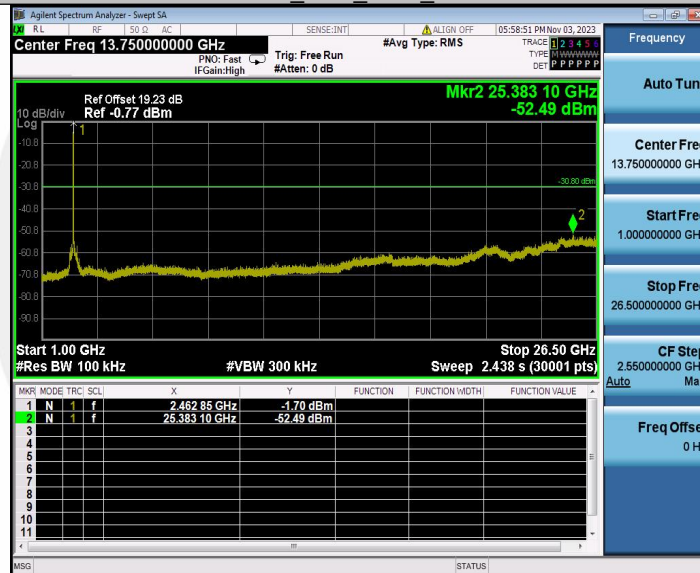
11N20MIMO_Ant2_2462_0~Reference



11N20MIMO_Ant2_2462_30~1000



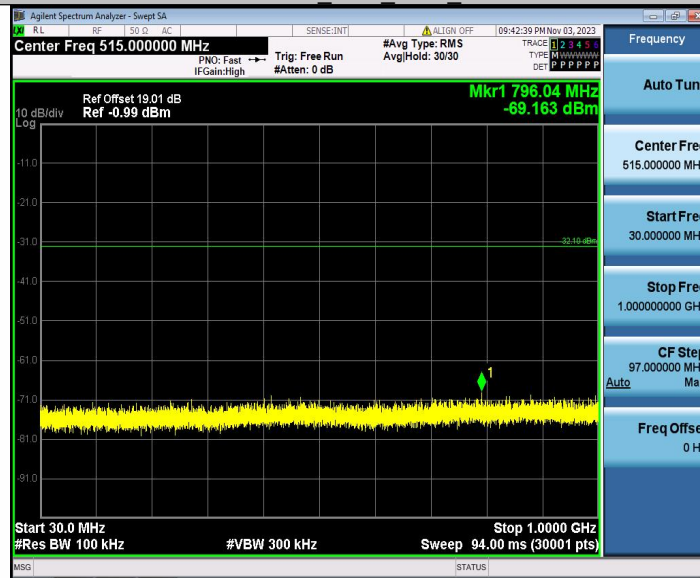
11N20MIMO Ant2 2462 1000~26500



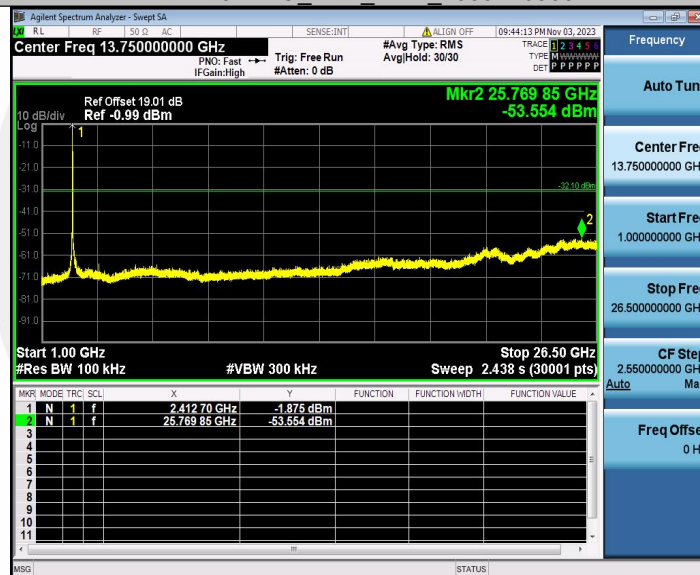
11AX20MIMO Ant1 2412 0~Reference



11AX20MIMO_Ant1_2412_30~1000



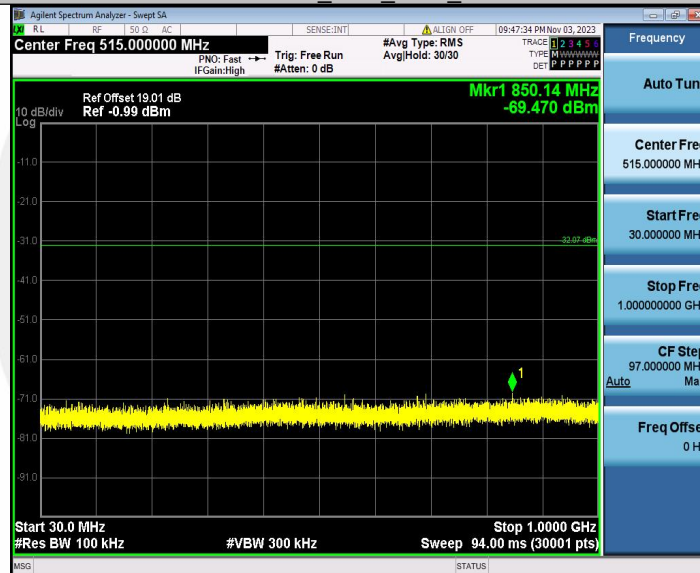
11AX20MIMO_Ant1_2412_1000~26500



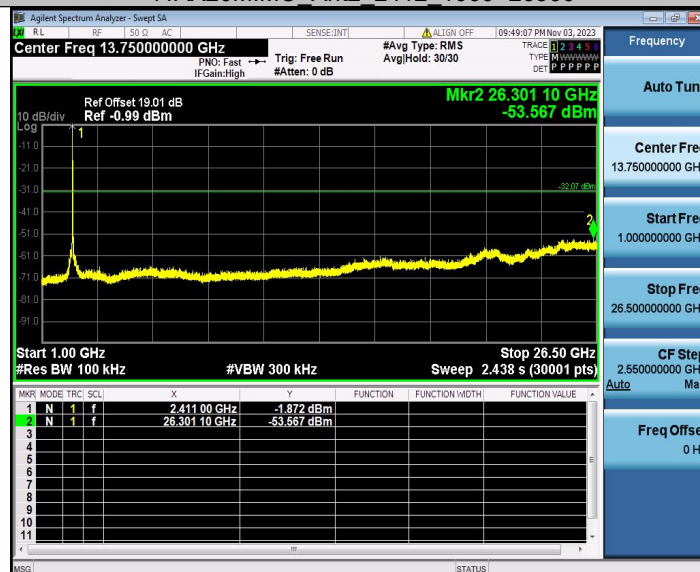
11AX20MIMO_Ant2_2412_0~Reference



11AX20MIMO_Ant2_2412_30~1000



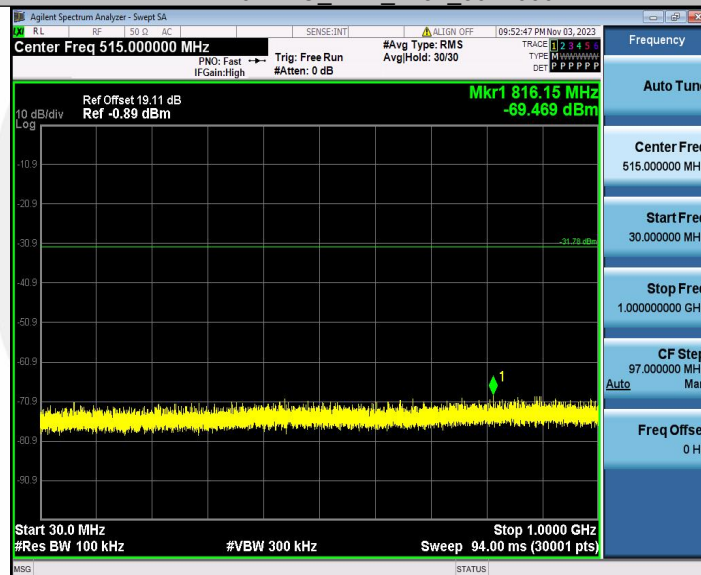
11AX20MIMO_Ant2_2412_1000~26500



11AX20MIMO_Ant1_2437_0~Reference



11AX20MIMO_Ant1_2437_30~1000



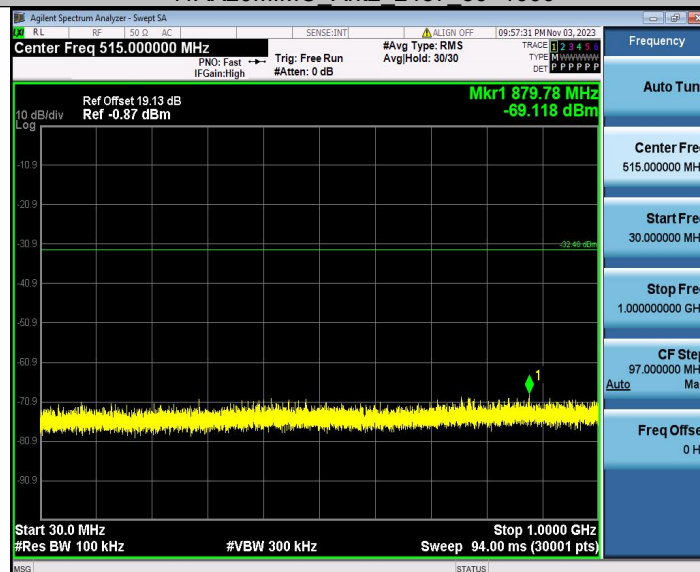
11AX20MIMO_Ant1_2437_1000~26500



