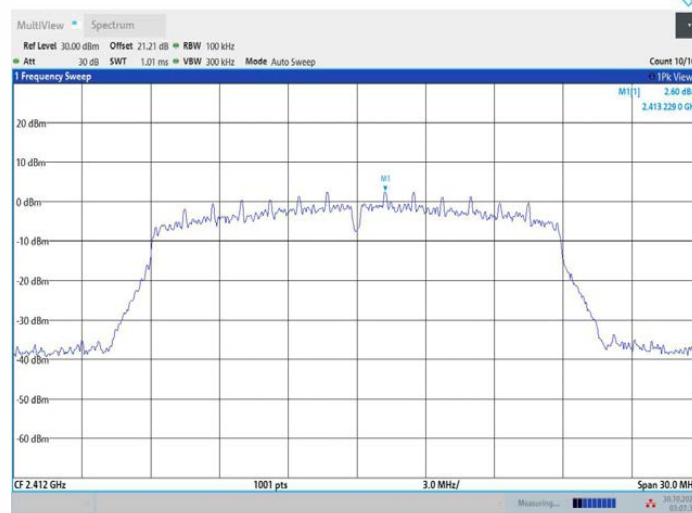
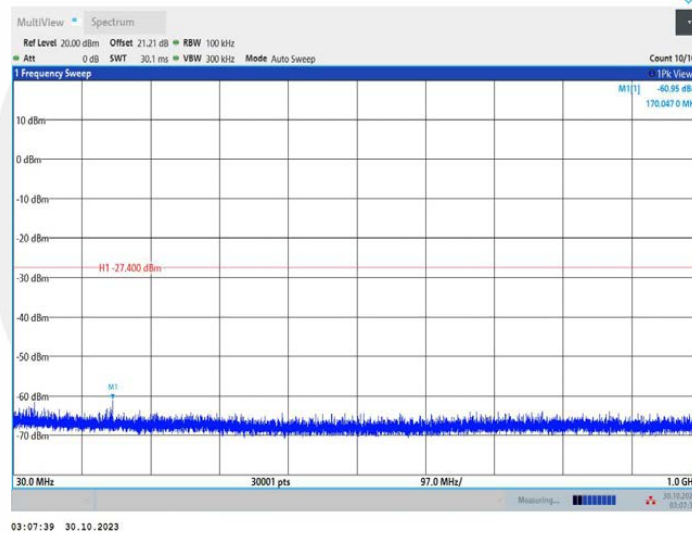


