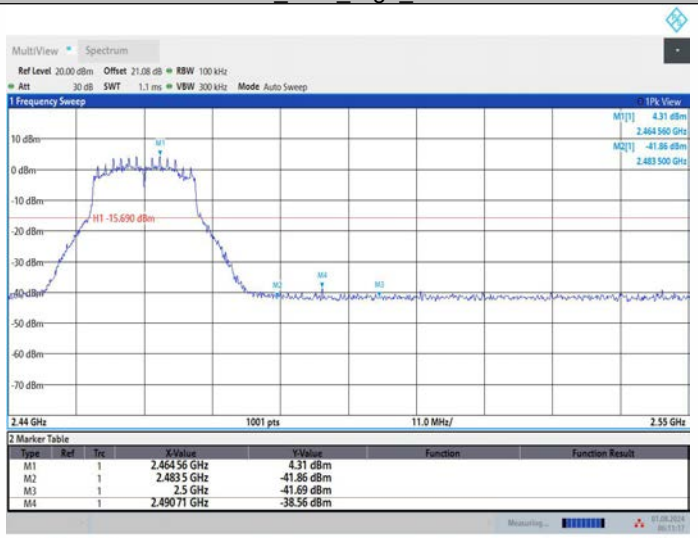
11G_Ant1_High_2462



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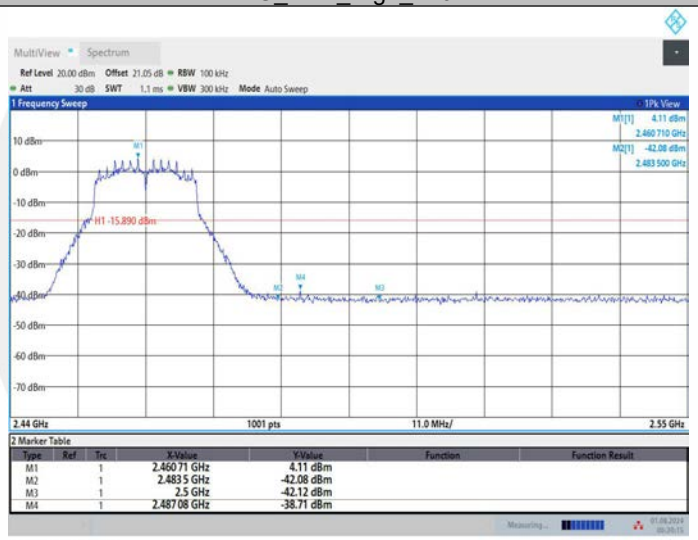
11G_Ant2_High_2462



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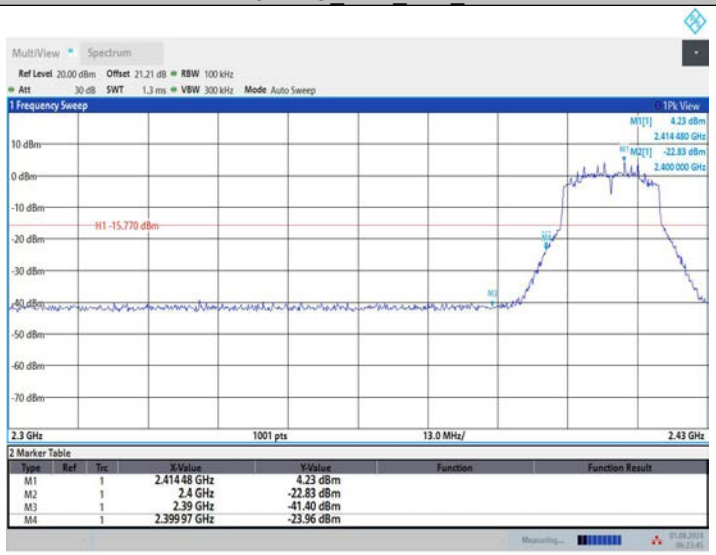
11N20MIMO_Ant1_Low_2412



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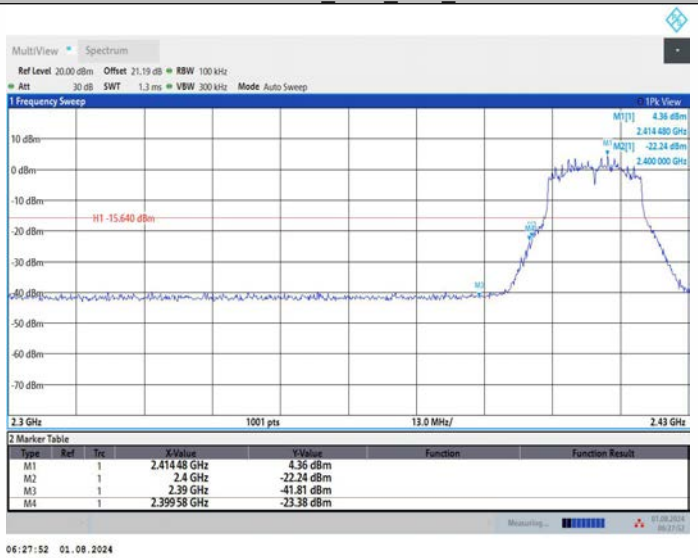
11N20MIMO_Ant2_Low_2412



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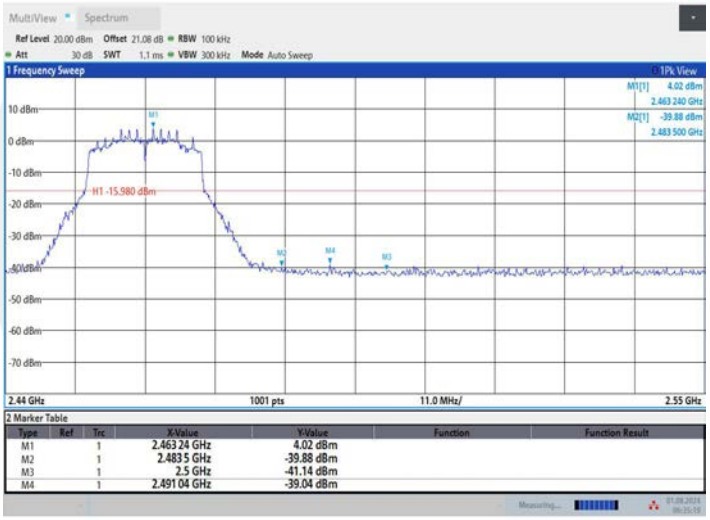
11N20MIMO_Ant1_High_2462



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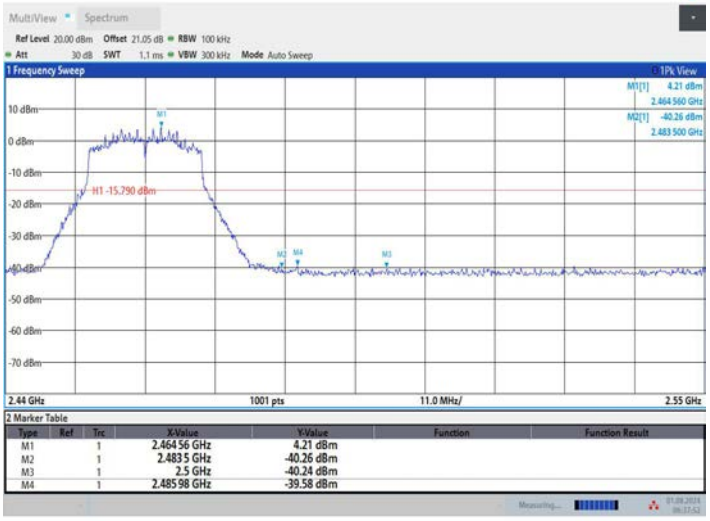
11N20MIMO_Ant2_High_2462



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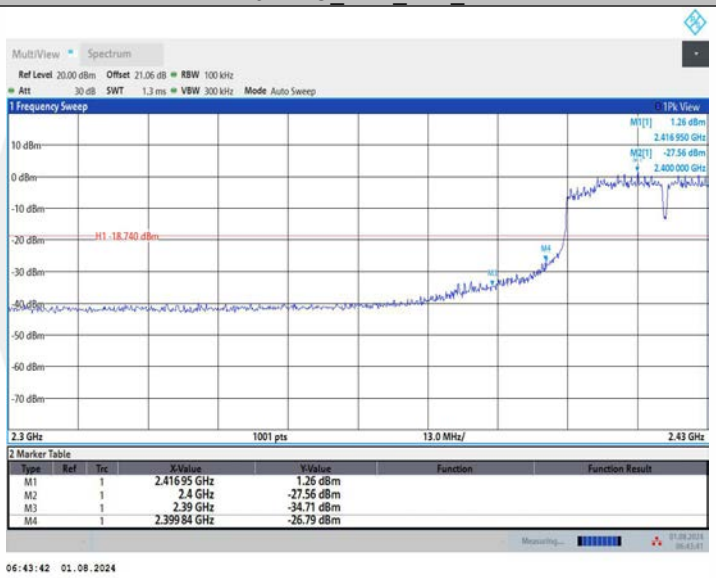
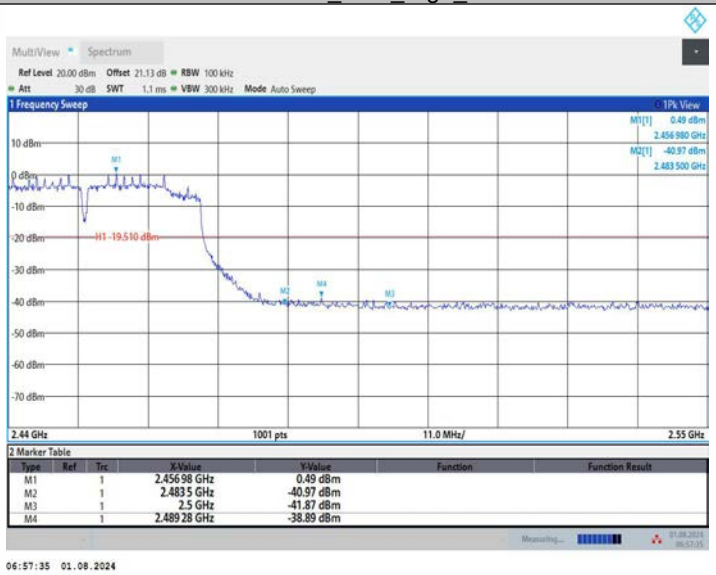
11N40MIMO_Ant1_Low_2422

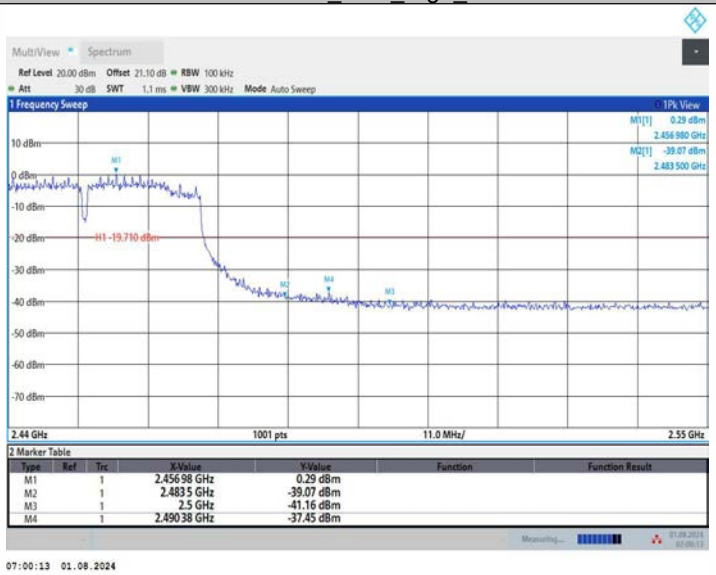
11N40MIMO_Ant2_Low_2422



11N40MIMO_Ant1_High_2452



11N40MIMO_Ant2_High_2452



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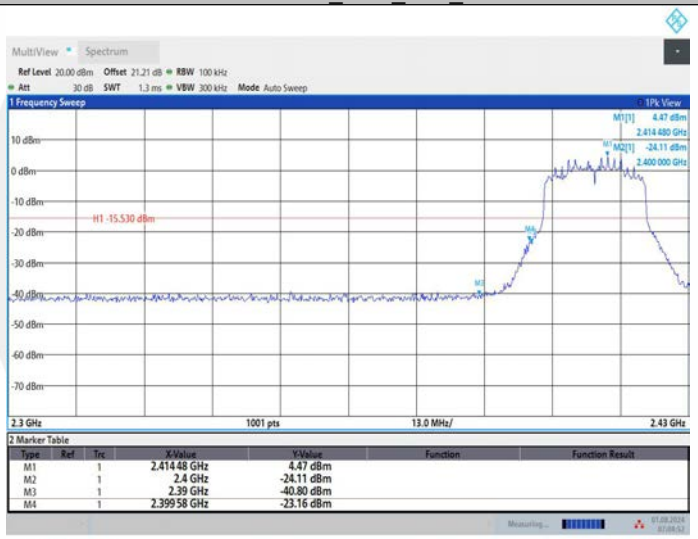
11AX20MIMO_Ant1_Low_2412