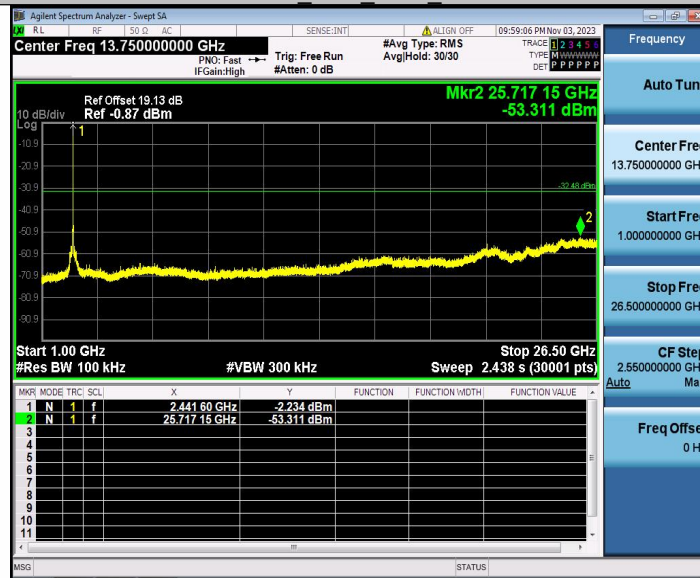
11AX20MIMO Ant2 2437 0~Reference



11AX20MIMO Ant2 2437 30~1000



11AX20MIMO_Ant2_2437_1000~26500



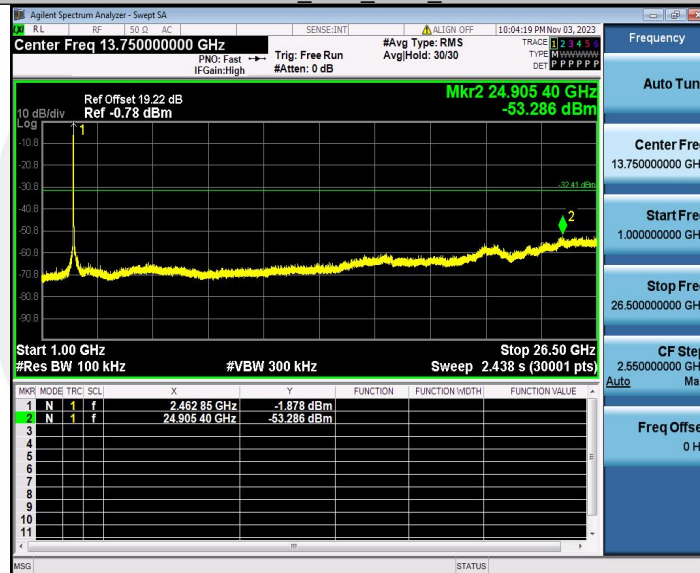
11AX20MIMO_Ant1_2462_0~Reference



11AX20MIMO_Ant1_2462_30~1000

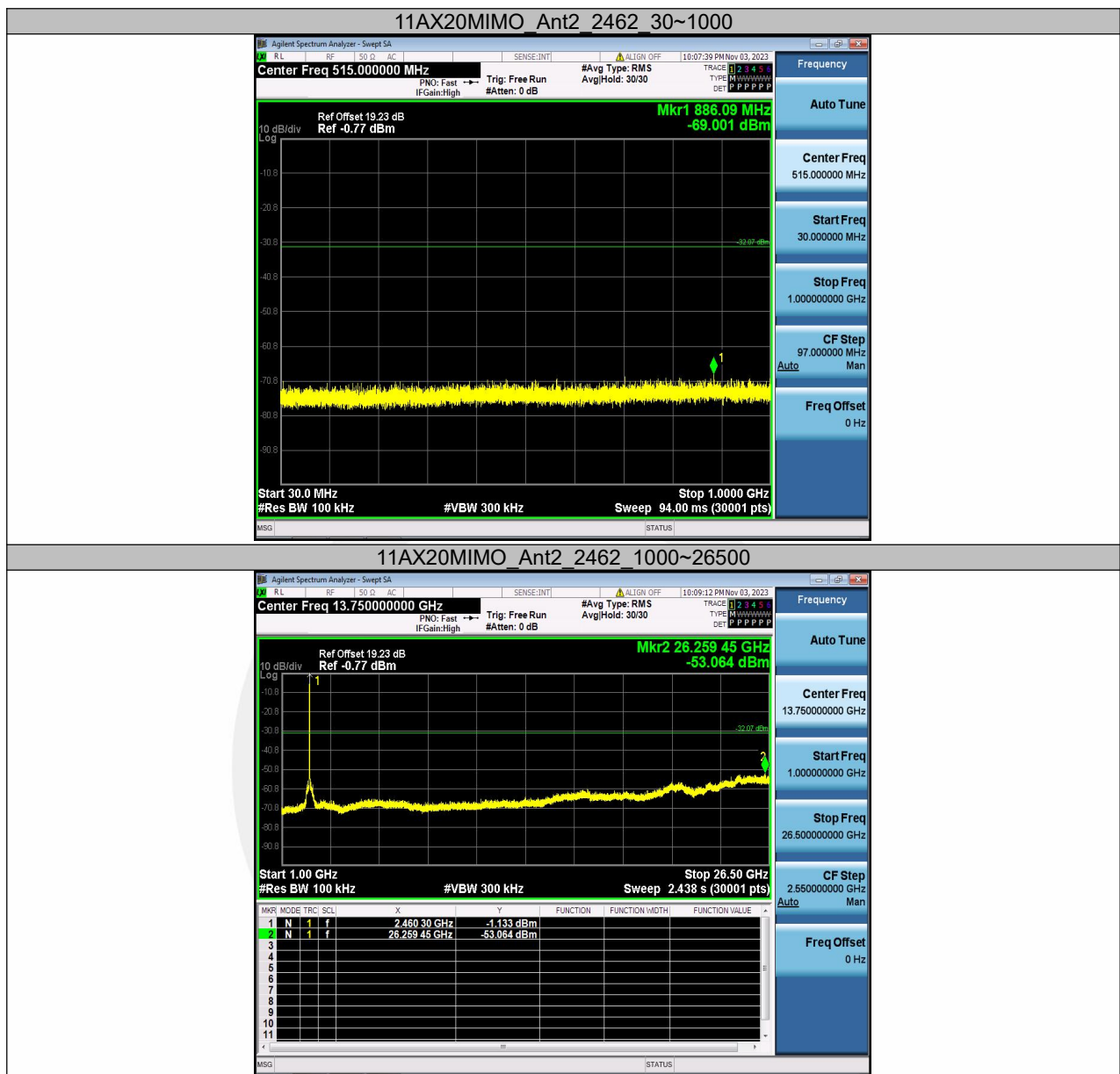


11AX20MIMO_Ant1_2462_1000~26500



11AX20MIMO_Ant2_2462_0~Reference





8.6 RADIATED SPURIOUS EMISSION

8.6.1 Applicable Standard

According to FCC Part 15.247(d), 15.205, 15.209 and KDB 558074 D01 15.247 Meas Guidance v05r02
According to IC RSS-Gen and RSS-247

8.6.2 Conformance Limit

According to FCC Part 15.247(d): radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).
According to FCC Part 15.205, Restricted bands

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

According to FCC Part 15.205 the level of any transmitter spurious emission in Restricted bands shall not exceed the level of the emission specified in the following table

Restricted Frequency (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance
0.009-0.490	2400/F(KHz)	20 log (μV/m)	300
0.490-1.705	24000/F(KHz)	20 log (μV/m)	30
1.705-30	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

8.6.3 Test Configuration

Test according to clause 6.2 radio frequency test setup

8.6.4 Test Procedure

This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:

For Above 1GHz:

The EUT was placed on a turn table which is 1.5m above ground plane.