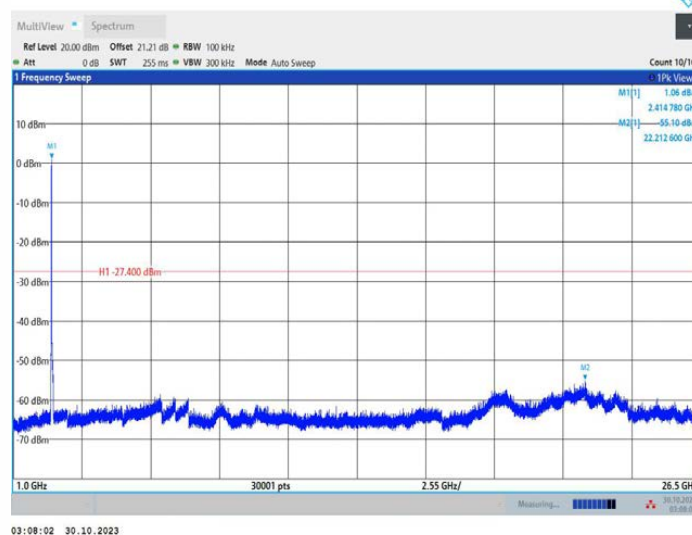
11N20MIMO_Ant1_2412_0~Reference



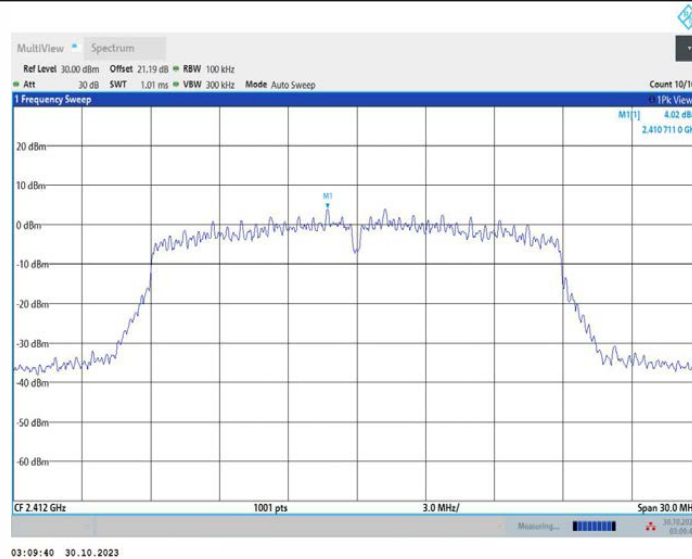
11N20MIMO_Ant1_2412_30~1000



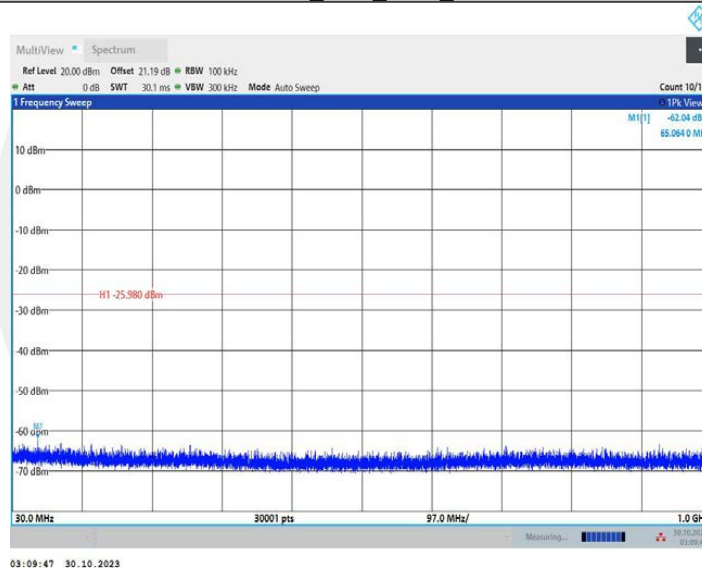
11N20MIMO_Ant1_2412_1000~26500



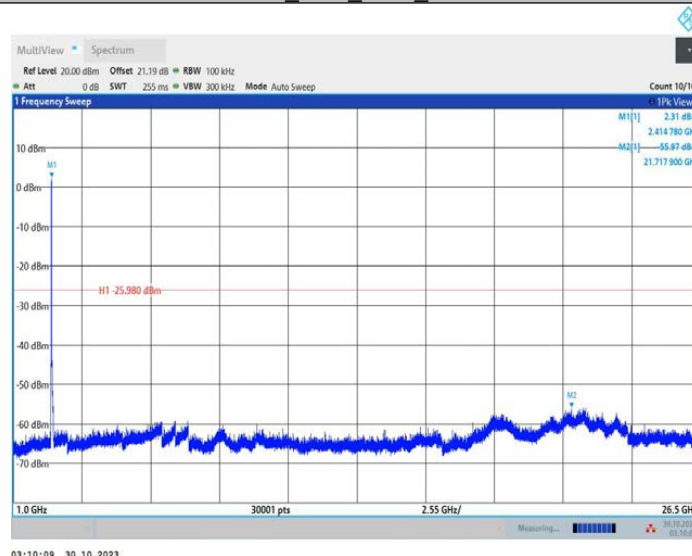
11N20MIMO_Ant2_2412_0~Reference



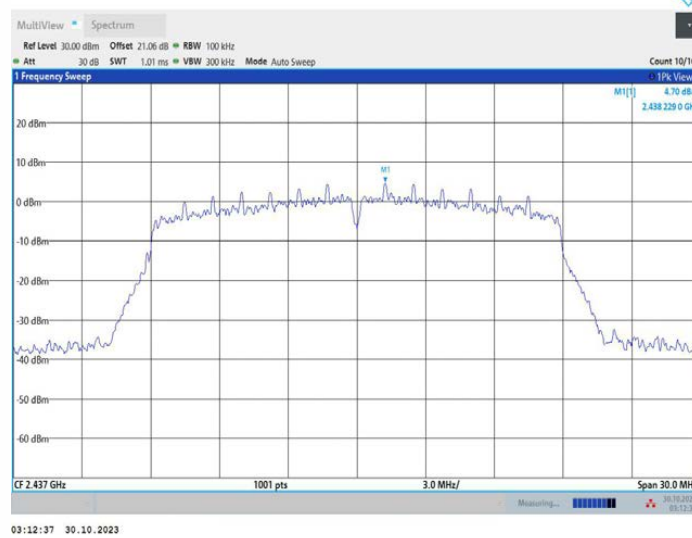
11N20MIMO_Ant2_2412_30~1000



11N20MIMO_Ant2_2412_1000~26500

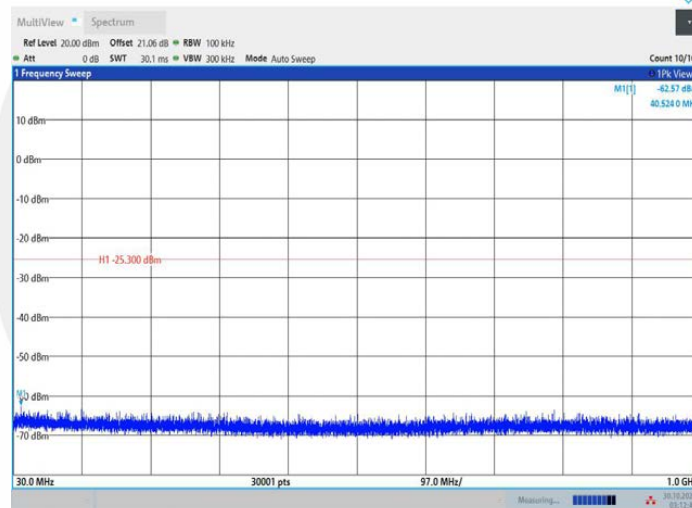


11N20MIMO_Ant1_2437_0~Reference



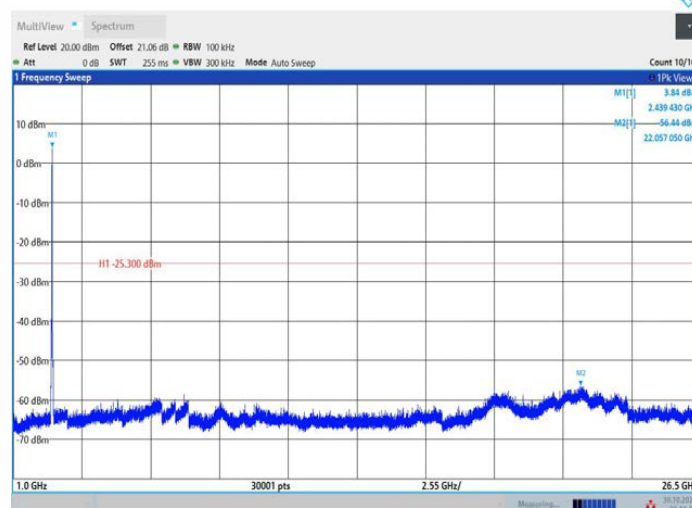
03:12:37 30.10.2023

11N20MIMO_Ant1_2437_30~1000



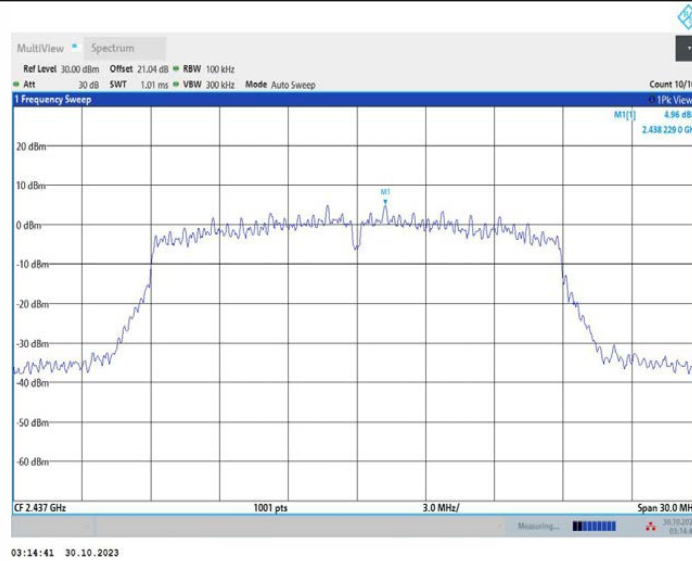
03:12:44 30.10.2023

11N20MIMO_Ant1_2437_1000~26500

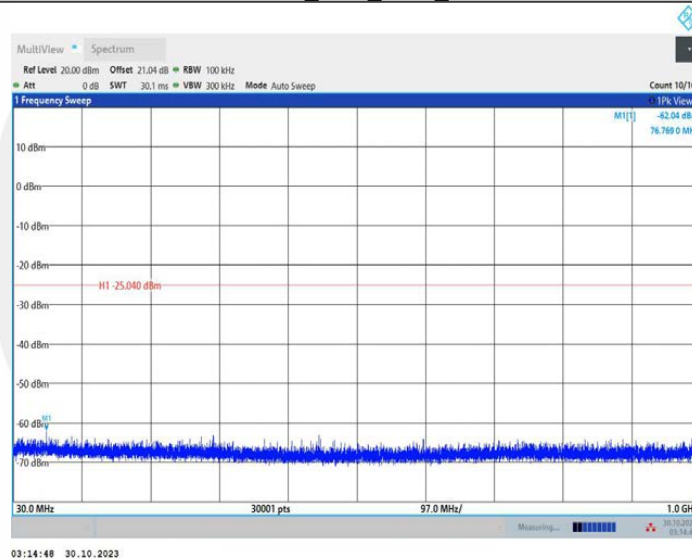


03:13:06 30.10.2023

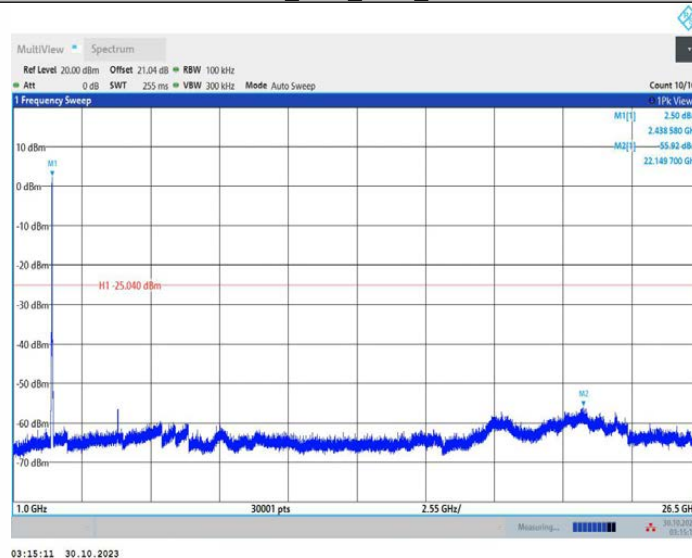
11N20MIMO_Ant2_2437_0~Reference



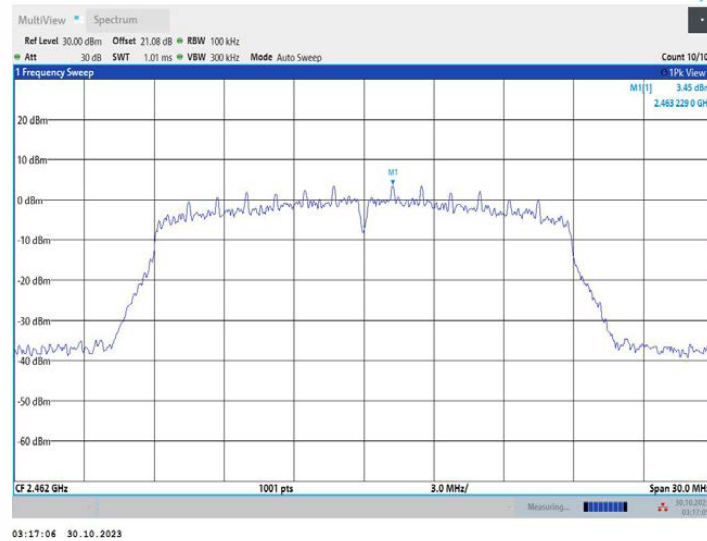
11N20MIMO_Ant2_2437_30~1000



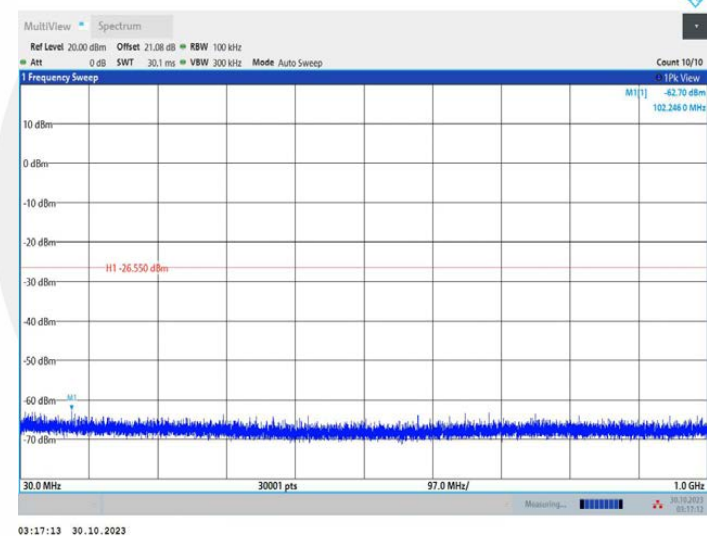