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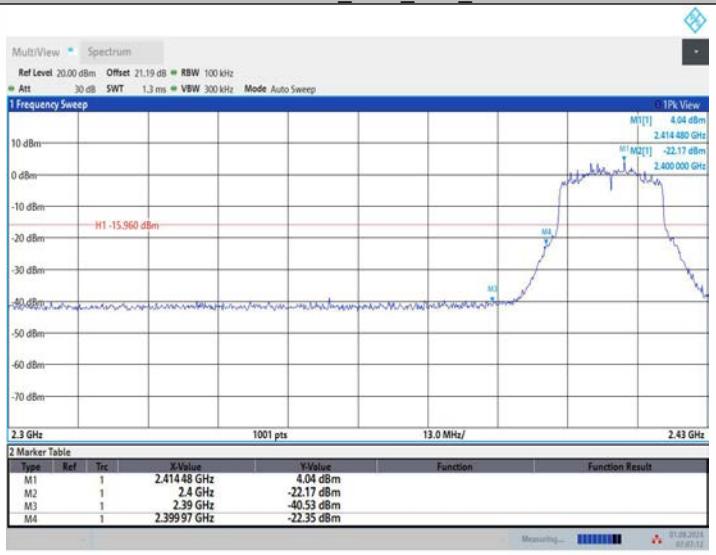
11AX20MIMO_Ant2_Low_2412



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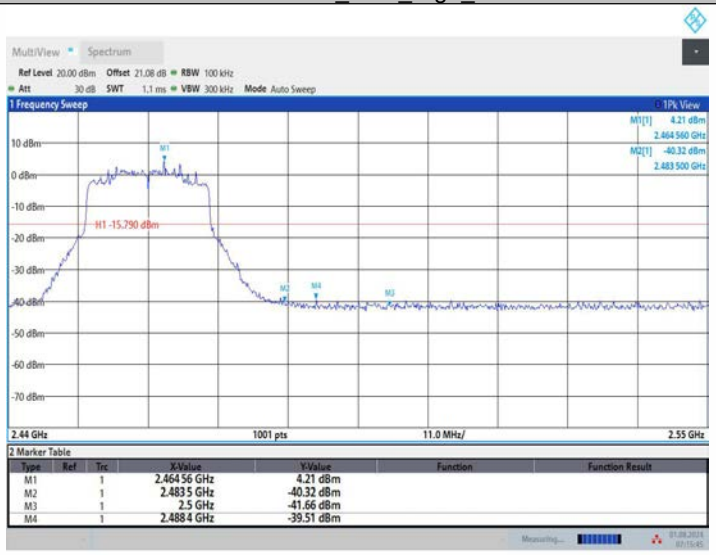
11AX20MIMO_Ant1_High_2462



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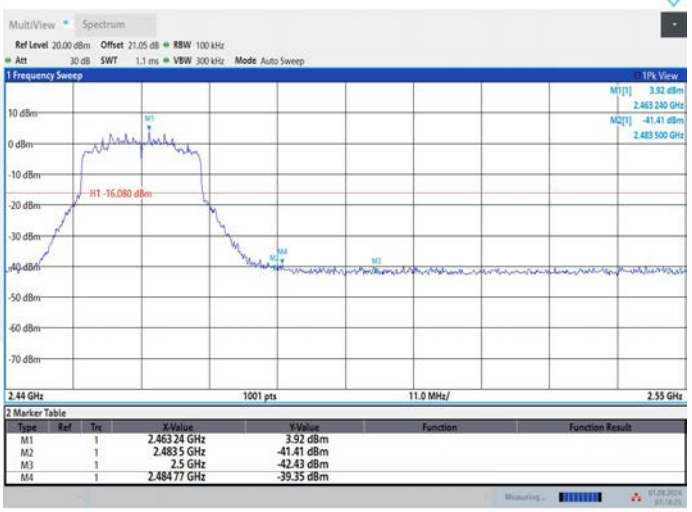
11AX20MIMO_Ant2_High_2462



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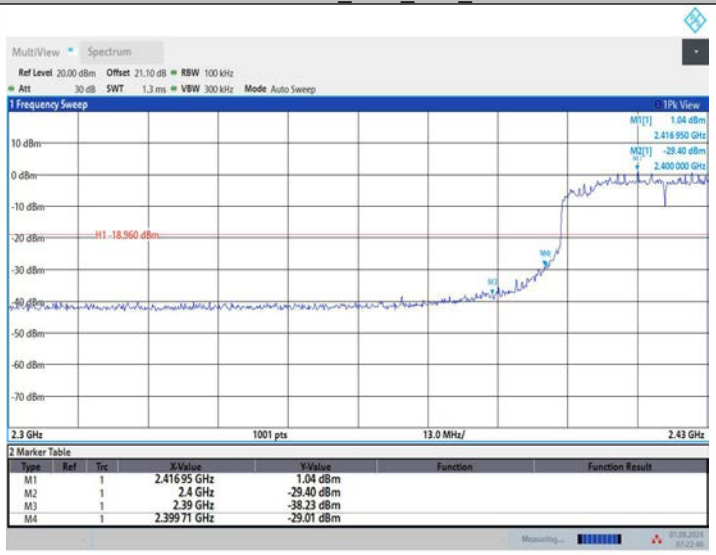
11AX40MIMO_Ant1_Low_2422



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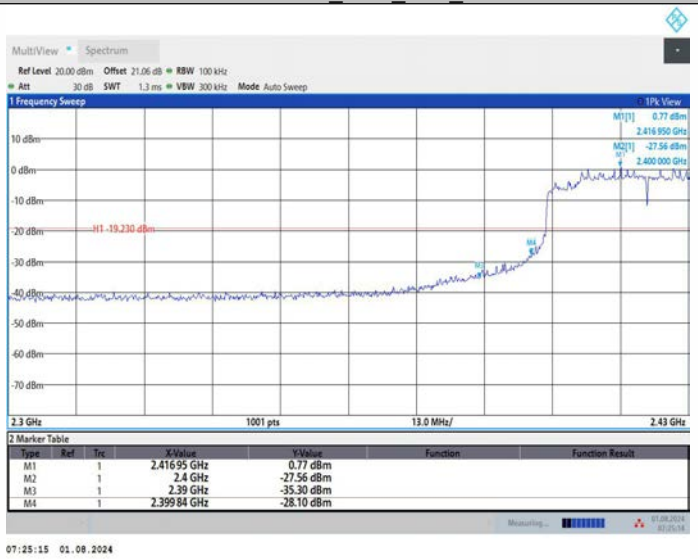
11AX40MIMO_Ant2_Low_2422



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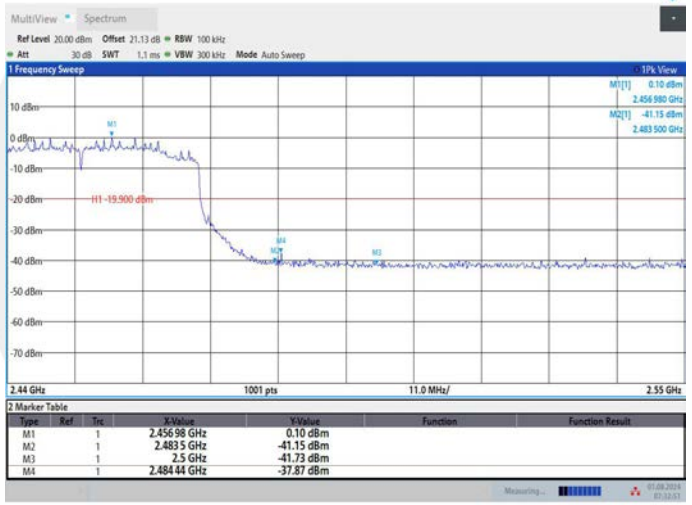
11AX40MIMO_Ant1_High_2452



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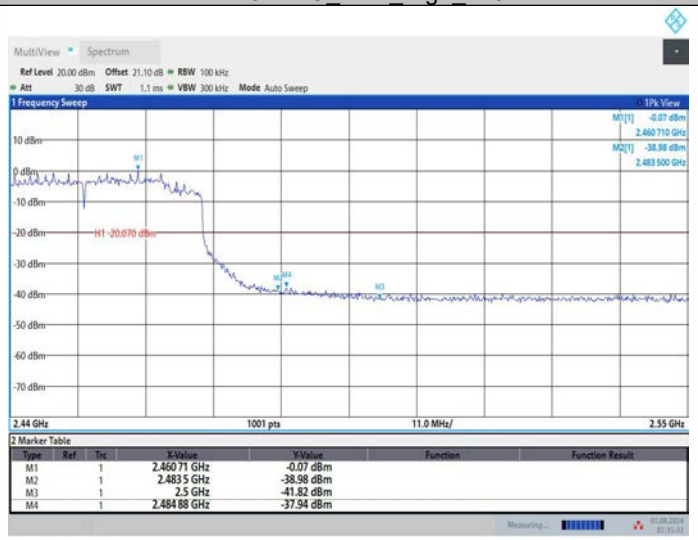
11AX40MIMO_Ant2_High_2452



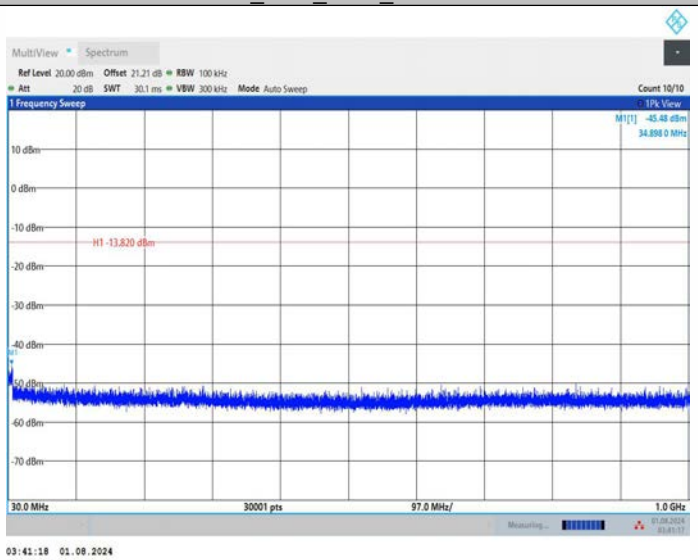
07:35:33 01.08.2024

Emission level measurement

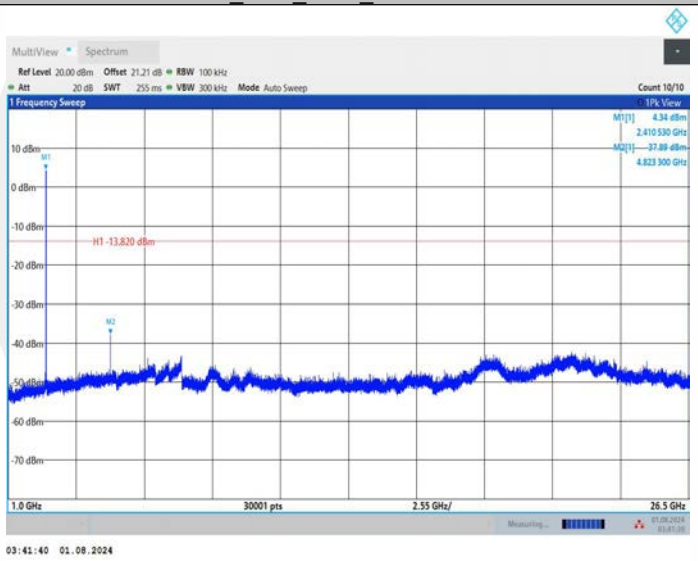
TestMode	Antenna	Frequency [MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	30~1000	6.18	-45.48	≤-13.82	PASS
			1000~26500	6.18	-37.89	≤-13.82	PASS
	Ant2	2412	30~1000	5.94	-45.81	≤-14.06	PASS
			1000~26500	5.94	-37.65	≤-14.06	PASS
	Ant1	2437	30~1000	5.84	-46.76	≤-14.16	PASS
			1000~26500	5.84	-36.52	≤-14.16	PASS
	Ant2	2437	30~1000	5.74	-47.41	≤-14.26	PASS
			1000~26500	5.74	-36.3	≤-14.26	PASS
	Ant1	2462	30~1000	6.00	-46.68	≤-14	PASS
			1000~26500	6.00	-35.29	≤-14	PASS
	Ant2	2462	30~1000	5.98	-46.34	≤-14.02	PASS
			1000~26500	5.98	-35.69	≤-14.02	PASS
11G	Ant1	2412	30~1000	4.62	-46.35	≤-15.38	PASS
			1000~26500	4.62	-42.16	≤-15.38	PASS
	Ant2	2412	30~1000	4.53	-46.22	≤-15.47	PASS
			1000~26500	4.53	-41.08	≤-15.47	PASS
	Ant1	2437	30~1000	4.29	-45.9	≤-15.71	PASS
			1000~26500	4.29	-41.59	≤-15.71	PASS
	Ant2	2437	30~1000	3.90	-46.83	≤-16.1	PASS
			1000~26500	3.90	-42.04	≤-16.1	PASS
	Ant1	2462	30~1000	4.29	-45.97	≤-15.71	PASS
			1000~26500	4.29	-42.18	≤-15.71	PASS
	Ant2	2462	30~1000	4.28	-45.29	≤-15.72	PASS
			1000~26500	4.28	-42.4	≤-15.72	PASS
11N20MIMO	Ant1	2412	30~1000	4.14	-45.69	≤-15.86	PASS
			1000~26500	4.14	-42.4	≤-15.86	PASS
	Ant2	2412	30~1000	4.60	-46.54	≤-15.4	PASS
			1000~26500	4.60	-42.55	≤-15.4	PASS
	Ant1	2437	30~1000	4.17	-46.87	≤-15.83	PASS
			1000~26500	4.17	-41.95	≤-15.83	PASS
	Ant2	2437	30~1000	4.11	-45.77	≤-15.89	PASS
			1000~26500	4.11	-42.04	≤-15.89	PASS
	Ant1	2462	30~1000	4.12	-46.69	≤-15.88	PASS
			1000~26500	4.12	-42.1	≤-15.88	PASS
	Ant2	2462	30~1000	4.18	-46.18	≤-15.82	PASS
			1000~26500	4.18	-41.73	≤-15.82	PASS
11N40MIMO	Ant1	2422	30~1000	1.52	-47.05	≤-18.48	PASS
			1000~26500	1.52	-42.14	≤-18.48	PASS
	Ant2	2422	30~1000	1.00	-47.36	≤-19	PASS
			1000~26500	1.00	-41.09	≤-19	PASS
	Ant1	2437	30~1000	1.32	-46.65	≤-18.68	PASS
			1000~26500	1.32	-42.47	≤-18.68	PASS
	Ant2	2437	30~1000	1.13	-45.45	≤-18.87	PASS
			1000~26500	1.13	-42.27	≤-18.87	PASS
	Ant1	2452	30~1000	0.43	-46.63	≤-19.57	PASS
			1000~26500	0.43	-41.5	≤-19.57	PASS
	Ant2	2452	30~1000	0.24	-46.39	≤-19.76	PASS
			1000~26500	0.24	-42.2	≤-19.76	PASS
11AX20MIMO	Ant1	2412	30~1000	4.29	-44.92	≤-15.71	PASS
			1000~26500	4.29	-41.64	≤-15.71	PASS
	Ant2	2412	30~1000	4.07	-45.06	≤-15.93	PASS
			1000~26500	4.07	-42.43	≤-15.93	PASS
	Ant1	2437	30~1000	4.20	-47.16	≤-15.8	PASS