Maximum procedure was performed on the highest emissions to ensure EUT compliance.

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz

VBW ≥ RBW

Sweep = auto

Detector function = peak

Trace = max hold

For Below 1GHz:

The EUT was placed on a turn table which is 0.8m above ground plane.

Maximum procedure was performed on the highest emissions to ensure EUT compliance.

Span = wide enough to fully capture the emission being measured

RBW = 100 kHz for

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

For Below 30MHz:

The EUT was placed on a turn table which is 0.8m above ground plane.

Maximum procedure was performed on the highest emissions to ensure EUT compliance.

Span = wide enough to fully capture the emission being measured

RBW = 9kHz

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

For Below 150KHz:

The EUT was placed on a turn table which is 0.8m above ground plane.

Maximum procedure was performed on the highest emissions to ensure EUT compliance.

Span = wide enough to fully capture the emission being measured

RBW = 200Hz

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

Follow the guidelines in ANSI C63.10 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit. Submit this data.

Now set the VBW to 10 Hz, while maintaining all of the other instrument settings. This peak level, once corrected, must comply with the limit. If the dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from $20\log(\text{dwell time}/100 \text{ ms})$, in an effort to demonstrate compliance with the limit. Submit this data.

Repeat above procedures until all frequency measured was complete.

8.6.5 Test Results

Temperature:	26° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

■ Spurious Emission below 30MHz(9KHz to 30MHz)

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
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Note: the amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

Distance extrapolation factor = $40\log(\text{Specific distance}/ \text{test distance})$ (dB);

Limit line=Specific limits(dBuV) + distance extrapolation factor

■ Spurious Emission Above 1GHz(1GHz to 25GHz)

All the antenna(Antenna 1&2)and modes(802.11b/g/n)have been tested and the worst(Antenna 1,802.11b) result recorded was report as below:

Test mode: 802.11b Frequency: Channel 1: 2412MHz

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
	H/V	PK	AV	PK	AV	PK	AV
11505	V	60.70	48.42	74.00	54.00	13.30	5.58
14643.7	V	64.03	47.40	74.00	54.00	9.97	6.60
17962.5	V	70.61	47.89	74.00	54.00	3.39	6.11
11505	H	61.31	47.59	74.00	54.00	12.69	6.41
14733.7	H	64.82	46.43	74.00	54.00	9.18	7.57
17619.3	H	70.59	50.40	74.00	54.00	3.41	3.60

Test mode: 802.11b Frequency: Channel 6: 2437MHz

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
	H/V	PK	AV	PK	AV	PK	AV
11418.7	V	61.25	47.08	74.00	54.00	12.75	6.92
14715	V	64.86	46.82	74.00	54.00	9.14	7.18
17610	V	70.78	50.33	74.00	54.00	3.22	3.67
11461.8	H	61.09	47.38	74.00	54.00	12.91	6.62
14679.3	H	64.61	46.92	74.00	54.00	9.39	7.08
17602.5	H	71.38	50.57	74.00	54.00	2.62	3.43

Test mode: 802.11b Frequency: Channel 11: 2462MHz

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
	H/V	PK	AV	PK	AV	PK	AV
11529.3	V	61.25	47.58	74.00	54.00	12.75	6.42
14593.1	V	64.40	48.15	74.00	54.00	9.60	5.85
17643.75	V	71.60	48.85	74.00	54.00	2.40	5.15
11503.1	H	60.56	47.83	74.00	54.00	13.44	6.17
14578.1	H	65.44	48.21	74.00	54.00	8.56	5.79
17604.3	H	71.93	50.64	74.00	54.00	2.07	3.36

- Note:**
- (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
 - (2) Emission Level= Reading Level+Correct Factor.
 - (3) Correct Factor= Ant_F + Cab_L - Preamp
 - (4) The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

■ Spurious Emission in Restricted Band 2310-2390MHz and 2483.5-2500MHz

All the antenna(Antenna 1&2) and modes(802.11b/g/n) have been tested and the worst(Antenna 1,802.11b) result recorded was report as below:

Test mode: 802.11b Frequency: Channel 1: 2412MHz

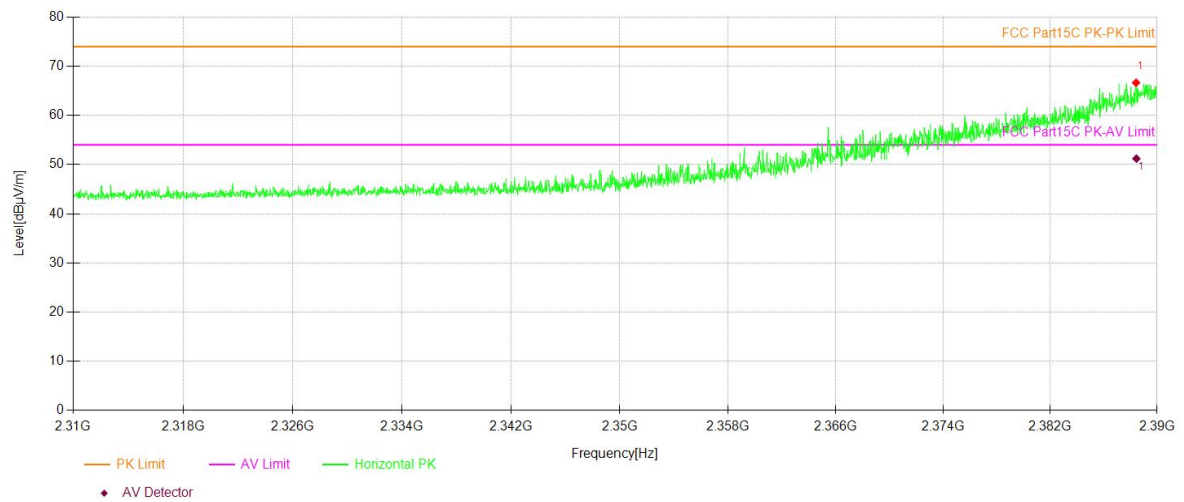
Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)
2388.42	H	66.64	74.00	51.21	54.00
2387.09	V	63.10	74.00	48.31	54.00