11N20MIMO_Ant2_2437_1000~26500



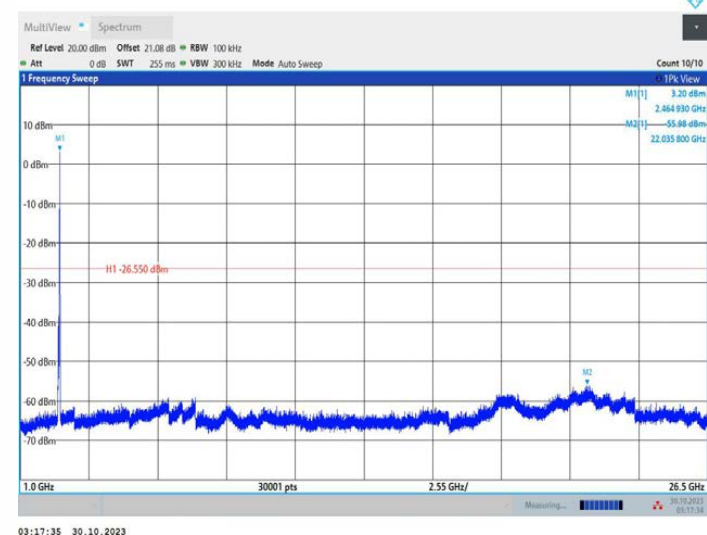
11N20MIMO_Ant1_2462_0~Reference



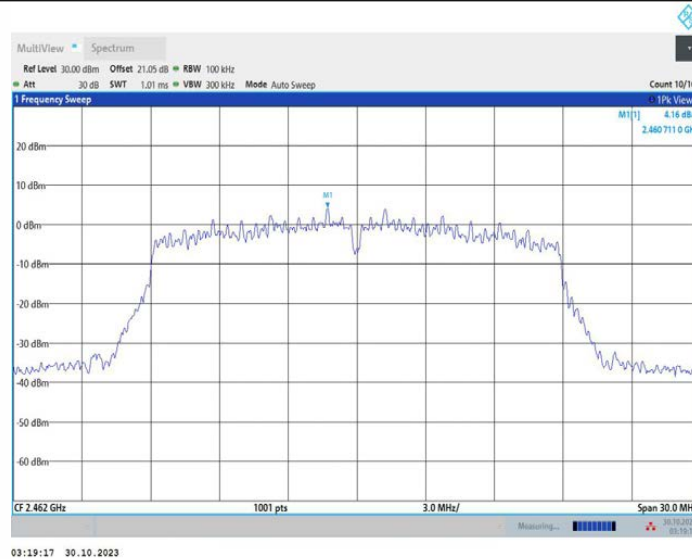
11N20MIMO_Ant1_2462_30~1000



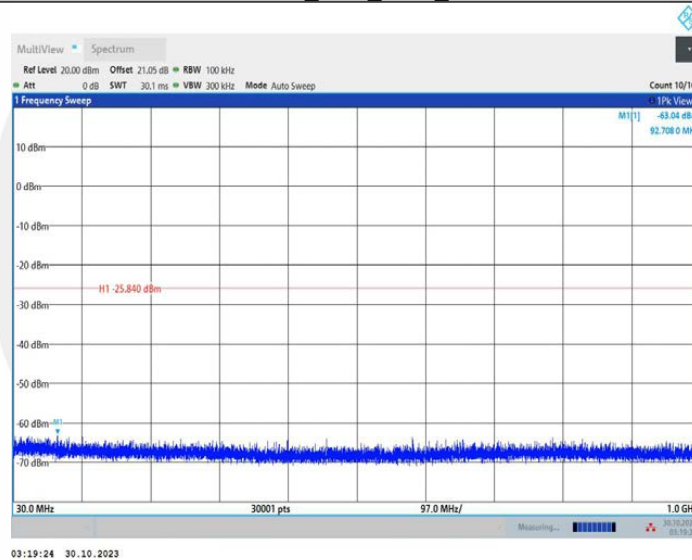
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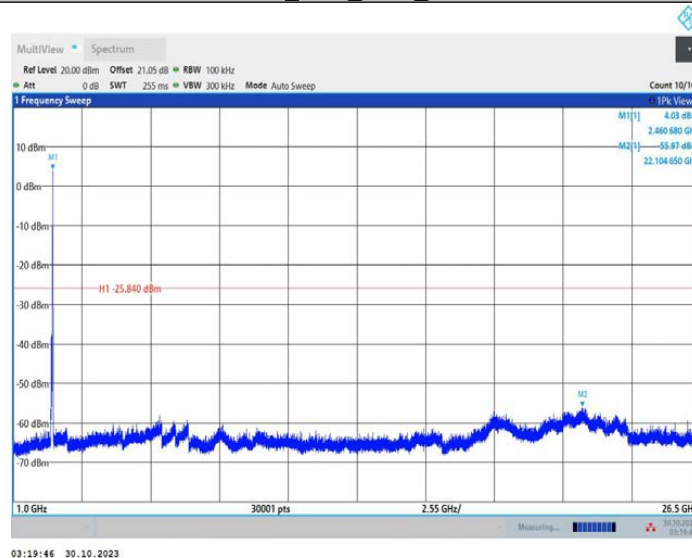
11N20MIMO_Ant2_2462_0~Reference



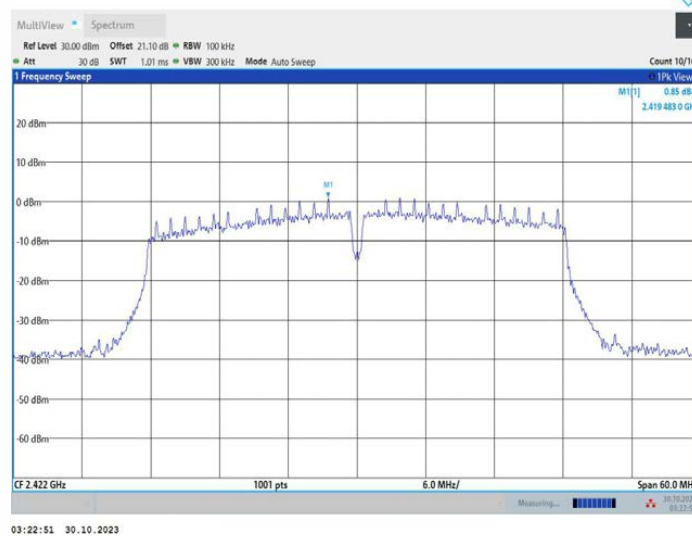
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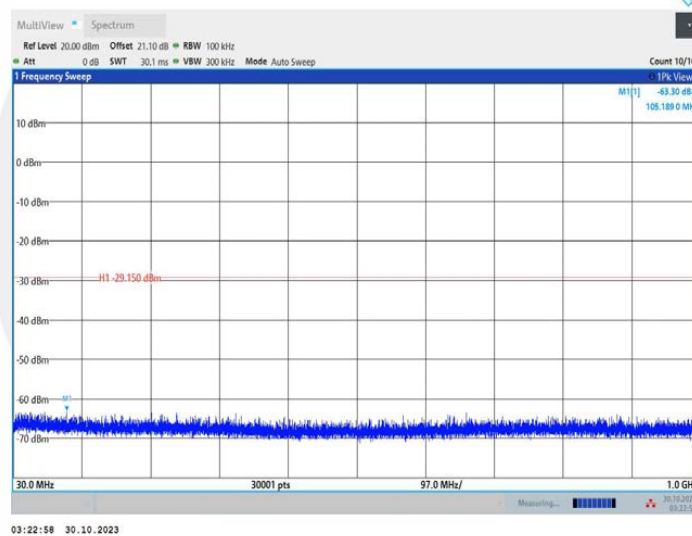
11N20MIMO_Ant2_2462_1000~26500



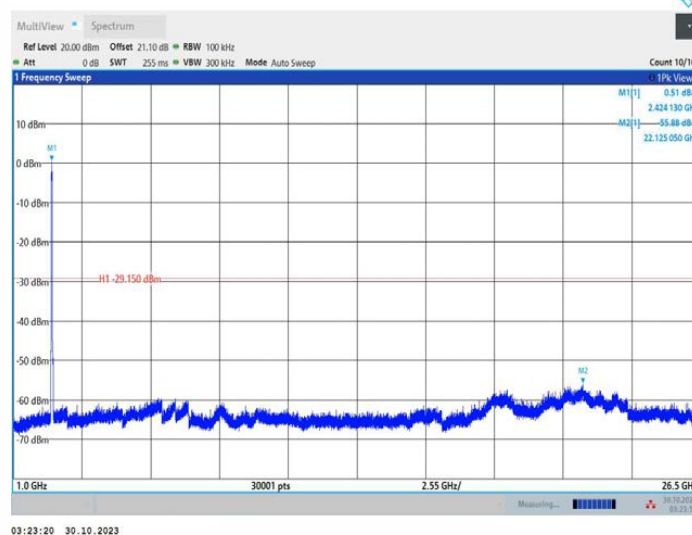
11N40MIMO_Ant1_2422_0~Reference



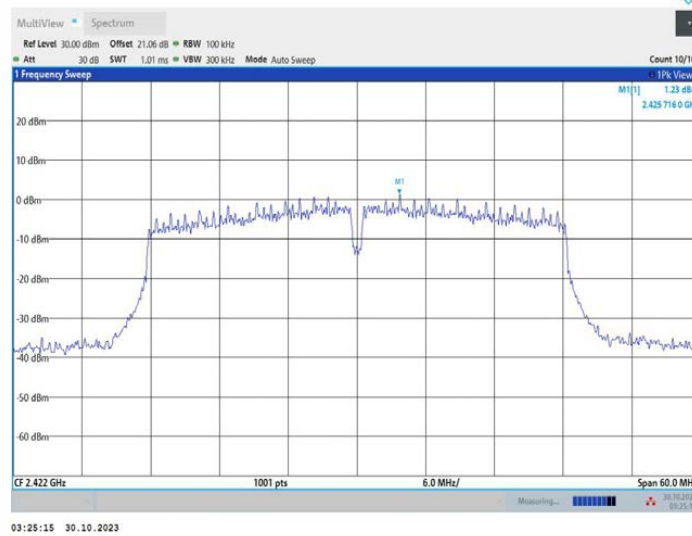
11N40MIMO_Ant1_2422_30~1000



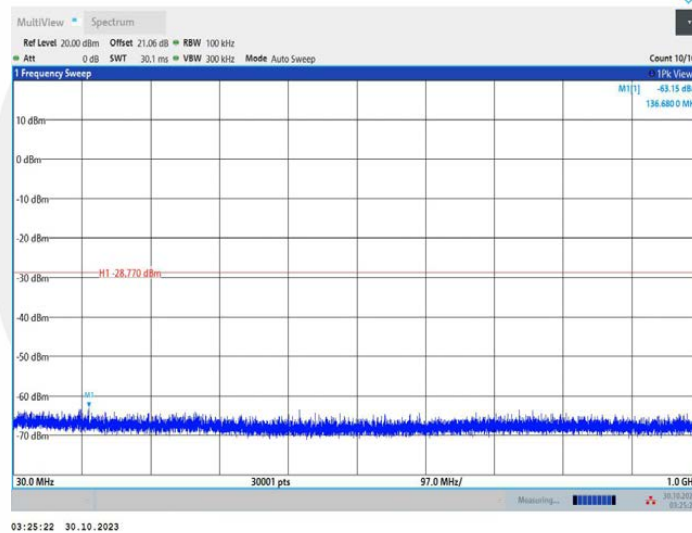
11N40MIMO_Ant1_2422_1000~26500



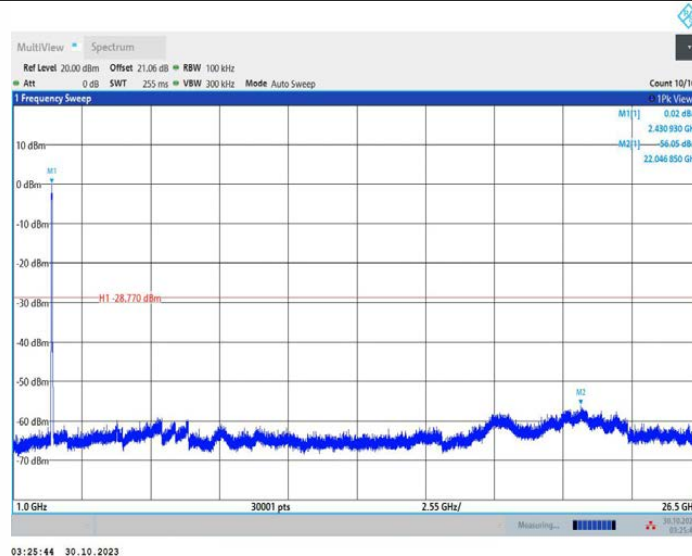
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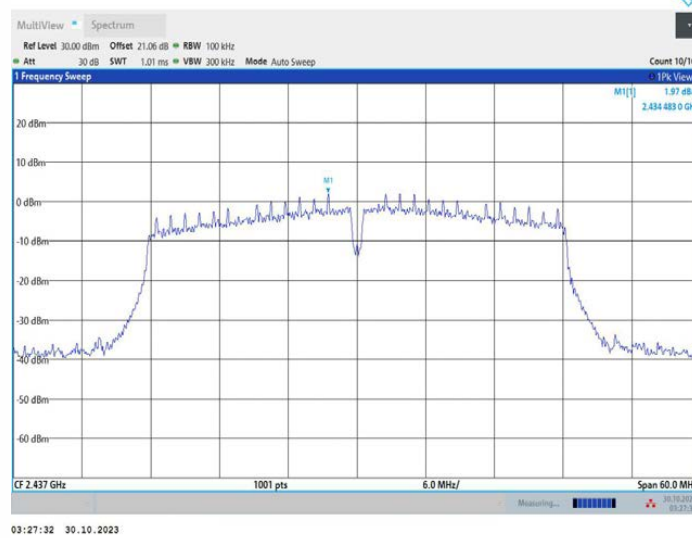
11N40MIMO_Ant2_2422_30~1000