			1000~26500	4.20	-42.06	≤-15.8	PASS
	Ant2	2437	30~1000	4.02	-46.29	≤-15.98	PASS
			1000~26500	4.02	-41.98	≤-15.98	PASS
	Ant1	2462	30~1000	3.97	-45.95	≤-16.03	PASS
			1000~26500	3.97	-42.21	≤-16.03	PASS
	Ant2	2462	30~1000	4.29	-46.61	≤-15.71	PASS
			1000~26500	4.29	-41.65	≤-15.71	PASS
11AX40MIMO	Ant1	2422	30~1000	0.99	-45.84	≤-19.01	PASS
			1000~26500	0.99	-42.57	≤-19.01	PASS
	Ant2	2422	30~1000	0.87	-46.23	≤-19.13	PASS
			1000~26500	0.87	-41.99	≤-19.13	PASS
	Ant1	2437	30~1000	0.77	-47.13	≤-19.23	PASS
			1000~26500	0.77	-41.92	≤-19.23	PASS
	Ant2	2437	30~1000	0.55	-46.47	≤-19.45	PASS
			1000~26500	0.55	-41.92	≤-19.45	PASS
	Ant1	2452	30~1000	-0.16	-46.09	≤-20.16	PASS
			1000~26500	-0.16	-41.93	≤-20.16	PASS
	Ant2	2452	30~1000	-0.01	-45.94	≤-20.01	PASS
			1000~26500	-0.01	-42.6	≤-20.01	PASS

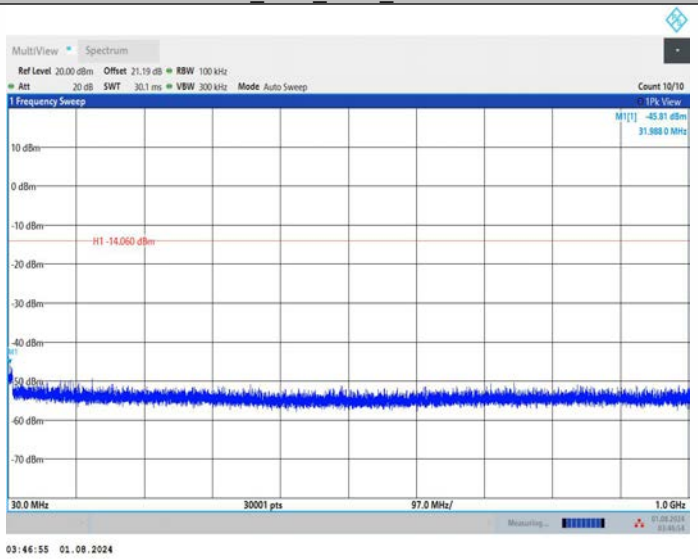
11B_Ant1_2412_30~1000



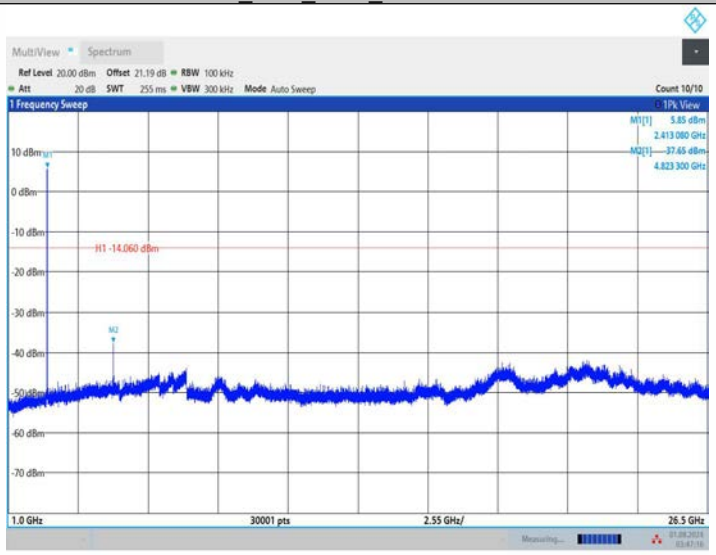
11B_Ant1_2412_1000~26500



11B_Ant2_2412_30~1000



11B_Ant2_2412_1000~26500



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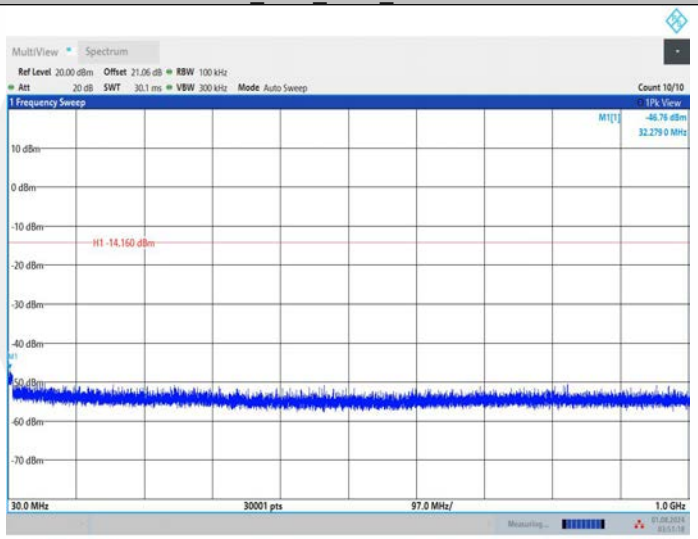
11B_Ant1_2437_30~1000



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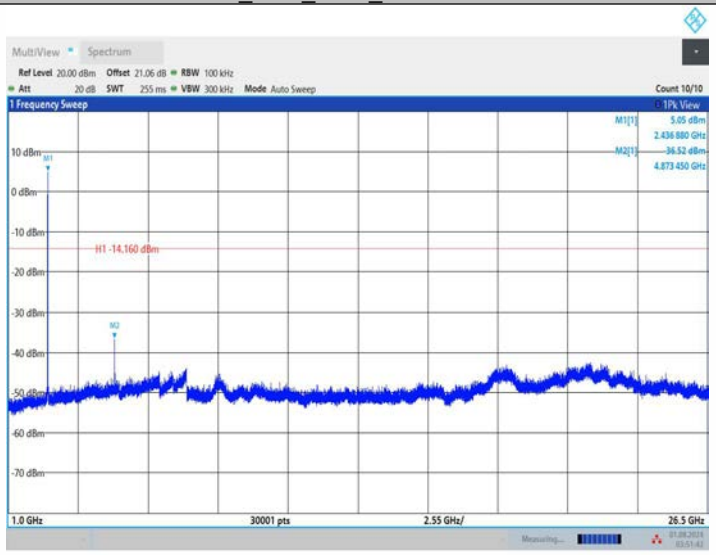
11B_Ant1_2437_1000~26500



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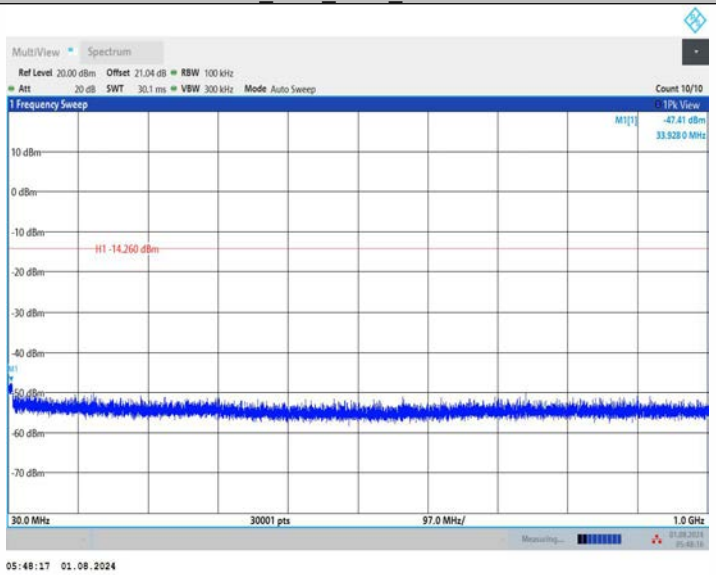
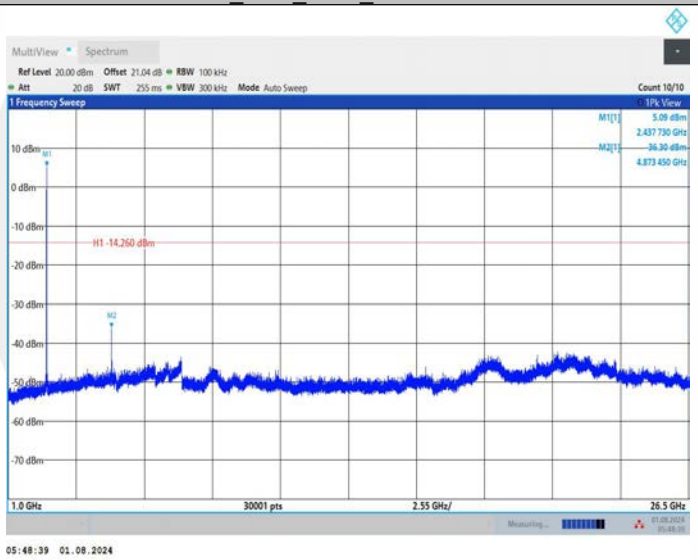
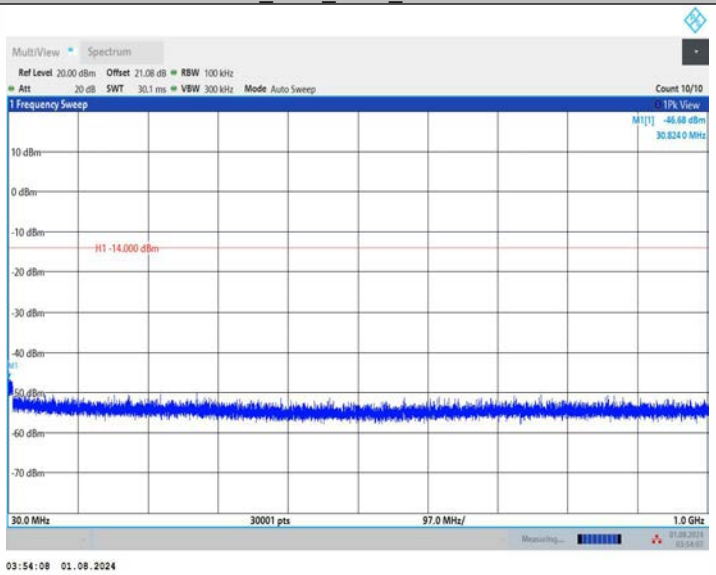
11B_Ant2_2437_30~1000