Test mode: 802.11b Frequency: Channel 11: 2462MHz

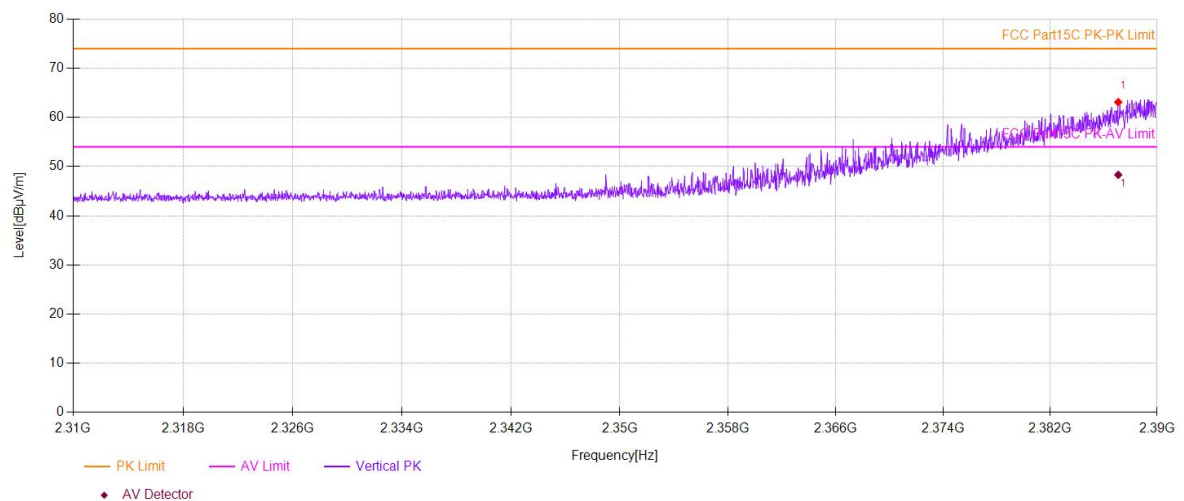
Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)
2484.51	H	63.38	74.00	49.63	54.00
2483.73	V	65.45	74.00	50.53	54.00

- Note:**
- (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
 - (2) Emission Level= Reading Level+Correct Factor.
 - (3) Correct Factor= Ant_F + Cab_L - Preamp
 - (4) The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

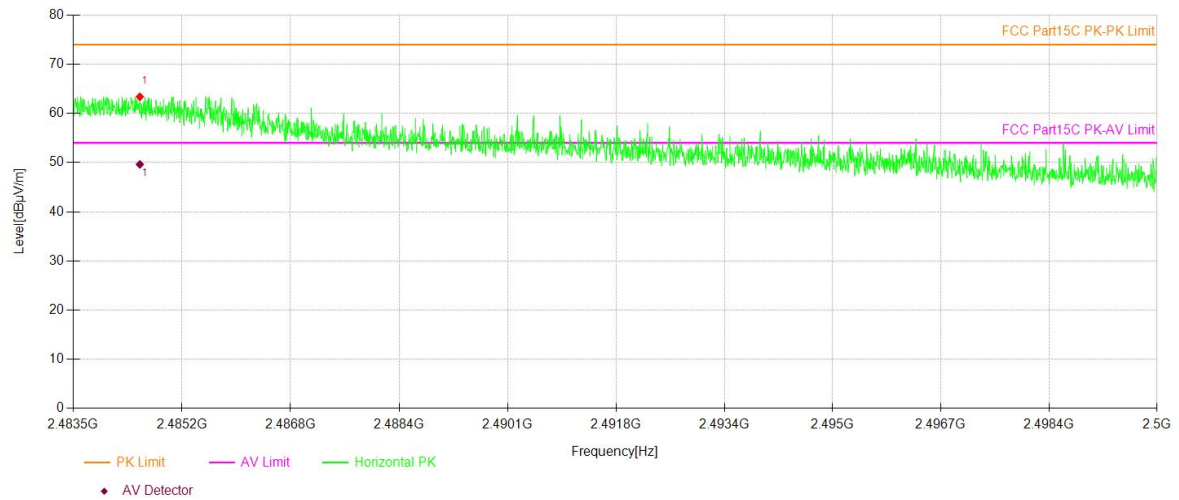
Test Model	802.11b	Spurious Emission in Restricted Band 2310-2390MHz	Channel 1: 2412MHz	VBW=3MHz	Polarity: H
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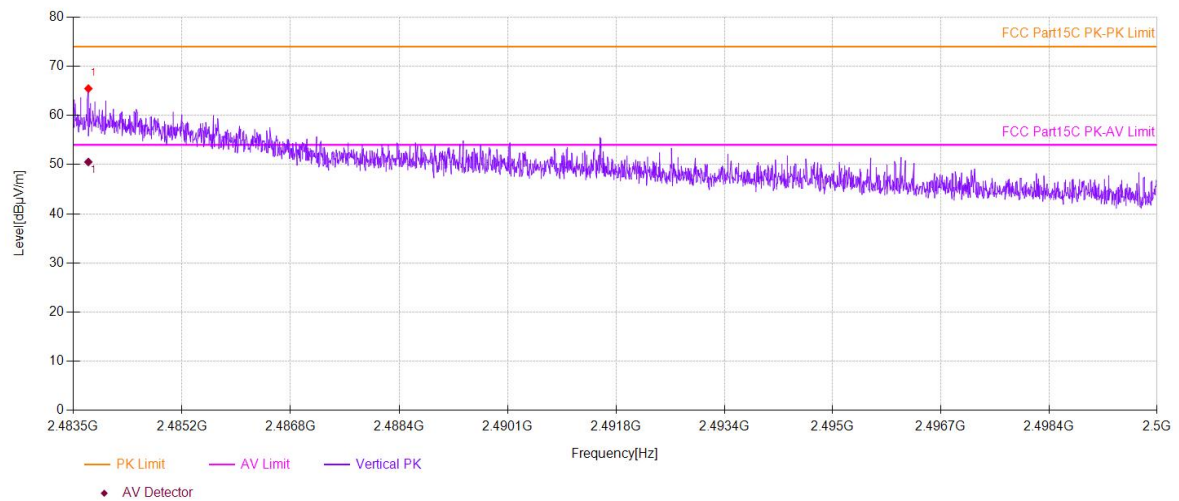
Test Model	802.11b	Spurious Emission in Restricted Band 2310-2390MHz	Channel 1: 2412MHz	VBW=3MHz	Polarity: V
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Test Model	802.11b	Spurious Emission in Restricted Band 2483.5-2500MHz		
		Channel 11: 2462MHz	VBW=3MHz	Polarity: H