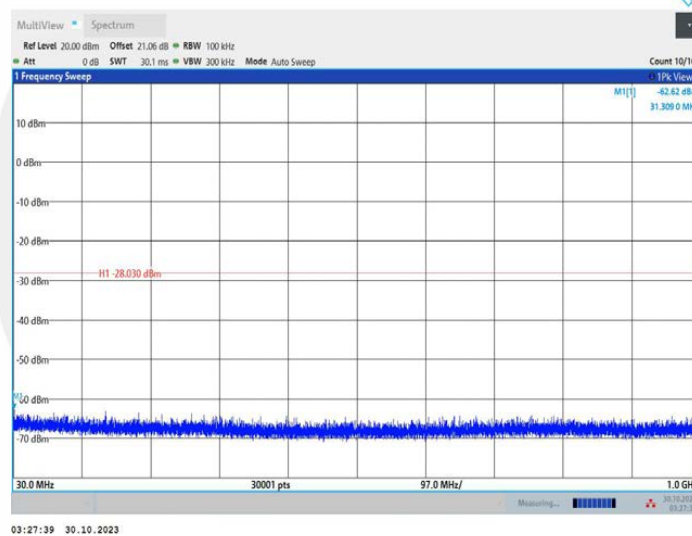
11N40MIMO_Ant2_2422_1000~26500



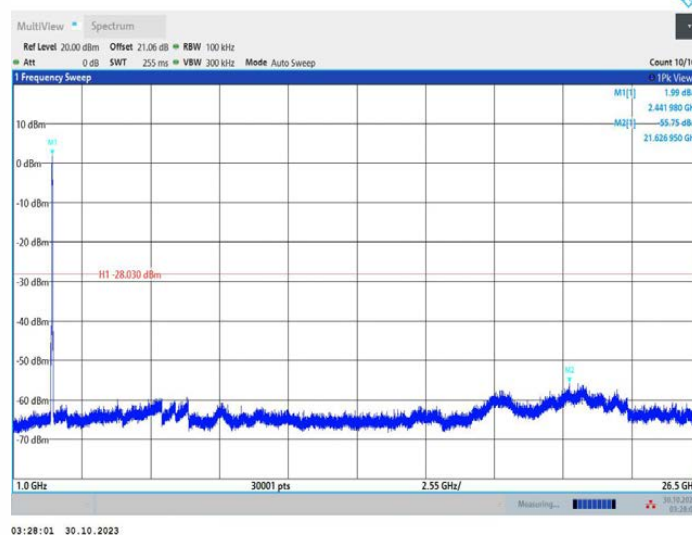
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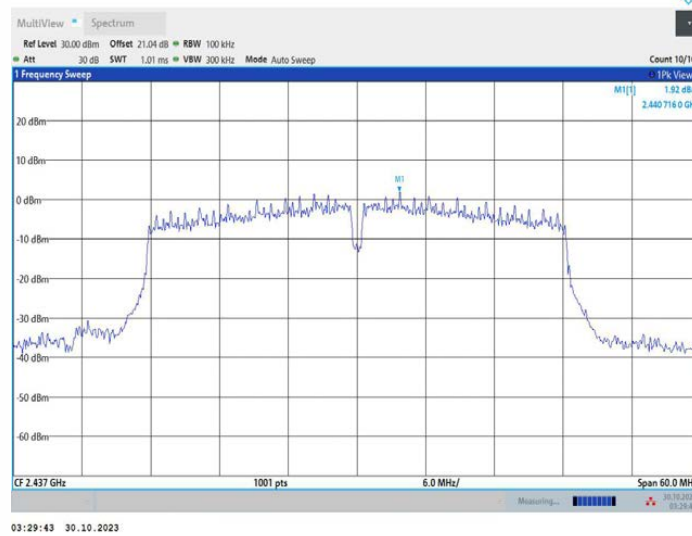
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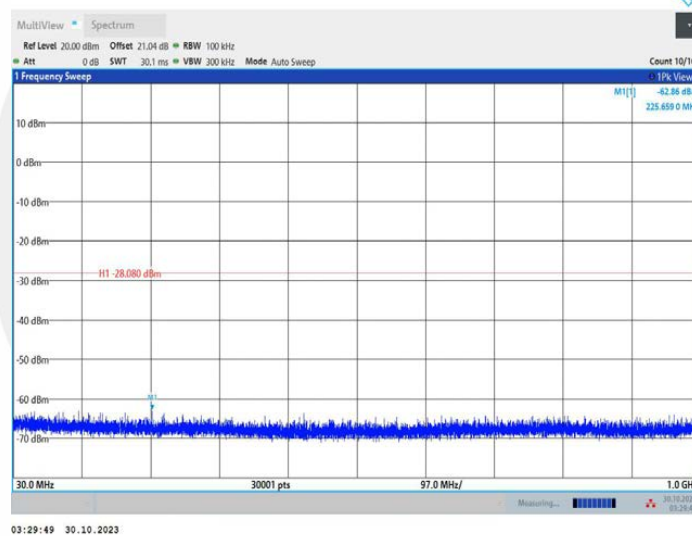
11N40MIMO_Ant1_2437_1000~26500



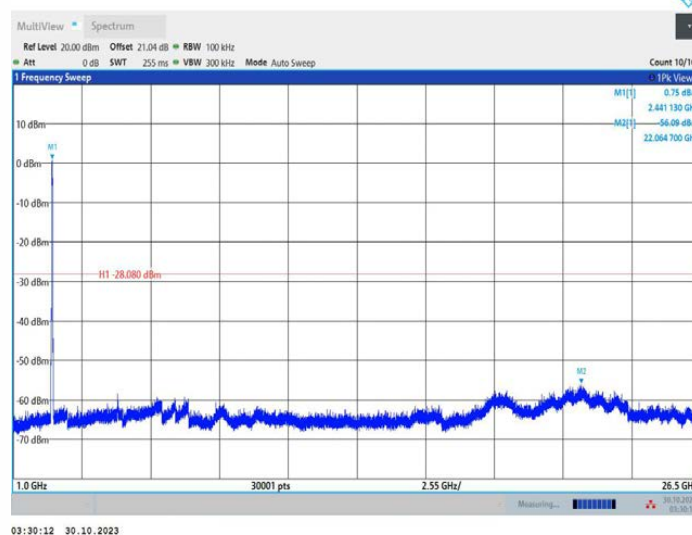
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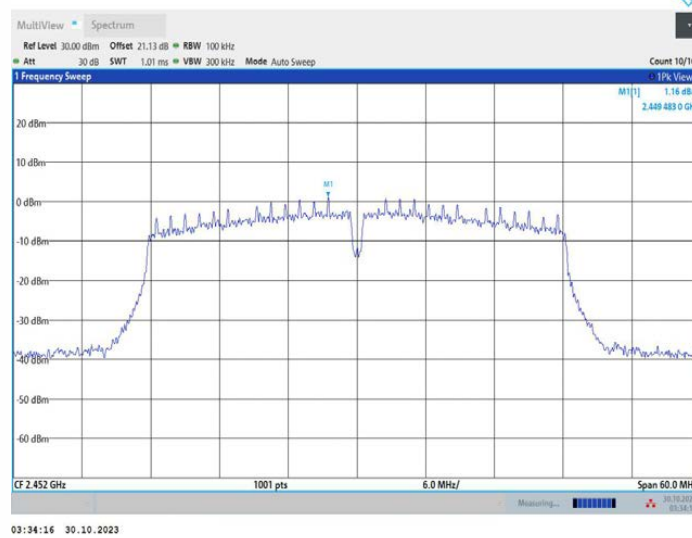
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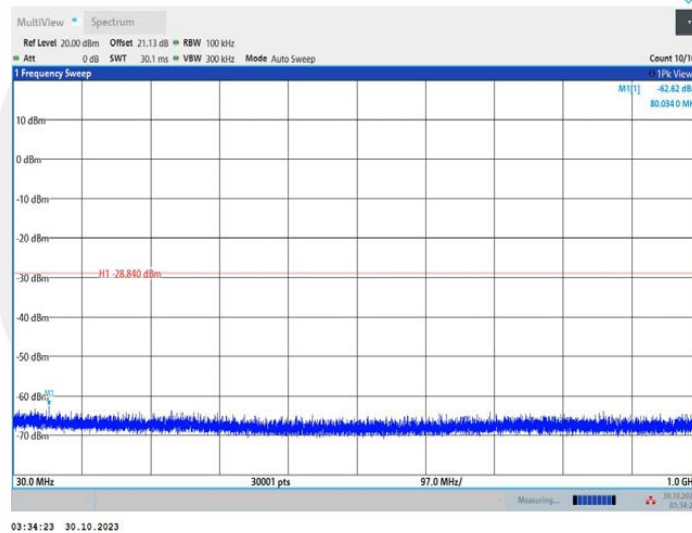
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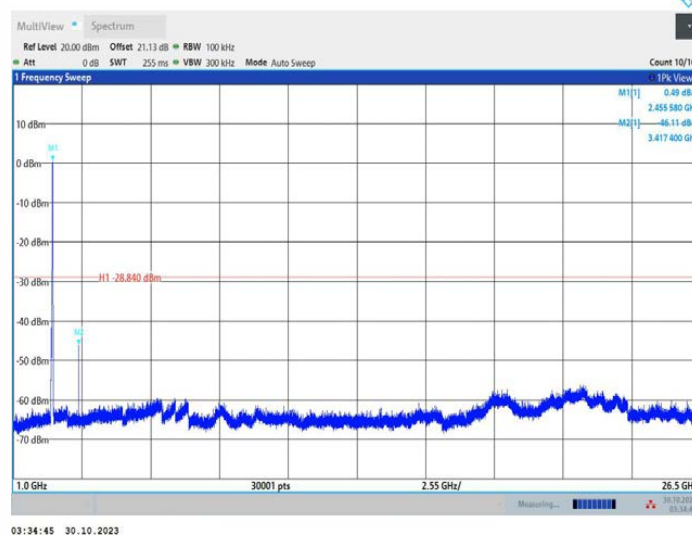
11N40MIMO_Ant1_2452_0~Reference