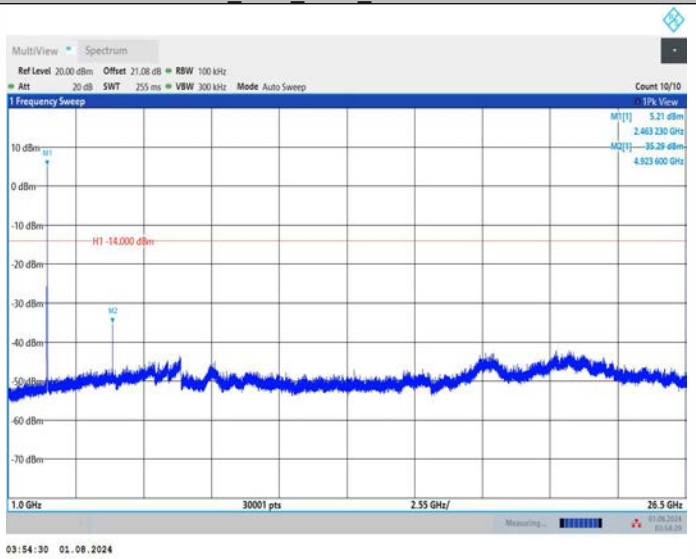
11B_Ant2_2437_1000~26500



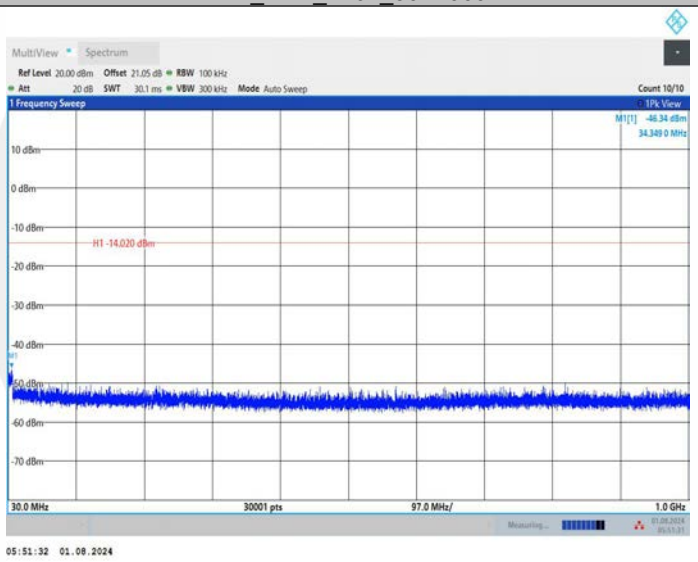
11B_Ant1_2462_30~1000



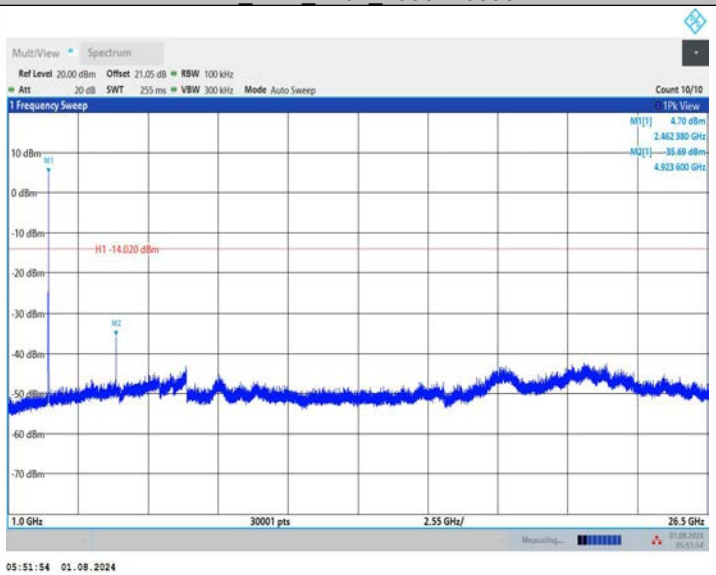
11B_Ant1_2462_1000~26500



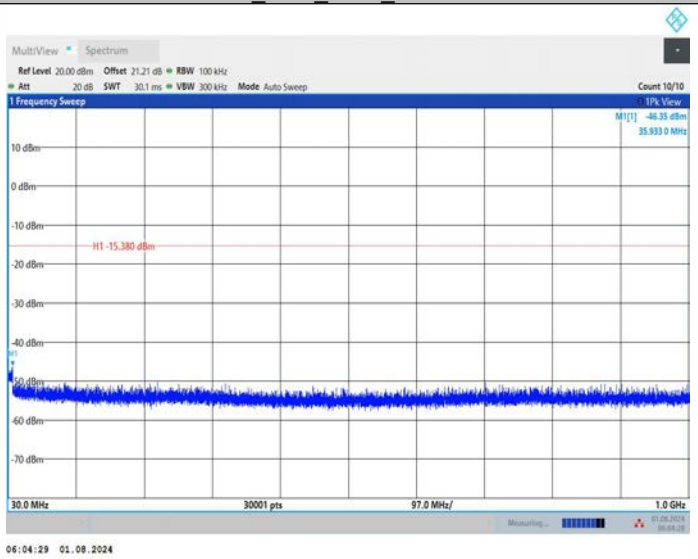
11B_Ant2_2462_30~1000



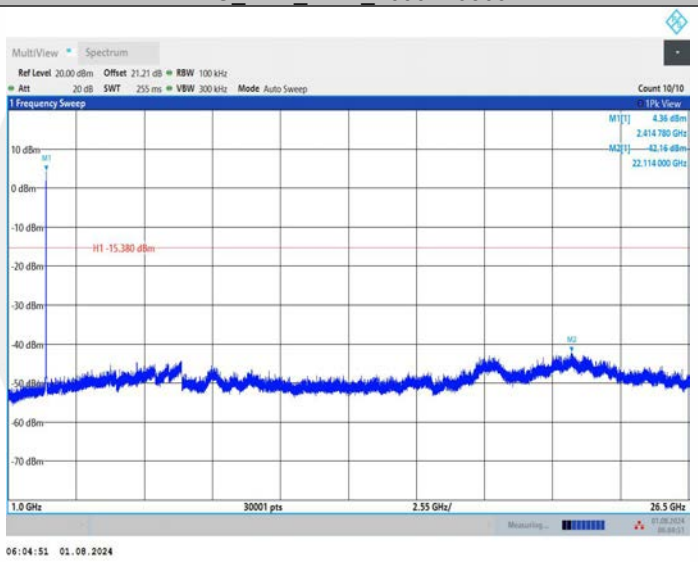
11B_Ant2_2462_1000~26500



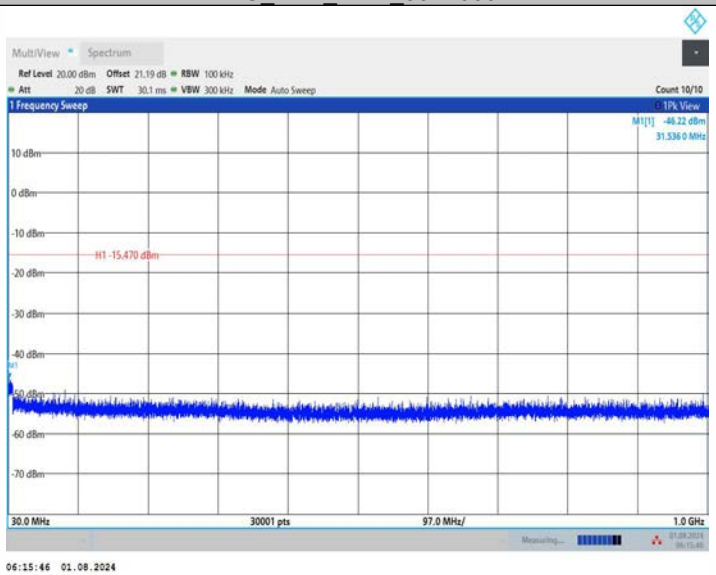
11G_Ant1_2412_30~1000



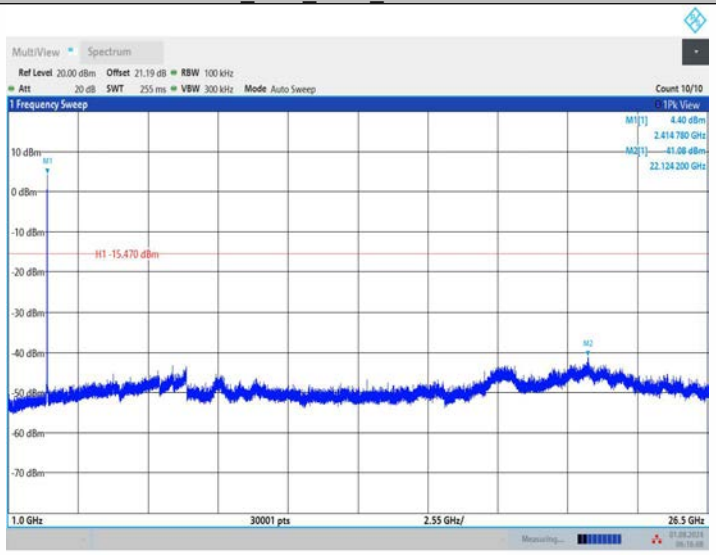
11G_Ant1_2412_1000~26500



11G_Ant2_2412_30~1000



11G_Ant2_2412_1000~26500



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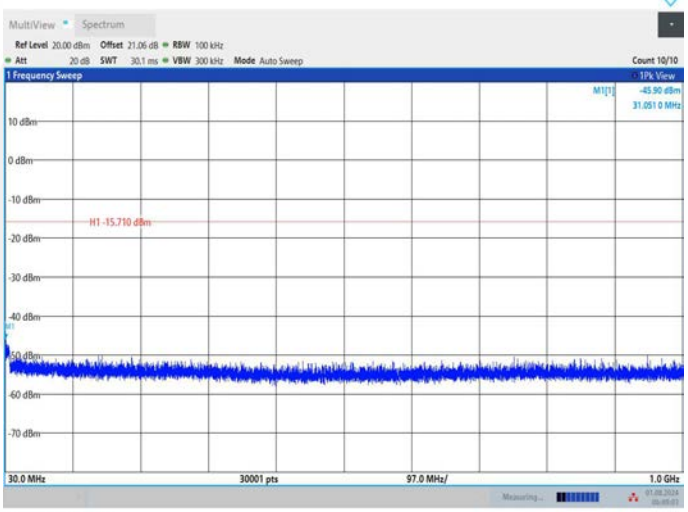
11G_Ant1_2437_30~1000



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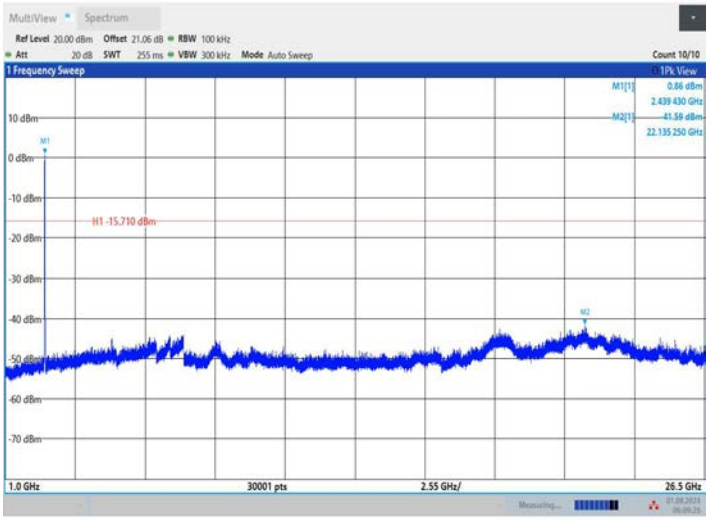
11G_Ant1_2437_1000~26500



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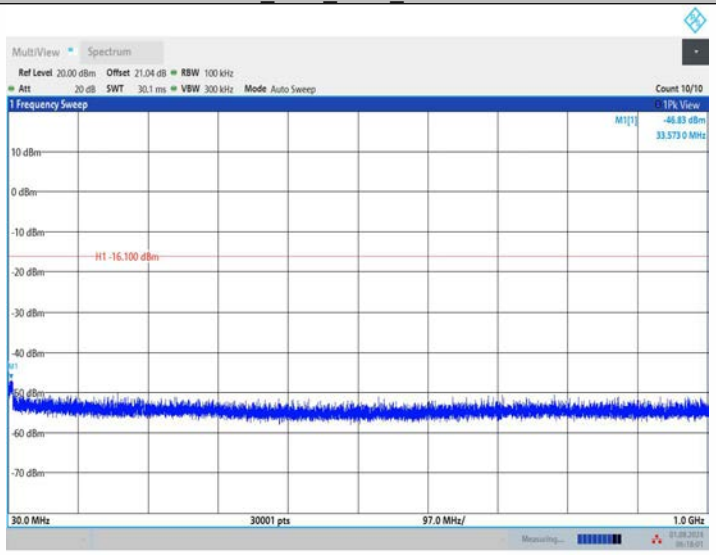
11G_Ant2_2437_30~1000



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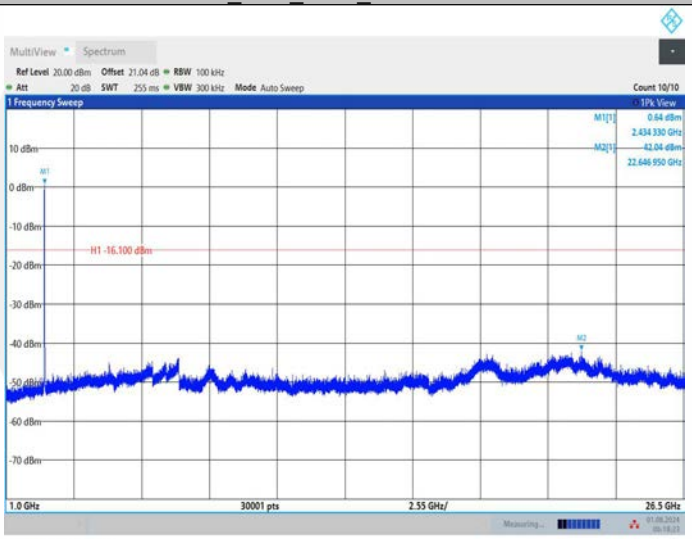
11G_Ant2_2437_1000~26500