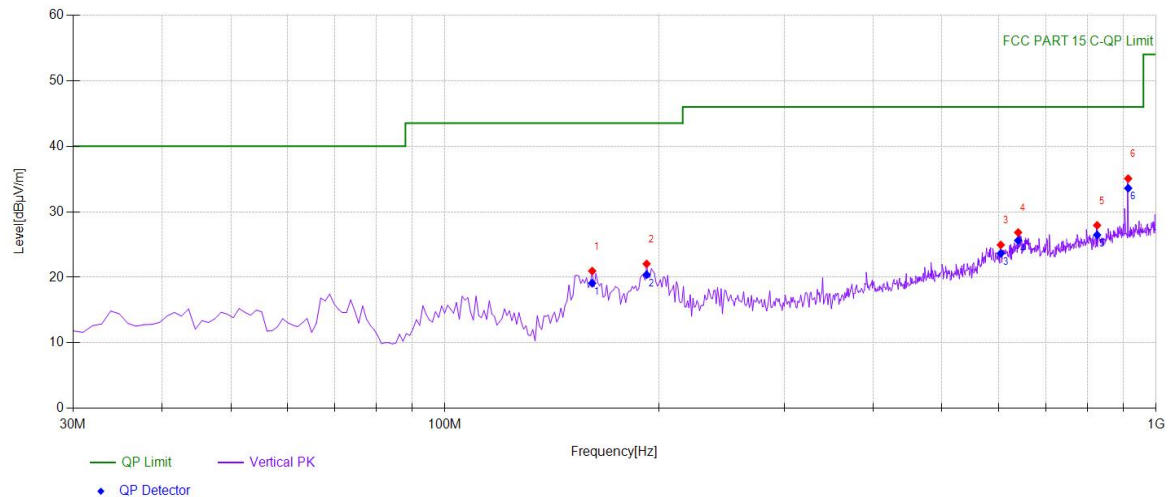
Test Model	802.11b	Spurious Emission in Restricted Band 2483.5-2500MHz		
		Channel 11: 2462MHz	VBW=3MHz	Polarity: V



■ Spurious Emission below 1GHz (30MHz to 1GHz)

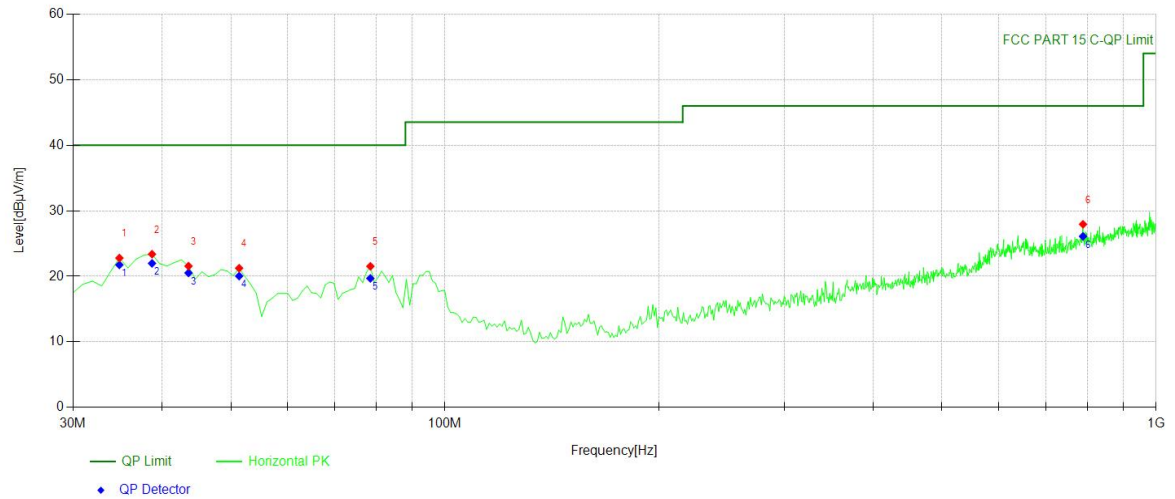
All the antenna(Antenna 1&2) and modes(802.11b/g/n) have been tested and the worst(Antenna 1,802.11b) result recorded was report as below:

Mode:	11B 2412
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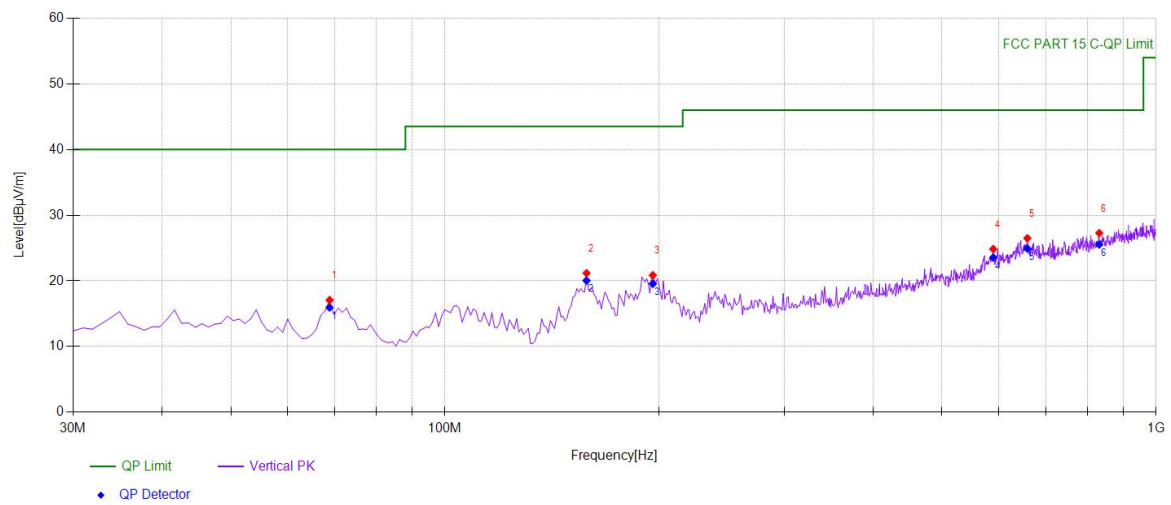
Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	161.0811	40.50	-19.54	20.96	PK	43.50	22.54	Vertical
2	192.1522	39.67	-17.61	22.06	PK	43.50	21.44	Vertical
3	604.8148	32.06	-7.11	24.95	PK	46.00	21.05	Vertical
4	639.7698	33.10	-6.26	26.84	PK	46.00	19.16	Vertical
5	826.1962	32.12	-4.19	27.93	PK	46.00	18.07	Vertical
6	913.5836	37.91	-2.85	35.06	PK	46.00	10.94	Vertical

Mode:	11B 2412
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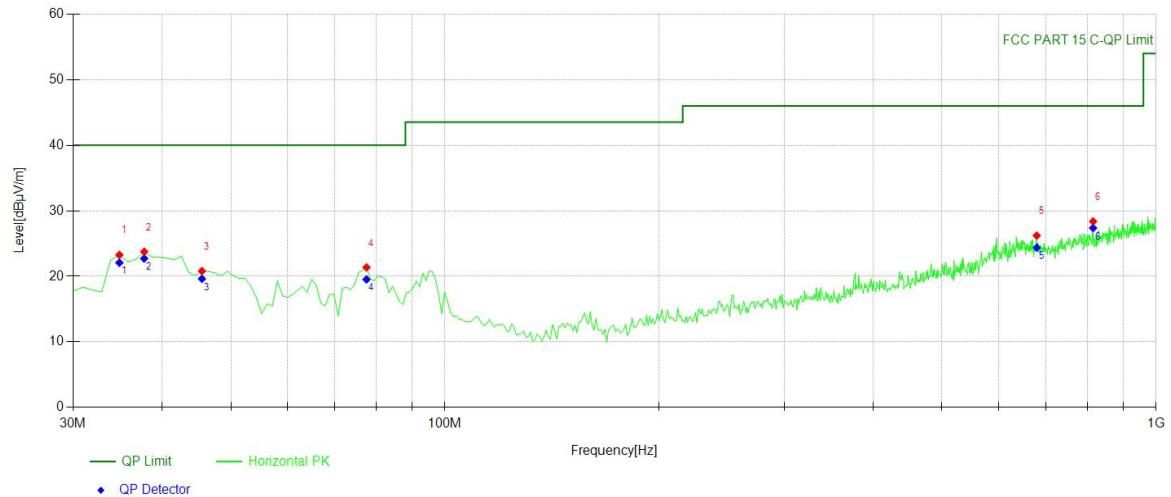
Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	34.8549	41.02	-18.23	22.79	PK	40.00	17.21	Horizontal
2	38.7387	41.37	-17.99	23.38	PK	40.00	16.62	Horizontal
3	43.5936	39.22	-17.66	21.56	PK	40.00	18.44	Horizontal
4	51.3614	38.63	-17.39	21.24	PK	40.00	18.76	Horizontal
5	78.5485	42.80	-21.27	21.53	PK	40.00	18.47	Horizontal
6	789.2993	32.47	-4.53	27.94	PK	46.00	18.06	Horizontal