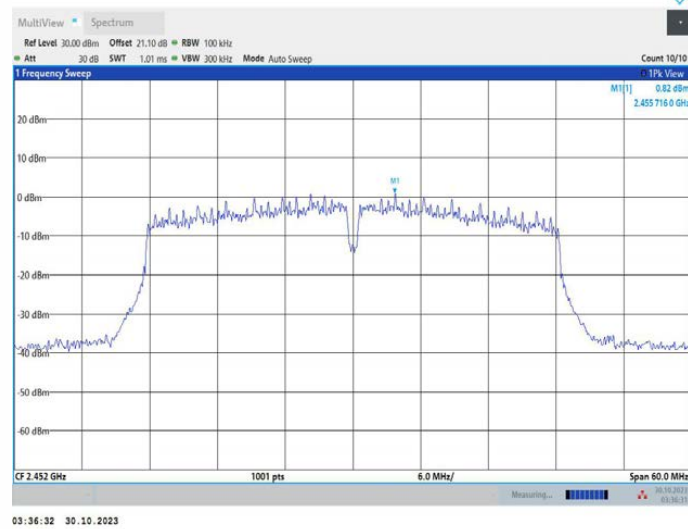
11N40MIMO_Ant1_2452_30~1000



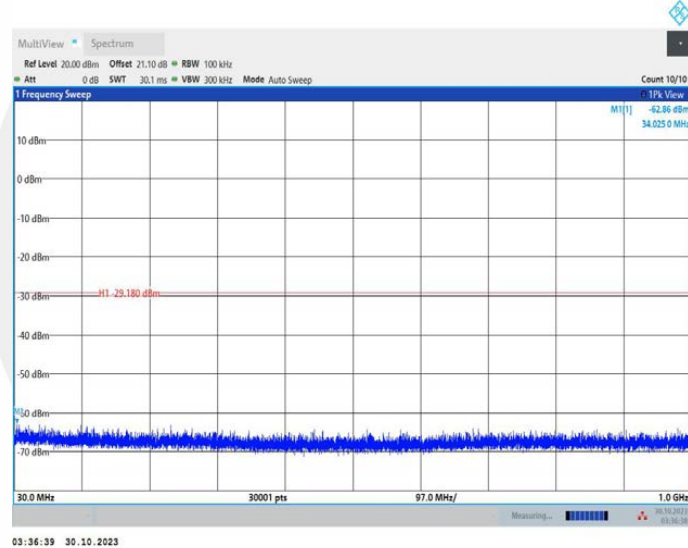
11N40MIMO_Ant1_2452_1000~26500



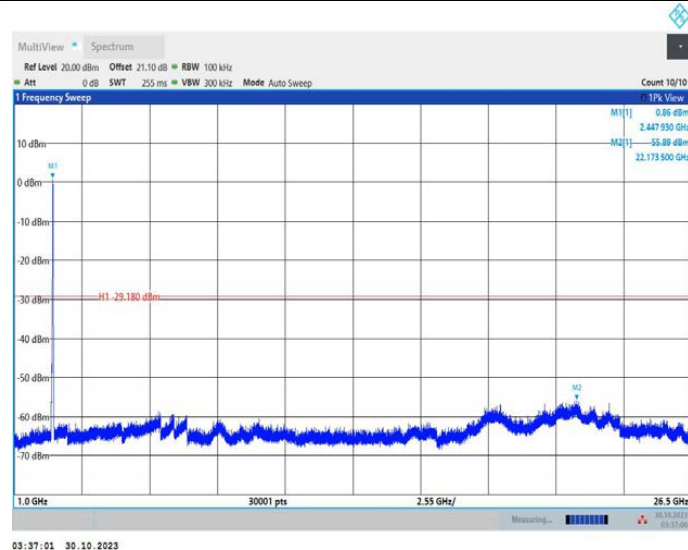
11N40MIMO_Ant2_2452_0~Reference



11N40MIMO_Ant2_2452_30~1000



11N40MIMO_Ant2_2452_1000~26500



7.5 RADIATED EMISSION

7.5.1 Applicable Standard

According to FCC Part 15.247(d) and 15.209 and KDB 558074 D01 15.247 Meas Guidance v05r02.

7.5.2 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 (uV/m)	300
0.490-1.705	24000/F(KHz)	20 log (uV/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

7.5.3 Test Configuration

Test according to clause 6.2 radio frequency test setup 2.

7.5.4 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.
 $VBW \geq RBW$.
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.

7.5.5 Test Results

Temperature :	25°C	ATM Pressure::	1011 mbar
Humidity :	60 %	Test Engineer:	HZB

■ 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
--	--	--	--	--	--	--	--

Note: Data of measurement within this frequency range shown “ -- ” in the table above means 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 Above 1GHz(1GHz to 25GHz)

All of the configurations or modes are tested, the data of the worst case is recorded in the report.
Highest gain of each antenna and highest output power is ANT2 and MIMO as below:

ANT2:

Test mode: 802.11n(20) Frequency: Channel 1: 2412MHz

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
4822.5	V	54.71	74.00	19.29	peak
7231.87	V	53.60	74.00	20.40	peak
17623.1	V	70.53	74.00	3.47	peak
4822.548	V	35.62	54.00	18.38	AVG
7231.900	V	40.57	54.00	13.43	AVG
17623.12	V	49.51	54.00	4.49	AVG
4822.5	H	50.71	74.00	23.29	peak
7376.25	H	55.23	74.00	18.77	peak
17613.7	H	71.12	74.00	2.88	peak
4822.549	H	34.50	54.00	19.50	AVG
7376.201	H	44.20	54.00	9.80	AVG
17613.75	H	49.92	54.00	4.08	AVG

Test mode: 802.11n(20) Frequency: Channel 6: 2437MHz

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
4873.12	V	54.10	74.00	19.90	peak
14615.6	V	64.43	74.00	9.57	peak
17615.6	V	70.76	74.00	3.24	peak
4873.125	V	36.09	54.00	17.91	AVG
14615.62	V	48.10	54.00	5.90	AVG
17615.62	V	49.85	54.00	4.15	AVG
4873.12	H	52.76	74.00	21.24	peak
14611.8	H	63.89	74.00	10.11	peak
17598.7	H	70.52	74.00	3.48	peak
4873.125	H	34.78	54.00	19.22	AVG
14611.87	H	48.19	54.00	5.81	AVG
17598.75	H	50.63	54.00	3.37	AVG

Test mode: 802.11n(20) Frequency: Channel 11: 2462MHz

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
4923.75	V	53.07	74.00	20.93	peak
14544.3	V	64.67	74.00	9.33	peak
17626.8	V	71.06	74.00	2.94	peak
4923.75	V	35.02	54.00	18.98	AVG
14544.37	V	46.72	54.00	7.28	AVG
17626.87	V	49.52	54.00	4.48	AVG
4923.75	H	52.27	74.00	21.73	peak
14647.5	H	64.54	74.00	9.46	peak
17596.8	H	71.30	74.00	2.70	peak
4923.75	H	36.43	54.00	17.57	AVG
14647.5	H	47.72	54.00	6.28	AVG
17596.87	H	50.10	54.00	3.90	AVG

MIMO:

Test mode: 802.11n(20) Frequency: Channel 1: 2412MHz

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
4821.110	V	54.58	74.00	19.42	peak
7230.480	V	53.44	74.00	20.56	peak
17624.380	V	70.5	74.00	3.5	peak
4823.828	V	35.6	54.00	18.4	AVG
7229.650	V	40.31	54.00	13.69	AVG
17620.870	V	49.32	54.00	4.68	AVG
4834.190	H	50.63	74.00	23.37	peak
7387.940	H	55.02	74.00	18.98	peak
17625.390	H	70.96	74.00	3.04	peak
4834.239	H	34.36	54.00	19.64	AVG
7372.891	H	44.02	54.00	9.98	AVG
17610.440	H	49.79	54.00	4.21	AVG

Test mode: 802.11n(20) Frequency: Channel 6: 2437MHz

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
4871.730	V	53.97	74.00	20.03	peak
14614.210	V	64.27	74.00	9.73	peak
17616.880	V	70.73	74.00	3.27	peak
4874.405	V	36.07	54.00	17.93	AVG
14613.370	V	47.84	54.00	6.16	AVG
17613.370	V	49.66	54.00	4.34	AVG
4884.810	H	52.68	74.00	21.32	peak
14623.490	H	63.68	74.00	10.32	peak
17610.390	H	70.36	74.00	3.64	peak
4884.815	H	34.64	54.00	19.36	AVG
14608.560	H	48.01	54.00	5.99	AVG
17595.440	H	50.5	54.00	3.5	AVG

Test mode: 802.11n(20) Frequency: Channel 11: 2462MHz

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
4922.360	V	52.94	74.00	21.06	peak
14542.910	V	64.51	74.00	9.49	peak
17628.080	V	71.03	74.00	2.97	peak
4925.030	V	35	54.00	19	AVG
14542.120	V	46.46	54.00	7.54	AVG
17624.620	V	49.33	54.00	4.67	AVG
4935.440	H	52.19	74.00	21.81	peak
14659.190	H	64.33	74.00	9.67	peak
17608.490	H	71.14	74.00	2.86	peak
4935.440	H	36.29	54.00	17.71	AVG
14644.190	H	47.54	54.00	6.46	AVG
17593.560	H	49.97	54.00	4.03	AVG

- 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 of the configurations or modes are tested, the data of the worst case is recorded in the report.