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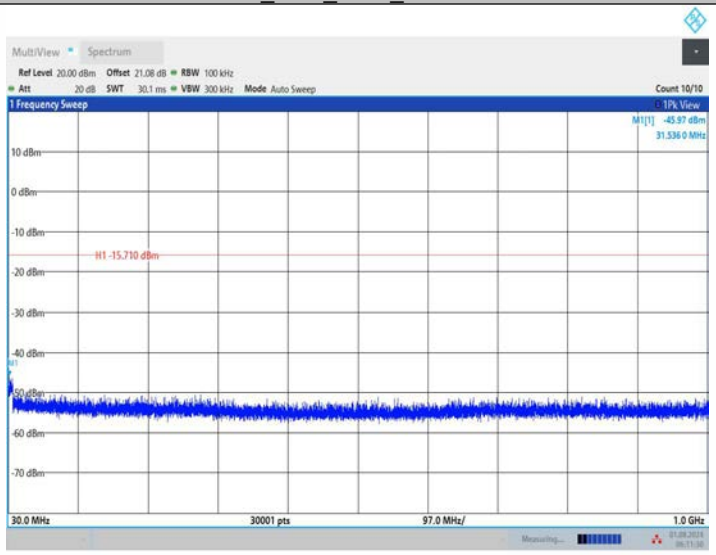
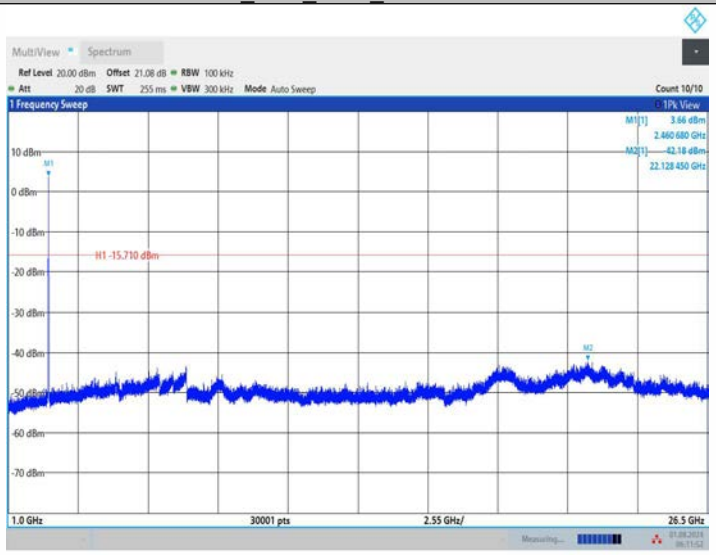
11G_Ant1_2462_30~1000



06:11:30 01.08.2024

11G_Ant1_2462_1000~26500



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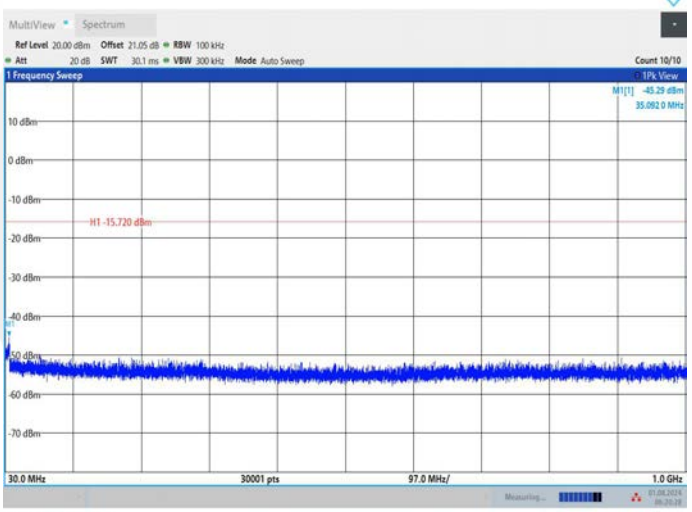
11G_Ant2_2462_30~1000



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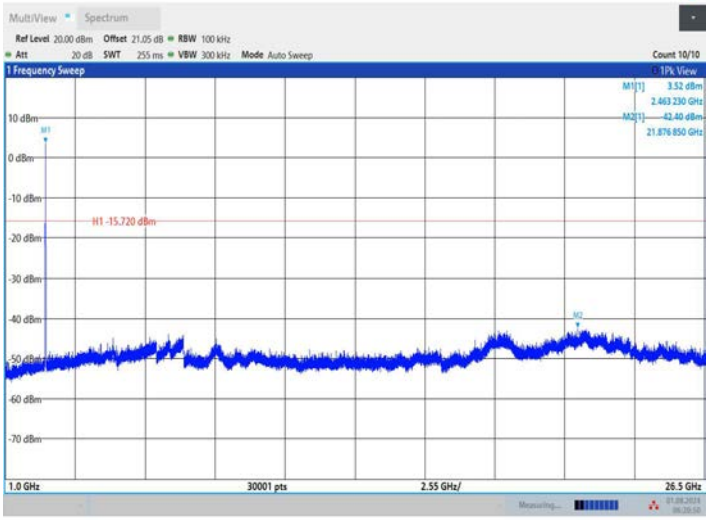
11G_Ant2_2462_1000~26500



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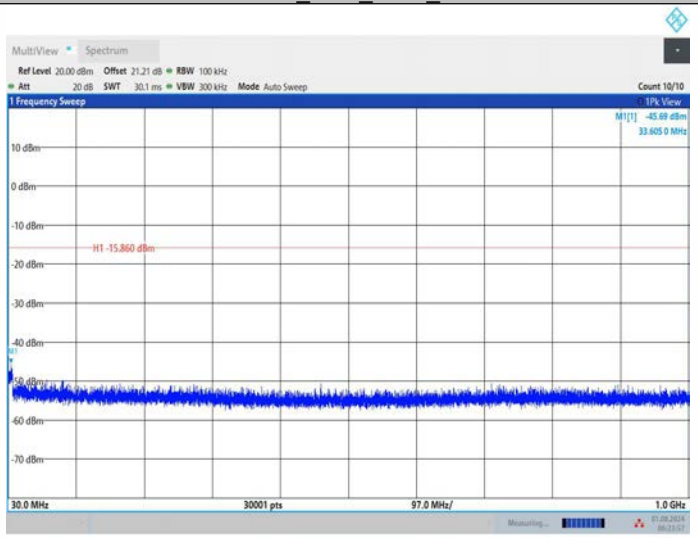
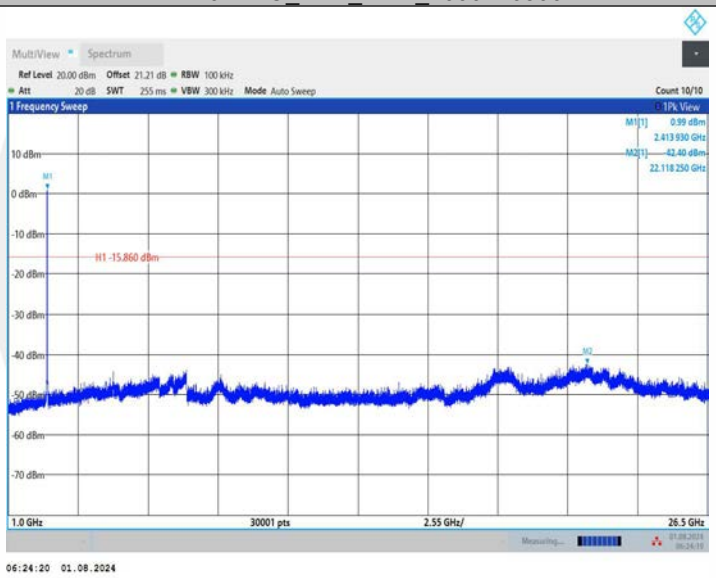
11N20MIMO_Ant1_2412_30~1000



11N20MIMO_Ant1_2412_1000~26500



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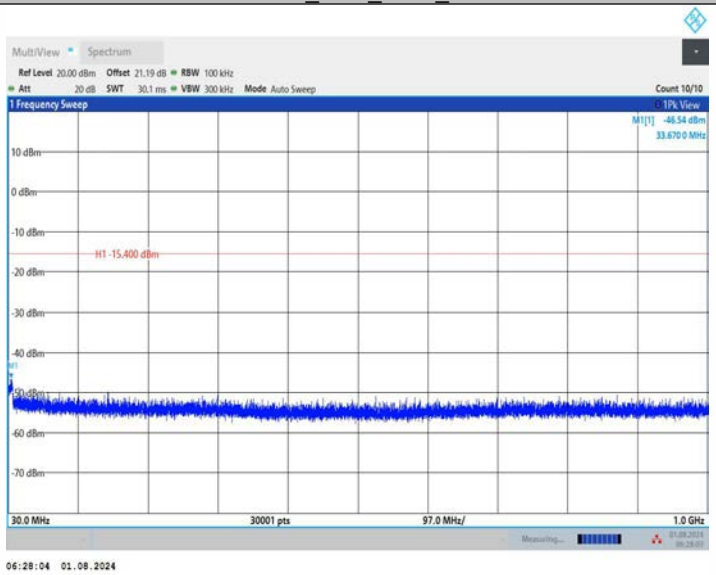
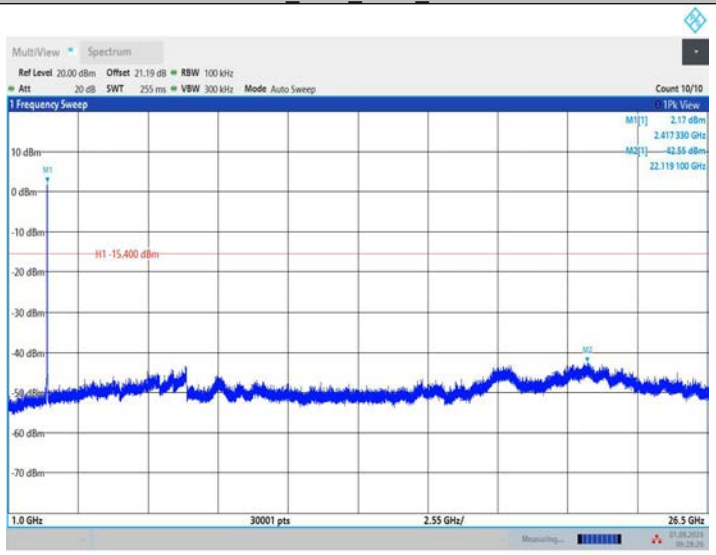


11N20MIMO_Ant2_2412_1000~26500



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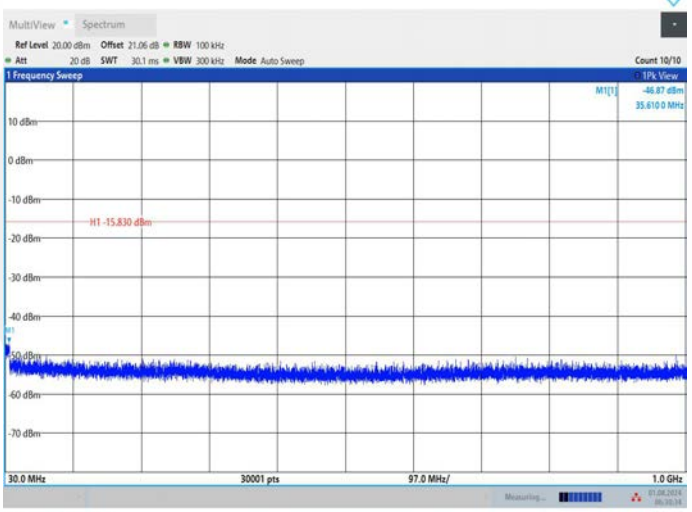
11N20MIMO_Ant1_2437_30~1000



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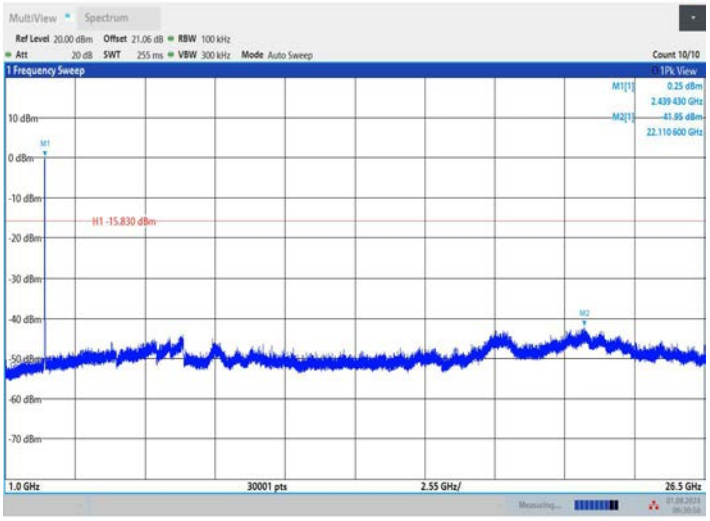
11N20MIMO_Ant1_2437_1000~26500