Mode:	11B 2437
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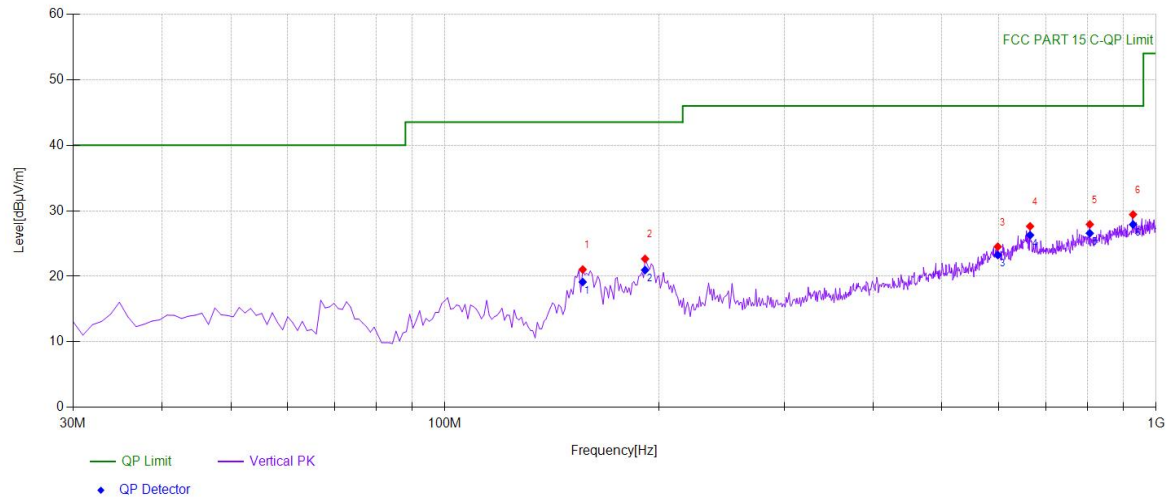
Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	68.8388	36.87	-19.80	17.07	PK	40.00	22.93	Vertical
2	158.1682	40.82	-19.64	21.18	PK	43.50	22.32	Vertical
3	196.036	38.24	-17.38	20.86	PK	43.50	22.64	Vertical
4	590.2503	31.99	-7.14	24.85	PK	46.00	21.15	Vertical
5	659.1892	32.63	-6.14	26.49	PK	46.00	19.51	Vertical
6	832.022	31.35	-4.07	27.28	PK	46.00	18.72	Vertical

Mode:	11B 2437
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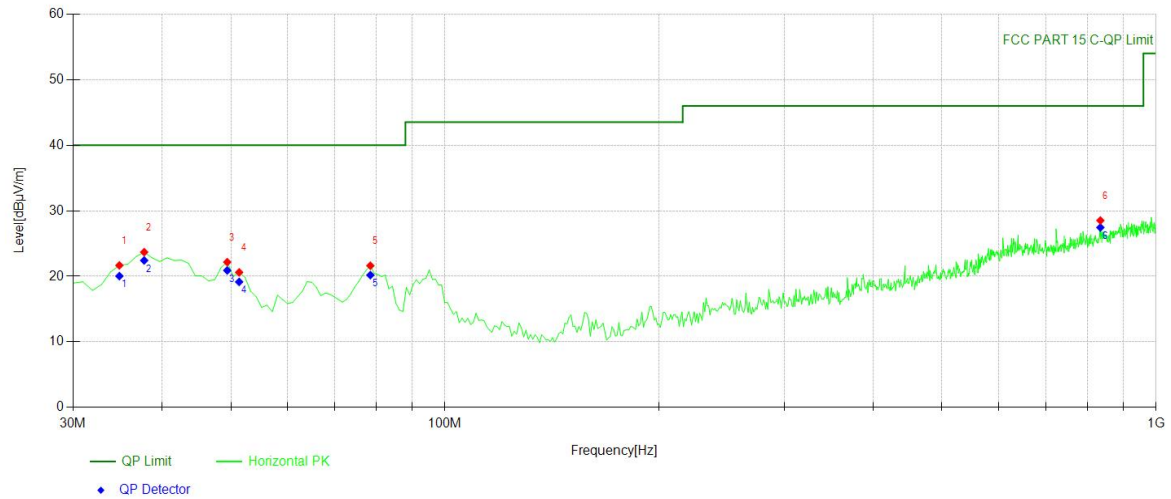
Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	34.8549	41.50	-18.23	23.27	PK	40.00	16.73	Horizontal
2	37.7678	41.80	-18.05	23.75	PK	40.00	16.25	Horizontal
3	45.5355	38.34	-17.53	20.81	PK	40.00	19.19	Horizontal
4	77.5776	42.48	-21.12	21.36	PK	40.00	18.64	Horizontal
5	679.5796	32.31	-6.10	26.21	PK	46.00	19.79	Horizontal
6	815.5155	32.68	-4.31	28.37	PK	46.00	17.63	Horizontal

Mode:	11B 2462
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Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	156.2262	40.71	-19.67	21.04	PK	43.50	22.46	Vertical
2	191.1812	40.34	-17.68	22.66	PK	43.50	20.84	Vertical
3	598.989	31.66	-7.14	24.52	PK	46.00	21.48	Vertical
4	665.015	33.77	-6.14	27.63	PK	46.00	18.37	Vertical
5	806.7768	32.29	-4.37	27.92	PK	46.00	18.08	Vertical
6	928.1481	32.10	-2.67	29.43	PK	46.00	16.57	Vertical

Mode:	11B 2462
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Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	34.8549	39.90	-18.23	21.67	PK	40.00	18.33	Horizontal
2	37.7678	41.74	-18.05	23.69	PK	40.00	16.31	Horizontal
3	49.4194	39.42	-17.25	22.17	PK	40.00	17.83	Horizontal
4	51.3614	38.00	-17.39	20.61	PK	40.00	19.39	Horizontal
5	78.5485	42.89	-21.27	21.62	PK	40.00	18.38	Horizontal
6	834.9349	32.51	-3.99	28.52	PK	46.00	17.48	Horizontal