Test mode: 802.11n(20) Frequency: Channel 1: 2412MHz

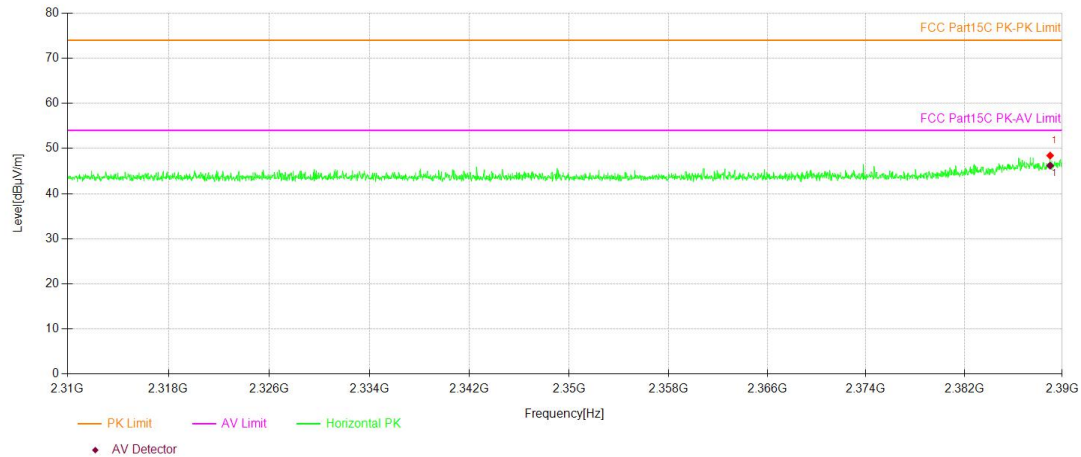
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
2387.94	V	51.53	74.00	22.47	peak
2387.946	V	44.10	54.00	9.90	AVG
2389.01	H	48.42	74.00	25.58	peak
2389.013	H	46.20	54.00	7.80	AVG

Test mode: 802.11n(20) Frequency: Channel 11: 2462MHz

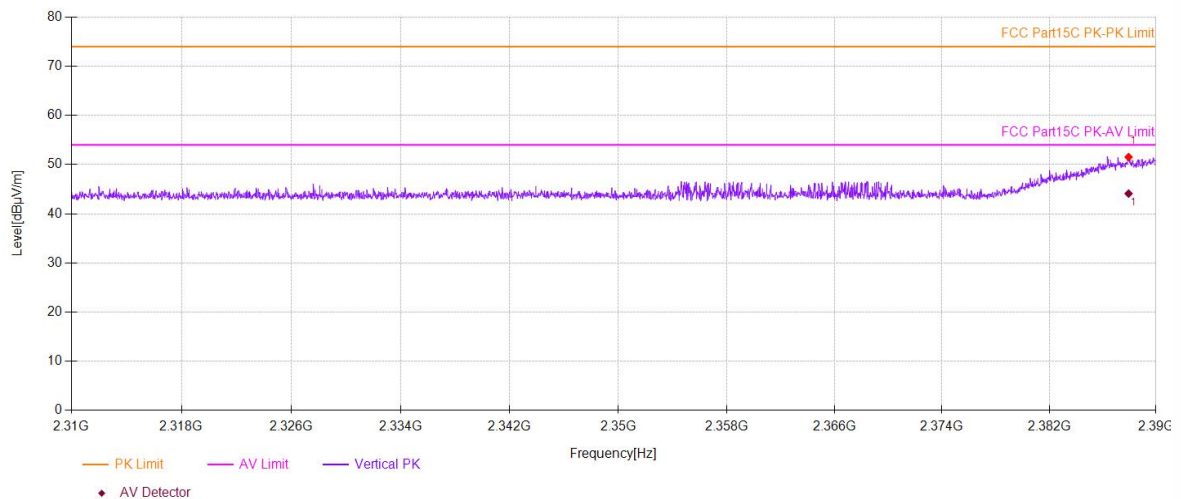
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
2486.77	V	53.19	74.00	20.81	peak
2486.773	V	44.50	54.00	9.50	AVG
2486.06	H	50.73	74.00	23.27	peak
2486.069	H	44.50	54.00	9.50	AVG

- 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				
Test Model	☐ 802.11b	☐ 802.11g	☒ 802.11n(HT20)	☐ 802.11n(HT40)
	☒ Channel	☐ Channel 3: 2422MHz	Polarity: H	
	1:2412MHz			
	VBW=3MHz			

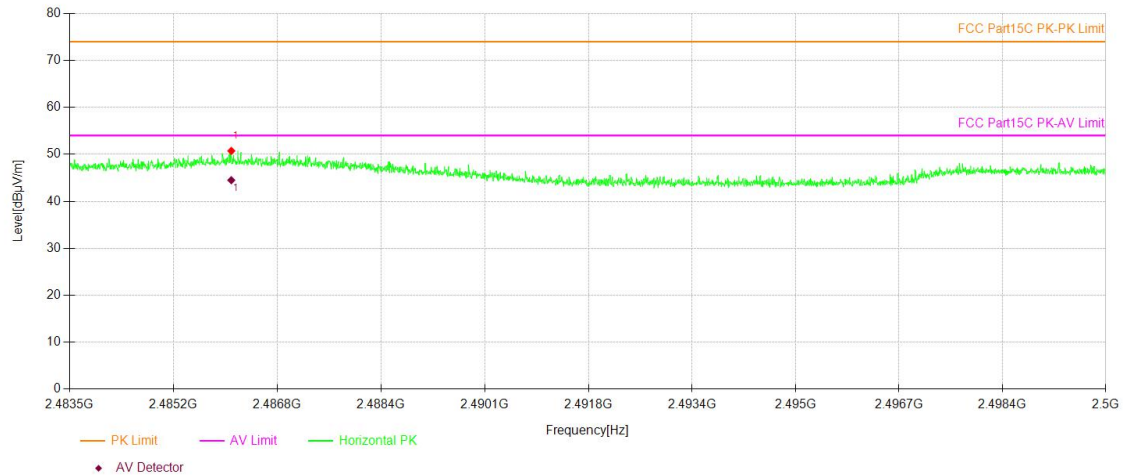


Spurious Emission in Restricted Band 2310-2390MHz				
Test Model	☐ 802.11b	☐ 802.11g	☒ 802.11n(HT20)	☐ 802.11n(HT40)
	☒ Channel 1:2412MHz	☐ Channel 3: 2422MHz	Polarity:V	
	VBW=3MHz			



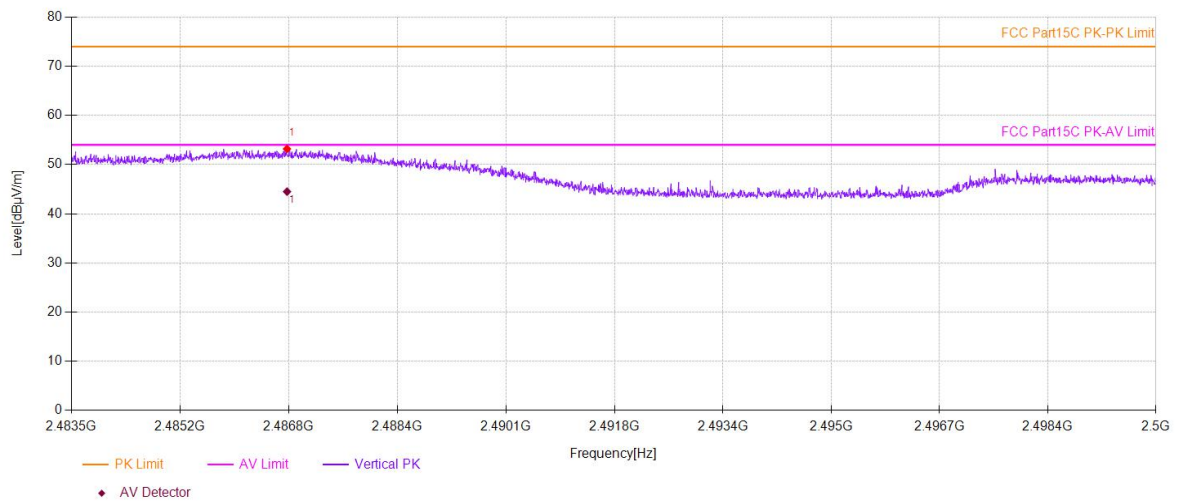
Spurious Emission in Restricted Band 2483.5-2500MHz

Test Model ☐ 802.11b ☐ 802.11g ☒ 802.11n(HT20) ☐ 802.11n(HT40)
☒ Channel 11: 2462MHz ☐ Channel 9: 2452MHz Polarity: H
 VBW=3MHz



Spurious Emission in Restricted Band 2483.5-2500MHz

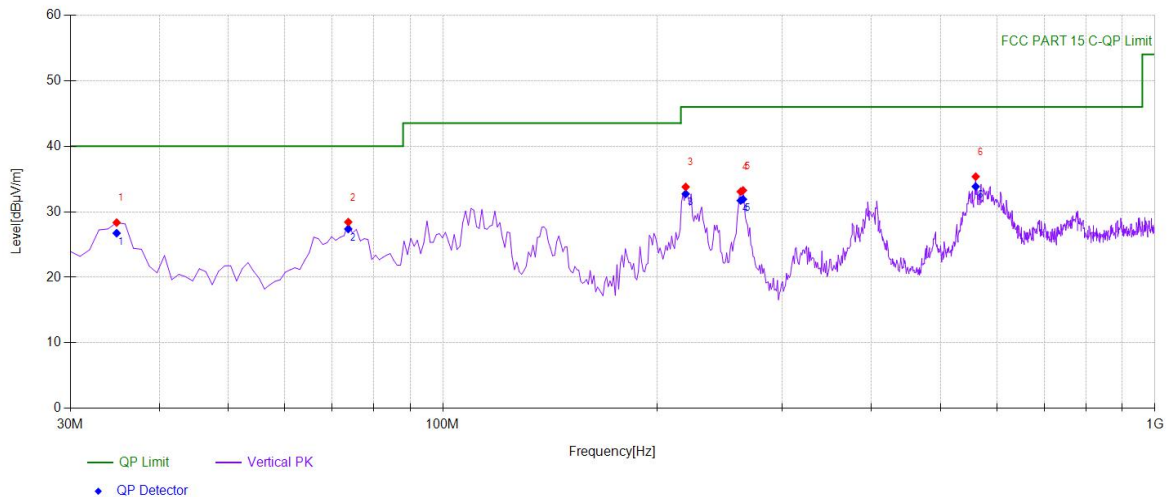
Test Model ☐ 802.11b ☐ 802.11g ☒ 802.11n(HT20) ☐ 802.11n(HT40)
☒ Channel 11: 2462MHz ☐ Channel 9: 2452MHz Polarity: V
 VBW=3MHz



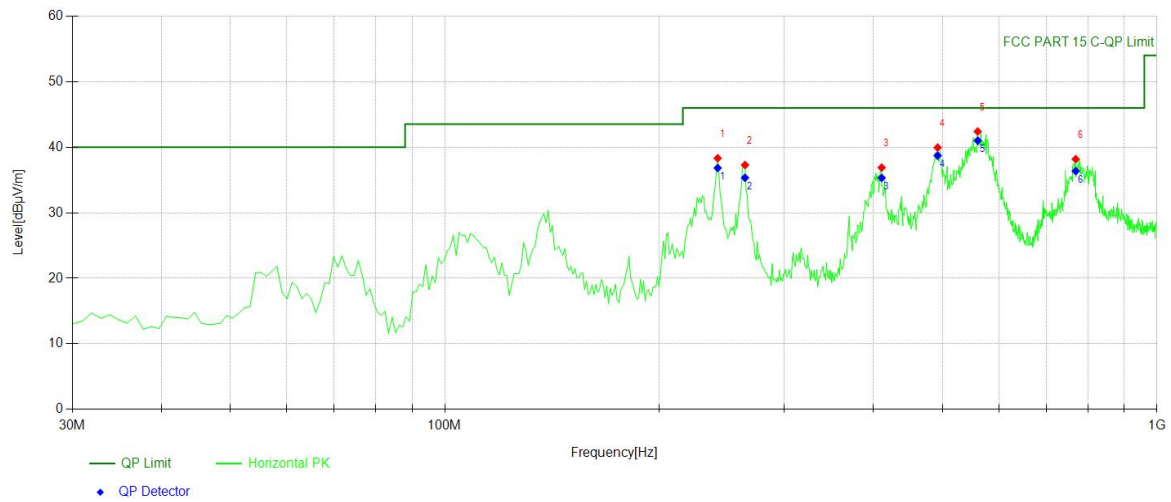
■ Spurious Emission below 1GHz (30MHz to 1GHz)

All of the configurations or modes are tested, the data of the worst case is recorded in the report.