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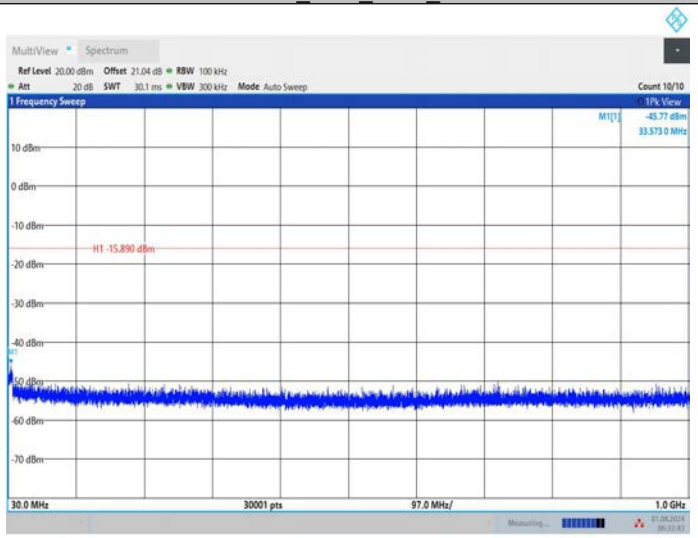
11N20MIMO_Ant2_2437_30~1000



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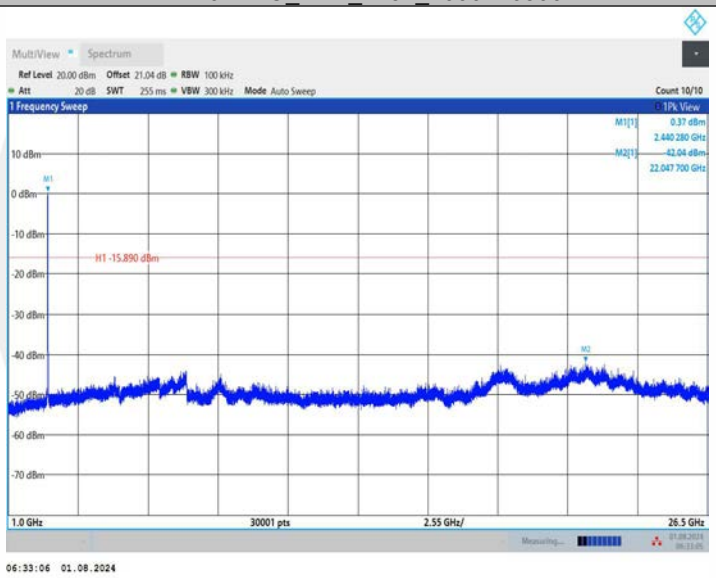
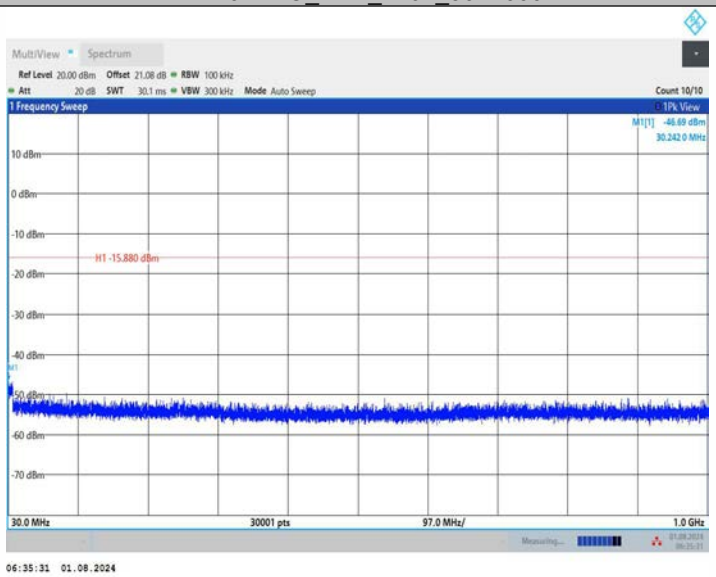


11N20MIMO_Ant1_2462_30~1000



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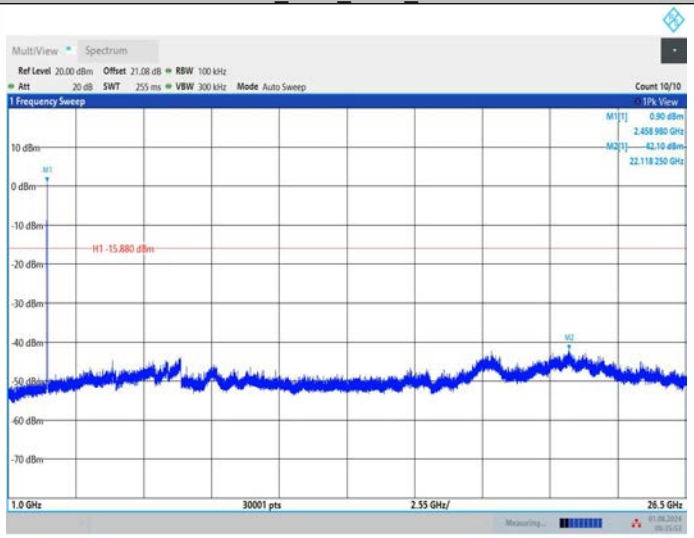

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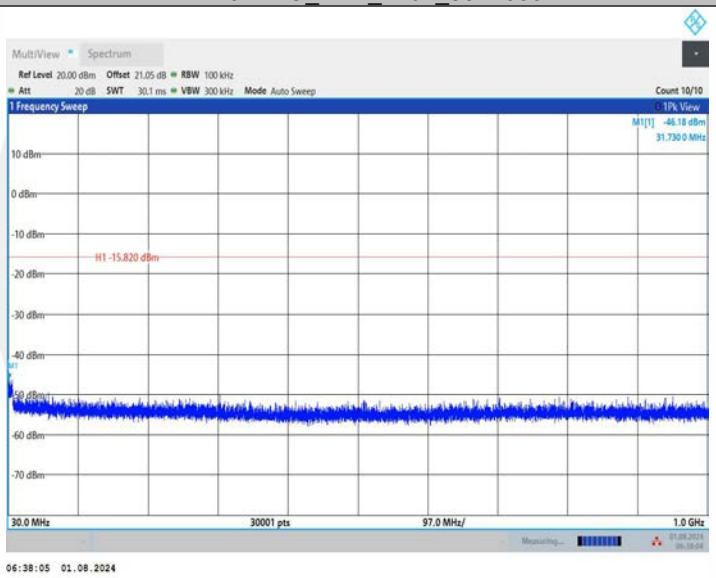

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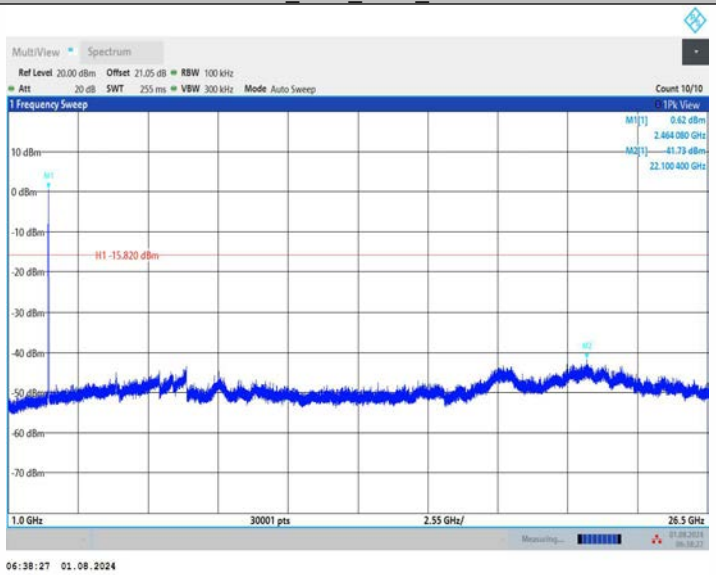
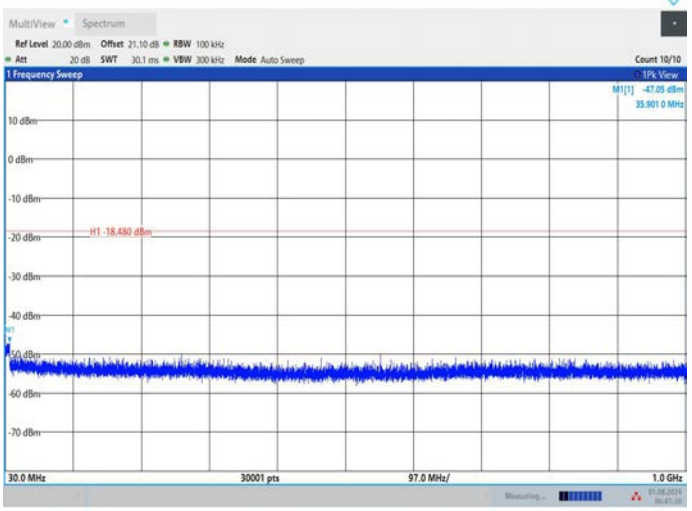


11N40MIMO_Ant1_2422_30~1000



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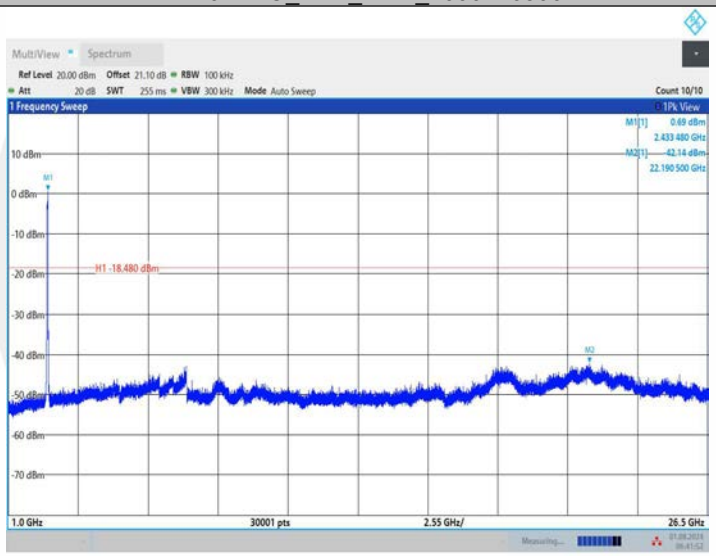
11N40MIMO_Ant1_2422_1000~26500



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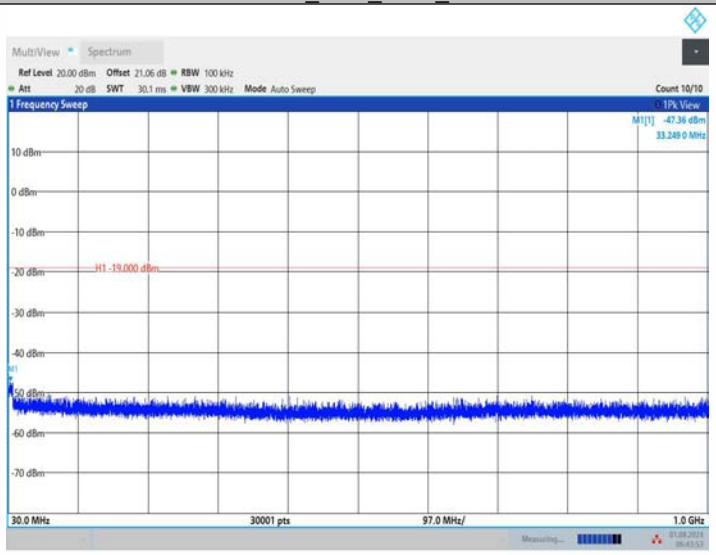
11N40MIMO_Ant2_2422_30~1000



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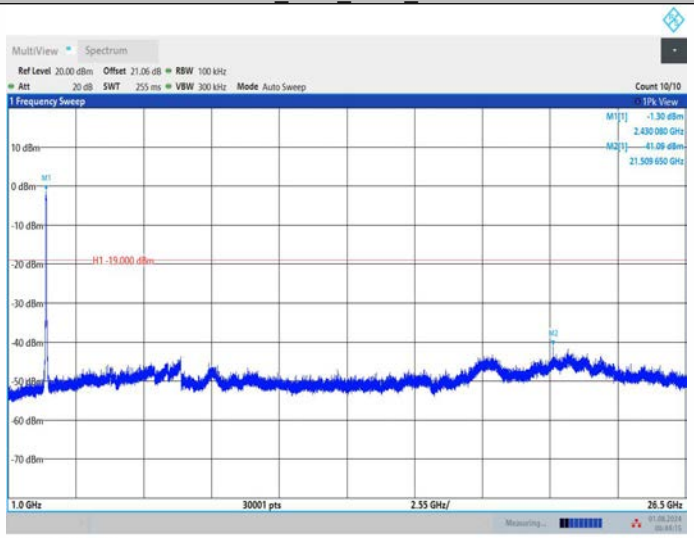
11N40MIMO_Ant2_2422_1000~26500



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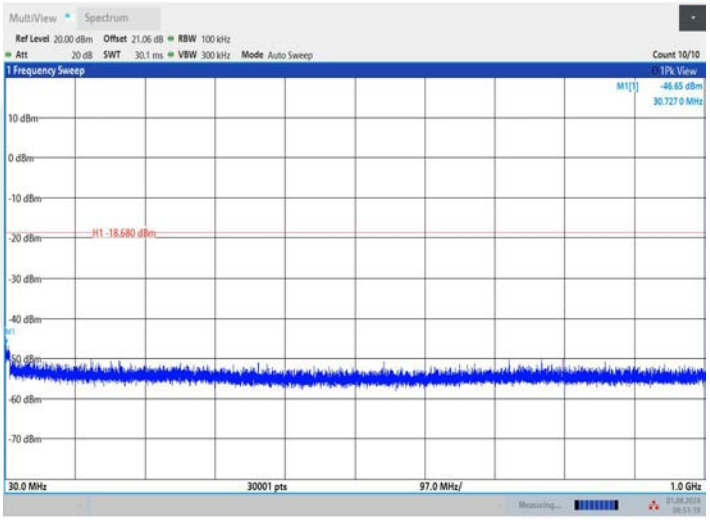