Test mode: 802.11n(20) Frequency: Channel 1: 2412MHz



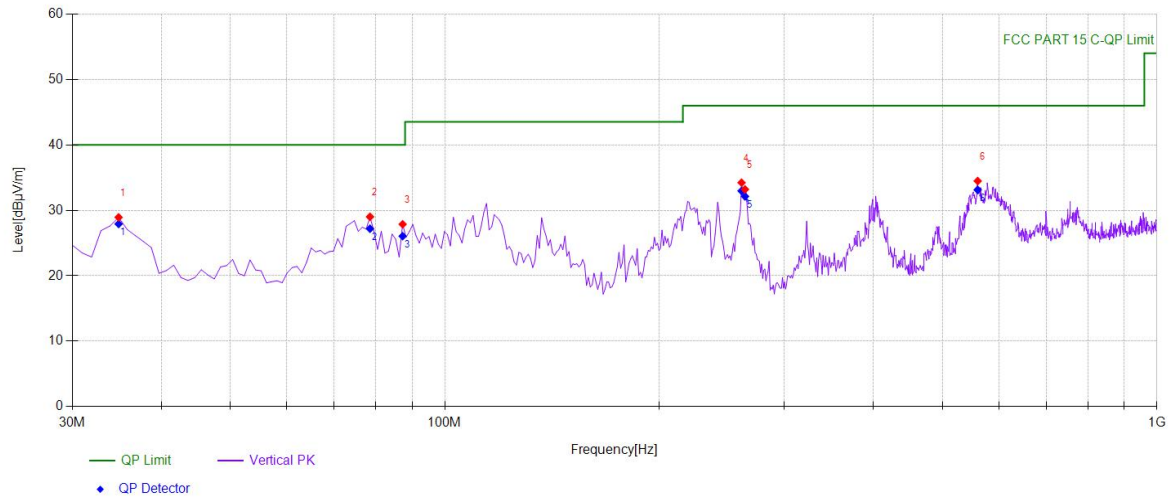
Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	34.8549	46.58	-18.23	28.35	PK	40.00	11.65	Vertical
2	73.6937	48.96	-20.53	28.43	PK	40.00	11.57	Vertical
3	219.339	50.89	-17.10	33.79	PK	46.00	12.21	Vertical
4	262.062	48.16	-15.09	33.07	PK	46.00	12.93	Vertical
5	264.004	48.26	-15.00	33.26	PK	46.00	12.74	Vertical
6	560.150	44.35	-8.99	35.36	PK	46.00	10.64	Vertical



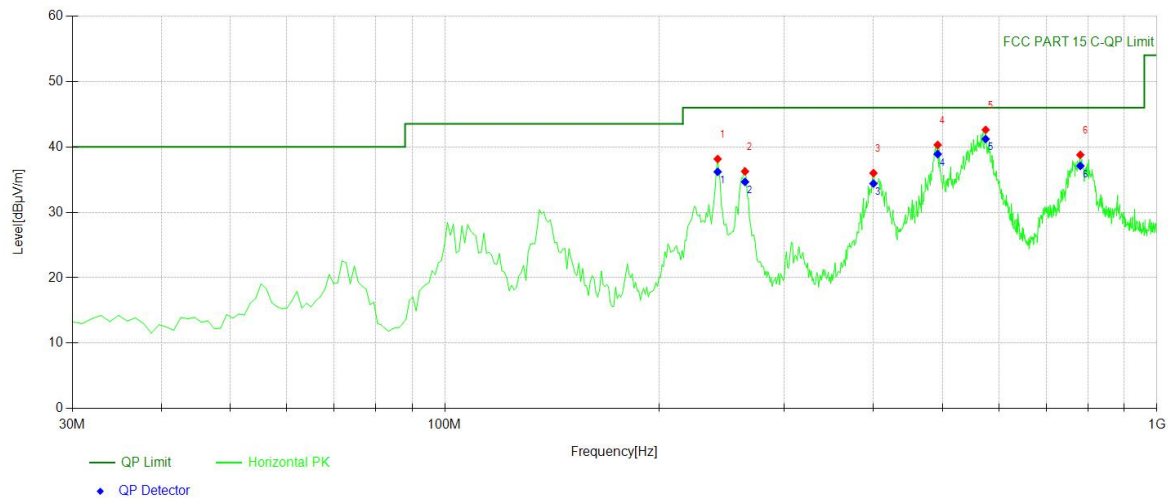
Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	241.671	53.51	-15.19	38.32	PK	46.00	7.68	Horizontal
2	264.004	52.28	-15.00	37.28	PK	46.00	8.72	Horizontal
3	410.620	48.67	-11.78	36.89	PK	46.00	9.11	Horizontal
4	492.182	49.73	-9.79	39.94	PK	46.00	6.06	Horizontal
5	560.150	51.38	-8.99	42.39	PK	46.00	3.61	Horizontal
6	768.908	43.22	-5.04	38.18	PK	46.00	7.82	Horizontal

Test mode: 802.11n(20) Frequency: Channel 6: 2437MHz

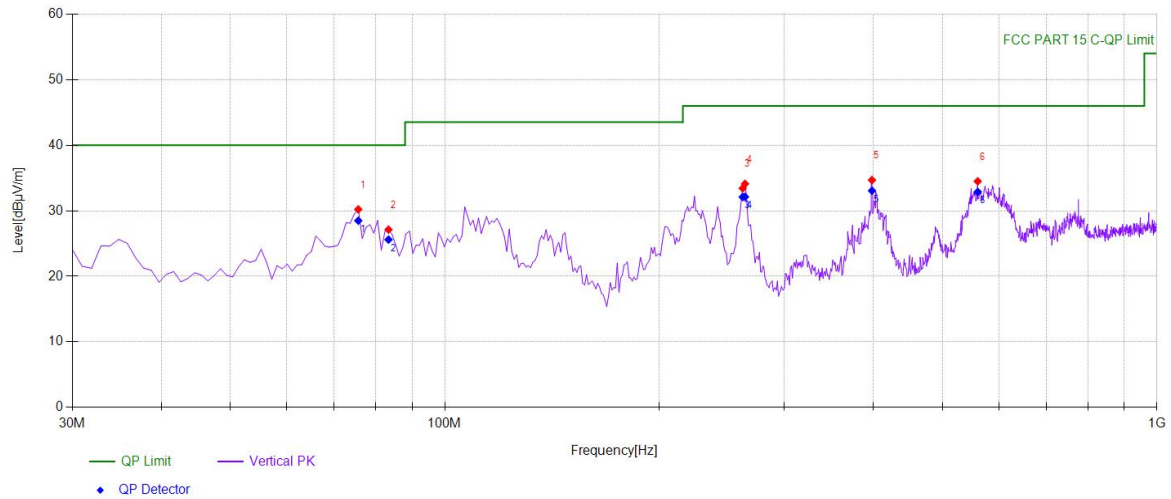


Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	34.8549	47.16	-18.23	28.93	PK	40.00	11.07	Vertical
2	78.5485	50.28	-21.27	29.01	PK	40.00	10.99	Vertical
3	87.2873	47.67	-19.80	27.87	PK	40.00	12.13	Vertical
4	261.091	49.35	-15.12	34.23	PK	46.00	11.77	Vertical
5	264.004	48.20	-15.00	33.20	PK	46.00	12.80	Vertical
6	560.150	43.47	-8.99	34.48	PK	46.00	11.52	Vertical

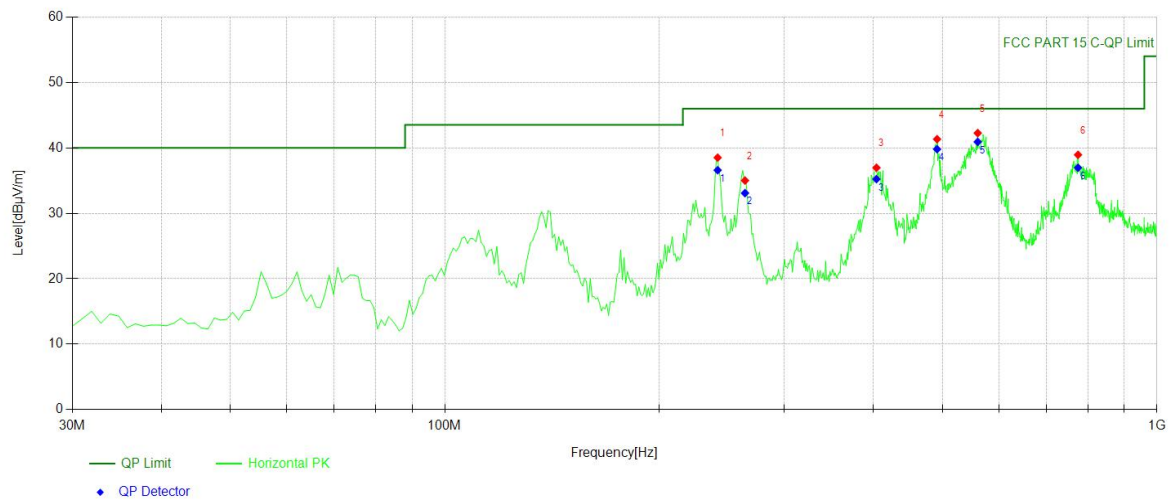


Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	241.671	53.34	-15.19	38.15	PK	46.00	7.85	Horizontal
2	264.004	51.25	-15.00	36.25	PK	46.00	9.75	Horizontal
3	399.939	47.78	-11.79	35.99	PK	46.00	10.01	Horizontal
4	492.182	50.09	-9.79	40.30	PK	46.00	5.70	Horizontal
5	574.714	50.24	-7.63	42.61	PK	46.00	3.39	Horizontal
6	780.560	43.39	-4.61	38.78	PK	46.00	7.22	Horizontal

Test mode: 802.11n(20) Frequency: Channel 11: 2462MHz



Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	75.6356	51.04	-20.83	30.21	PK	40.00	9.79	Vertical
2	83.4034	47.83	-20.70	27.13	PK	40.00	12.87	Vertical
3	262.062	48.52	-15.09	33.43	PK	46.00	12.57	Vertical
4	264.004	49.10	-15.00	34.10	PK	46.00	11.90	Vertical
5	397.998	46.48	-11.80	34.68	PK	46.00	11.32	Vertical
6	560.150	43.48	-8.99	34.49	PK	46.00	11.51	Vertical



Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	241.671	53.70	-15.19	38.51	PK	46.00	7.49	Horizontal
2	264.004	50.01	-15.00	35.01	PK	46.00	10.99	Horizontal
3	403.823	48.75	-11.79	36.96	PK	46.00	9.04	Horizontal
4	491.211	51.13	-9.80	41.33	PK	46.00	4.67	Horizontal
5	560.150	51.25	-8.99	42.26	PK	46.00	3.74	Horizontal
6	774.734	43.77	-4.83	38.94	PK	46.00	7.06	Horizontal

7.6 CONDUCTED EMISSION TEST

7.6.1 Applicable Standard

According to IC RSS-Gen 8.8

7.6.2 Conformance Limit

FCC Part 15, Subpart B, Class B

Conducted Emission Limit		
Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

Note:
 1. The lower limit shall apply at the transition frequencies
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

7.6.3 Test Configuration

Test according to clause 6.3 conducted emission test setup 3.

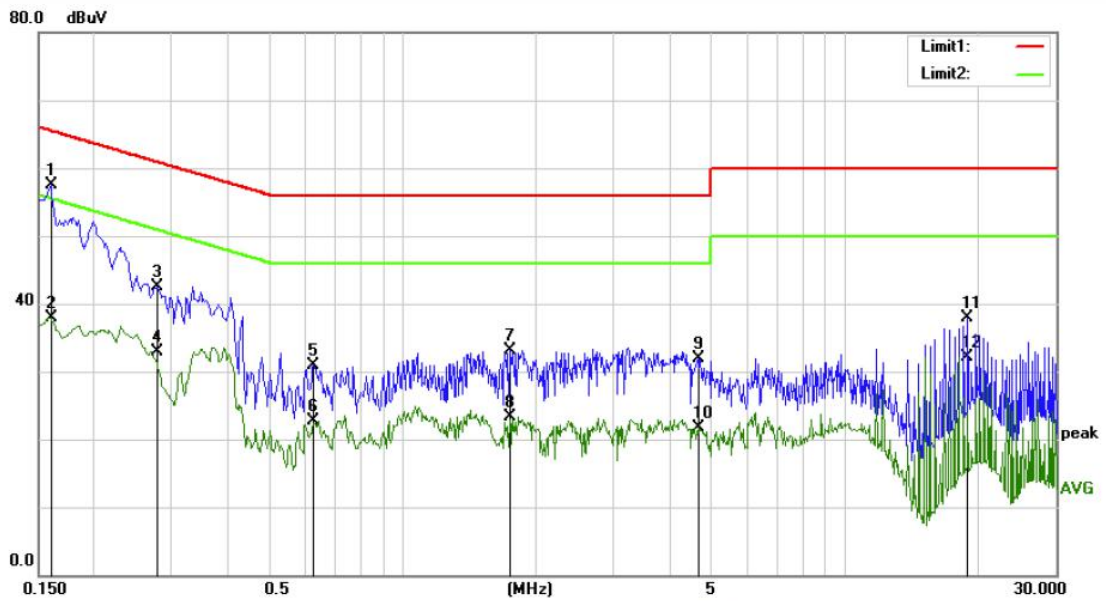
7.6.4 Test Procedure

The EUT was placed on a table which is 0.8m above ground plane.
 Maximum procedure was performed on the highest emissions to ensure EUT compliance.
 Repeat above procedures until all frequency measured were complete.

7.6.5 Test Results

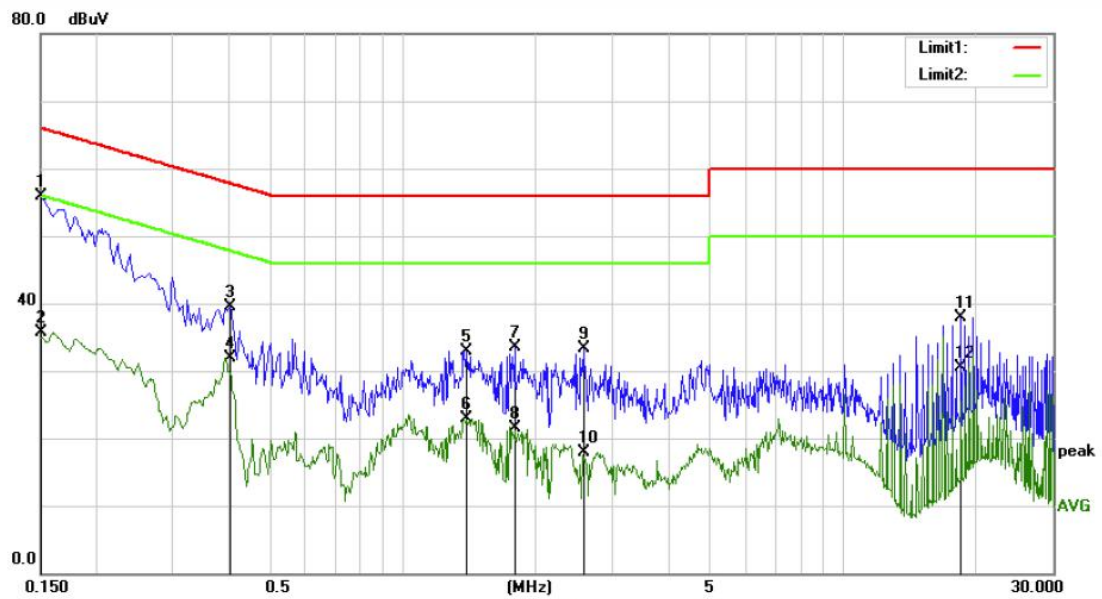
Temperature : 21.9°C ATM Pressure:: 1011 mbar
 Humidity : 58 % Test Engineer: WAP

Pass



Site Conduction #1 Phase: **L1** Temperature: 21.9

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1598	47.87	9.63	57.50	65.47	-7.97	QP	
2		0.1598	28.34	9.63	37.97	55.47	-17.50	AVG	
3		0.2788	32.49	10.04	42.53	60.85	-18.32	QP	
4		0.2788	22.91	10.04	32.95	50.85	-17.90	AVG	
5		0.6271	21.32	9.66	30.98	56.00	-25.02	QP	
6		0.6271	12.95	9.66	22.61	46.00	-23.39	AVG	
7		1.7436	23.42	9.74	33.16	56.00	-22.84	QP	
8		1.7436	13.63	9.74	23.37	46.00	-22.63	AVG	
9		4.6468	22.10	9.85	31.95	56.00	-24.05	QP	
10		4.6468	11.87	9.85	21.72	46.00	-24.28	AVG	
11		18.9204	27.57	10.27	37.84	60.00	-22.16	QP	
12		18.9204	21.83	10.27	32.10	50.00	-17.90	AVG	



Site Conduction #1					Phase: N		Temperature: 21.9	
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector Comment
1	*	0.1500	46.37	9.51	55.88	66.00	-10.12	QP
2		0.1500	26.10	9.51	35.61	56.00	-20.39	AVG
3		0.4040	29.71	9.81	39.52	57.77	-18.25	QP
4		0.4040	22.01	9.81	31.82	47.77	-15.95	AVG
5		1.3884	23.18	9.79	32.97	56.00	-23.03	QP
6		1.3884	13.14	9.79	22.93	46.00	-23.07	AVG
7		1.7903	23.84	9.73	33.57	56.00	-22.43	QP
8		1.7903	11.87	9.73	21.60	46.00	-24.40	AVG
9		2.5670	23.63	9.73	33.36	56.00	-22.64	QP
10		2.5670	8.21	9.73	17.94	46.00	-28.06	AVG
11		18.5235	27.66	10.24	37.90	60.00	-22.10	QP
12		18.5235	20.31	10.24	30.55	50.00	-19.45	AVG

7.7 ANTENNA APPLICATION

7.7.1 Antenna Requirement

Standard	Requirement
FCC CRF Part15.203	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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

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..

7.7.2 Result

Temperature : 25°C ATM Pressure:: 1011 mbar
Humidity : 45 % Test Engineer: XXH

PASS

The EUT integrated antenna, antenna1 gain is 3.79dBi, antenna2 gain is 3.79dBi.

- ☐ Antenna uses a permanently attached antenna which is not replaceable.
- ☒ Not using a standard antenna jack or electrical connector for antenna replacement.
- ☐ The antenna has to be professionally installed (please provide method of installation).

Which in accordance to section 15.203, please refer to the internal photos.

Detail of factor for radiated emission:

Frequency(MHz)	Ant_F(dB)	Cab_L(dB)	Preamp(dB)	Correct Factor(dB)
0.009	20.6	0.03	\	20.63
0.15	20.7	0.1	\	20.8
1	20.9	0.15	\	21.05
10	20.1	0.28	\	20.38
30	18.8	0.45	\	19.25
30	11.7	0.62	27.9	-15.58
100	12.5	1.02	27.8	-14.28
300	12.9	1.91	27.5	-12.69
600	19.2	2.92	27	-4.88
800	21.1	3.54	26.6	-1.96
1000	22.3	4.17	26.2	0.27
1000	25.6	1.76	41.4	-14.04
3000	28.9	3.27	43.2	-11.03
5000	31.1	4.2	44.6	-9.3
8000	36.2	5.95	44.7	-2.55
10000	38.4	6.3	43.9	0.8
12000	38.5	7.14	42.3	3.34
15000	40.2	8.15	41.4	6.95
18000	45.4	9.02	41.3	13.12
18000	37.9	1.81	47.9	-8.19
21000	37.9	1.95	48.7	-8.85
25000	39.3	2.01	42.8	-1.49
28000	39.6	2.16	46.0	-4.24
31000	41.2	2.24	44.5	-1.06
34000	41.5	2.29	46.6	-2.81
37000	43.8	2.30	46.4	-0.3
40000	43.2	2.50	42.2	3.5

--- End of Report ---