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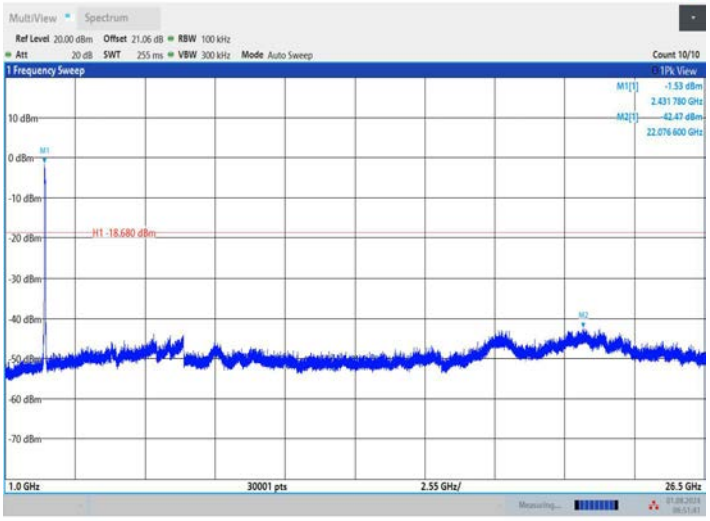
11N40MIMO_Ant1_2437_1000~26500



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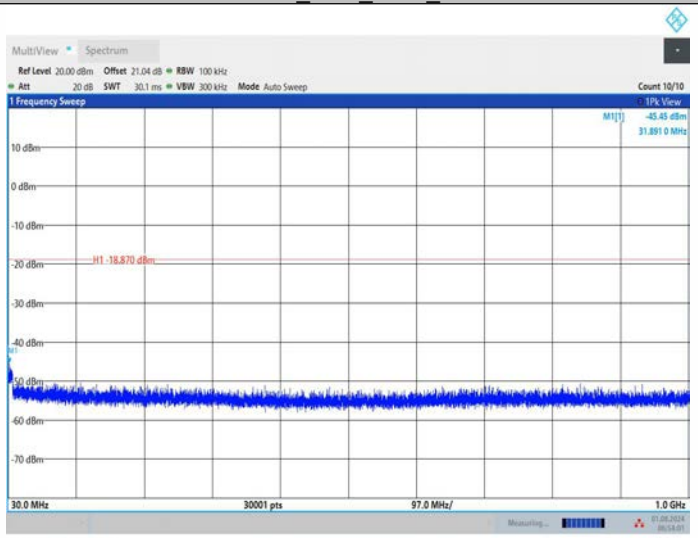
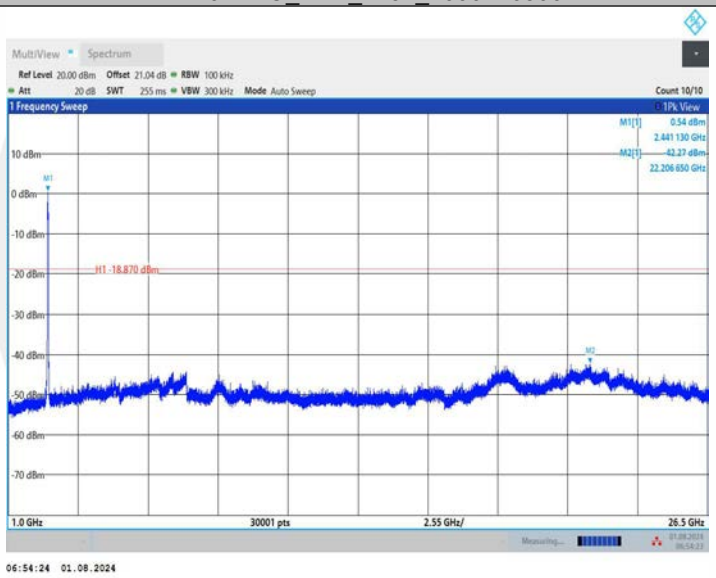
11N40MIMO_Ant2_2437_30~1000



11N40MIMO_Ant2_2437_1000~26500



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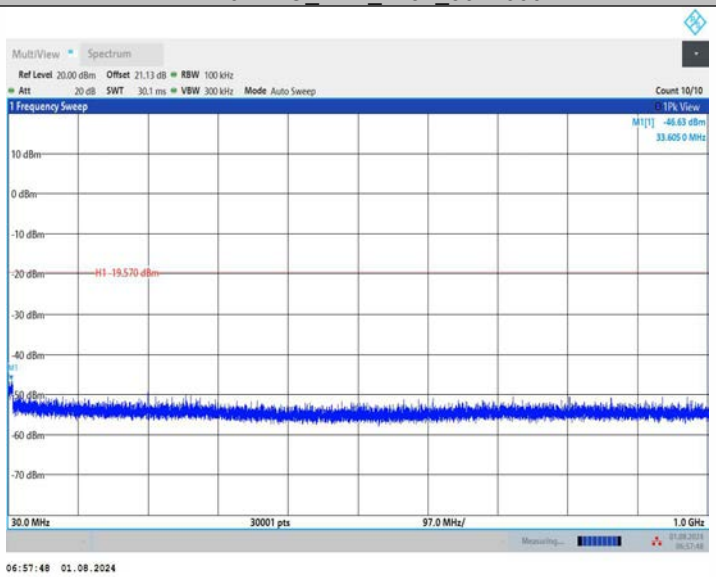

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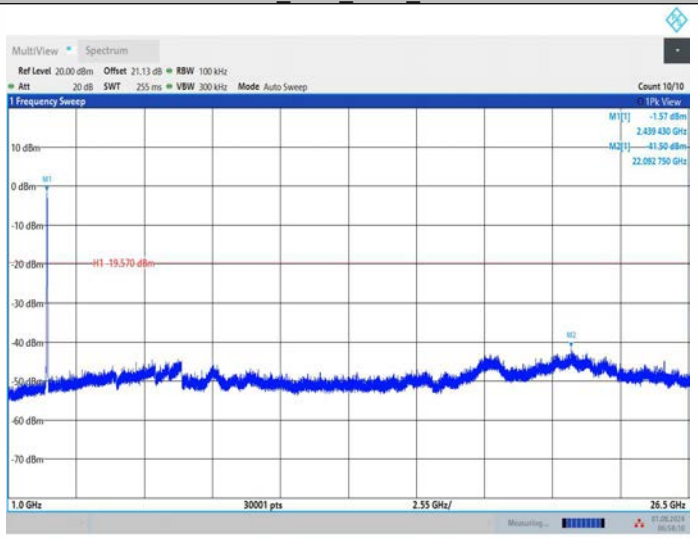

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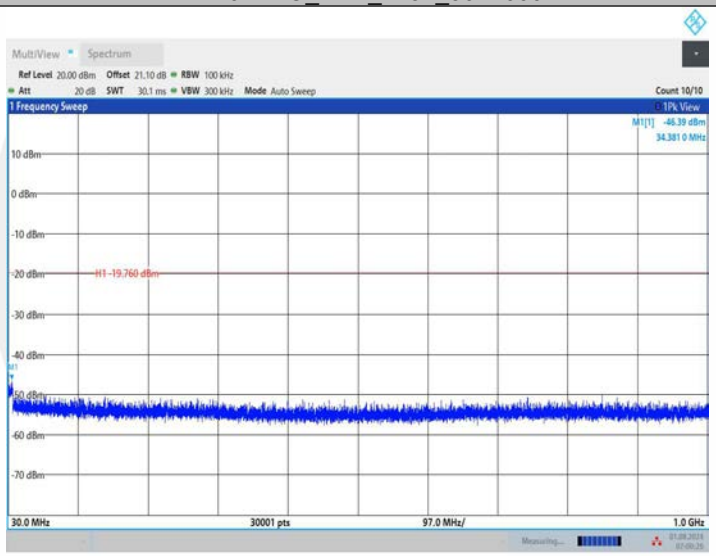

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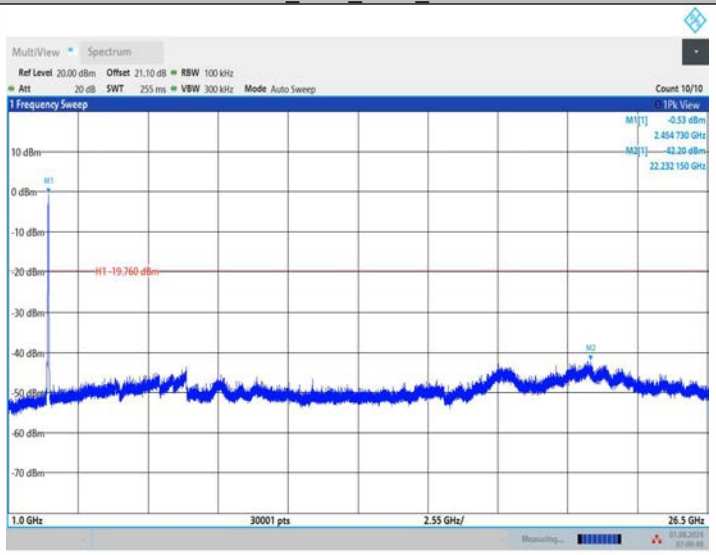

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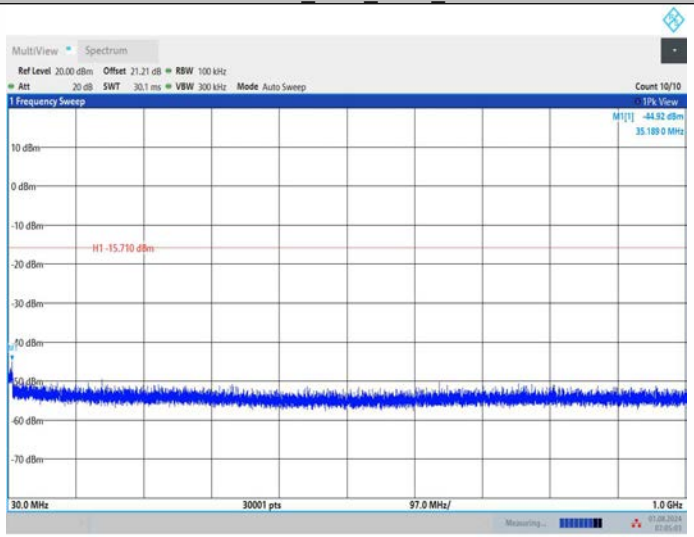
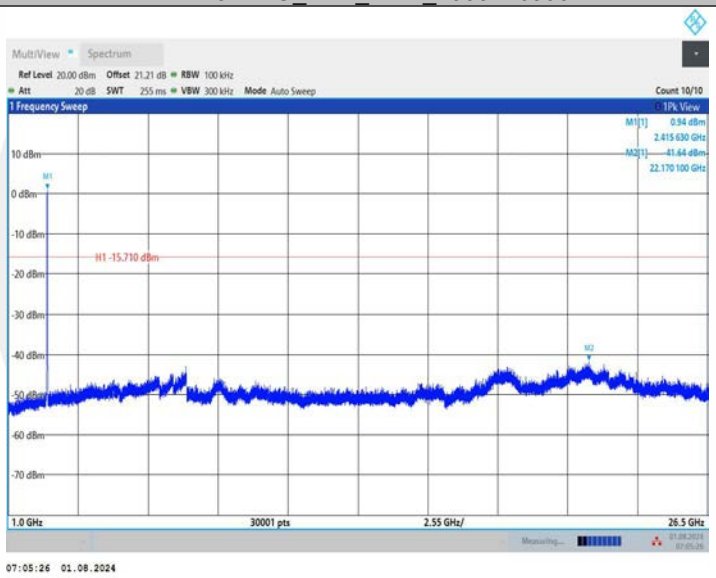
11AX20MIMO_Ant1_2412_30~1000



11AX20MIMO_Ant1_2412_1000~26500



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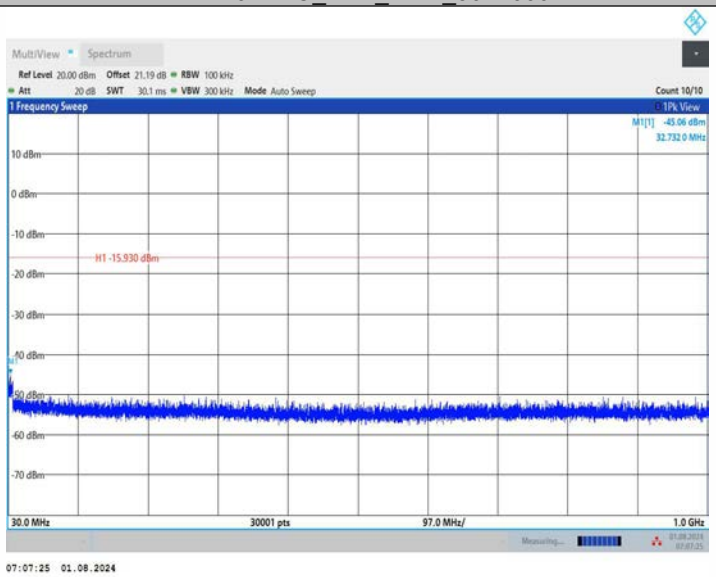
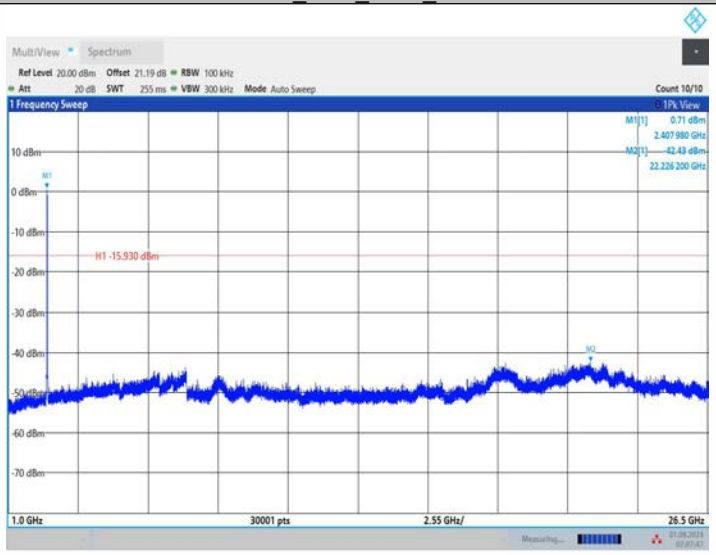


11AX20MIMO_Ant2_2412_1000~26500



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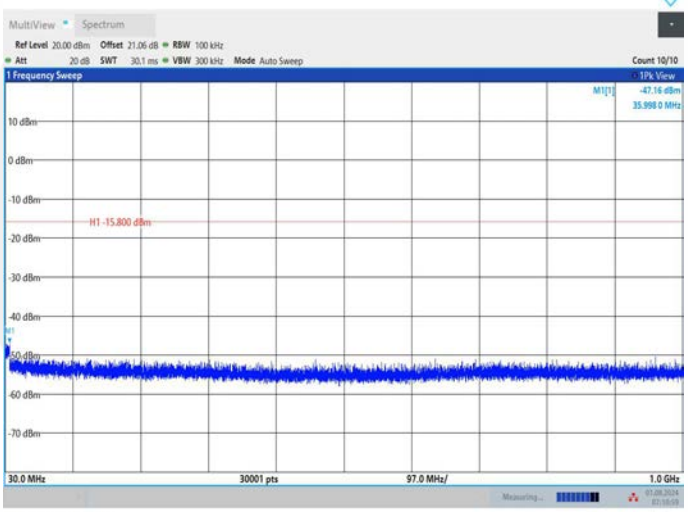
11AX20MIMO_Ant1_2437_30~1000



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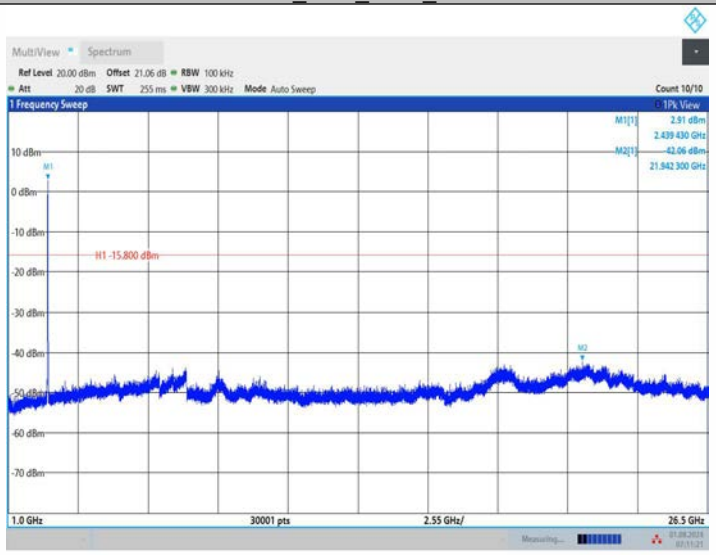
11AX20MIMO_Ant1_2437_1000~26500



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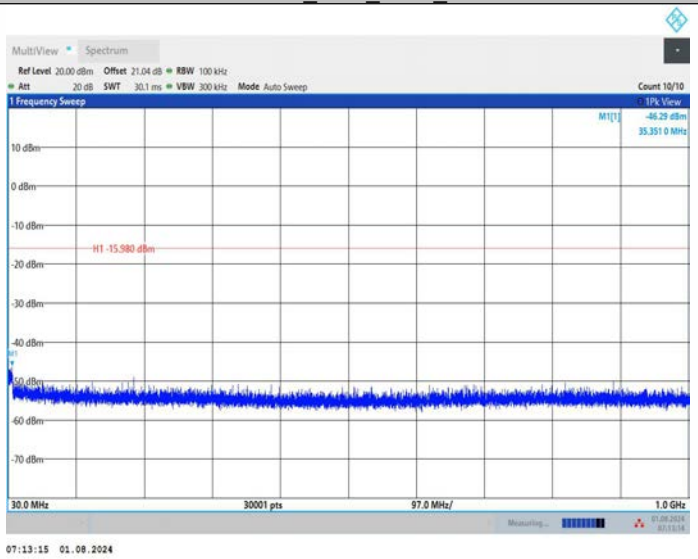
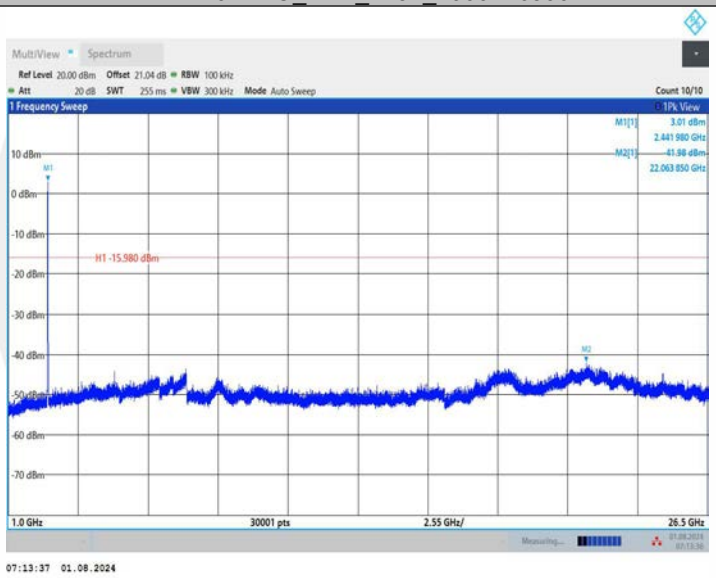


11AX20MIMO_Ant2_2437_1000~26500



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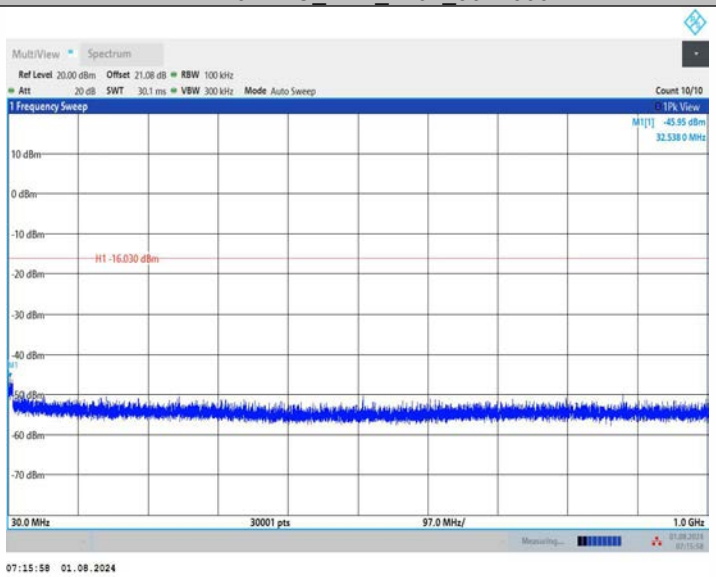
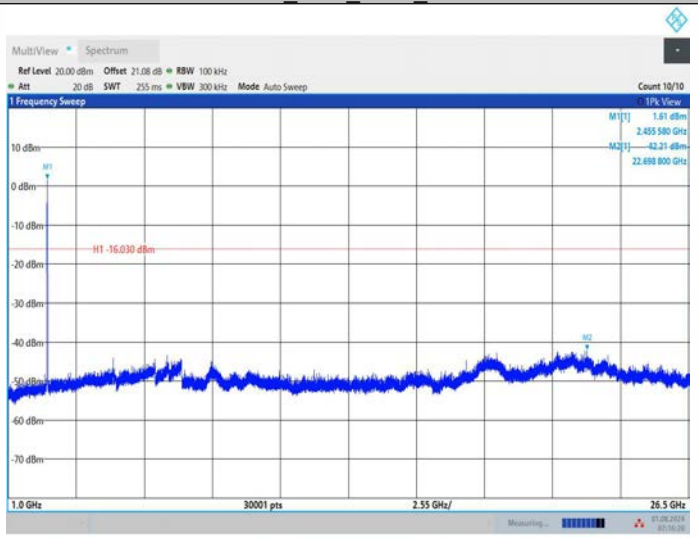
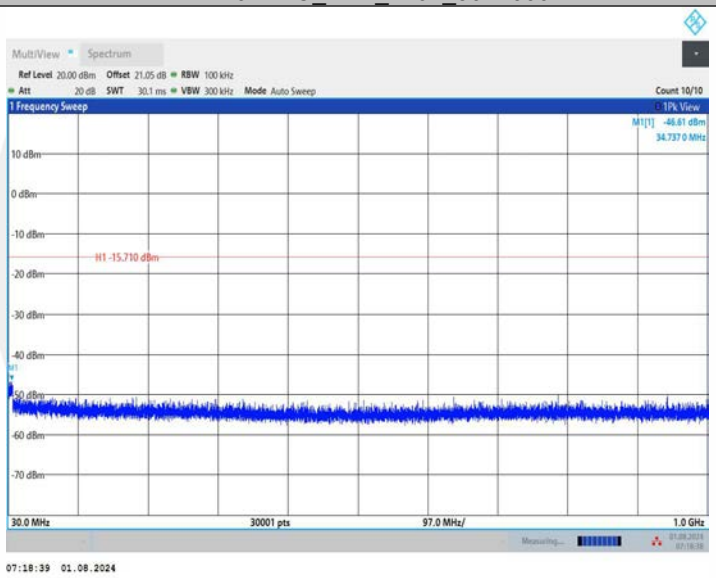


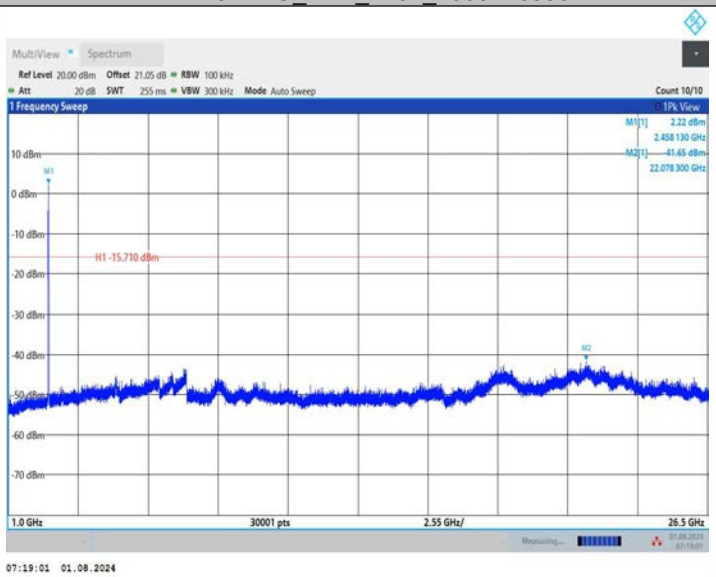
11AX20MIMO_Ant1_2462_1000~26500



11AX20MIMO_Ant2_2462_30~1000



11AX20MIMO_Ant2_2462_1000~26500



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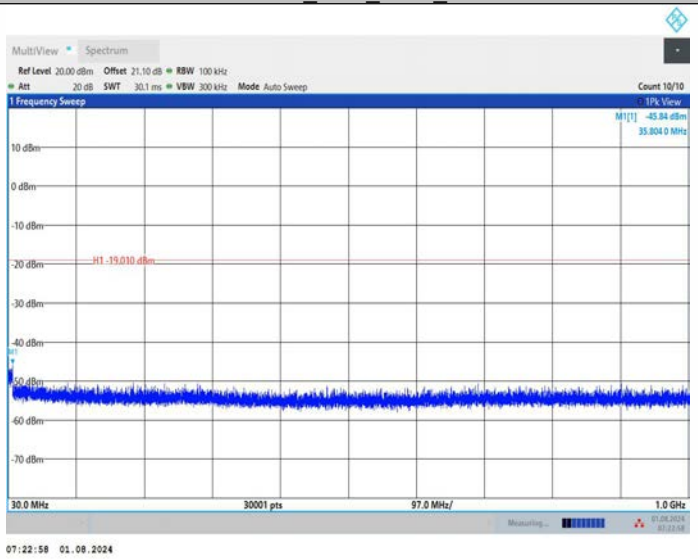

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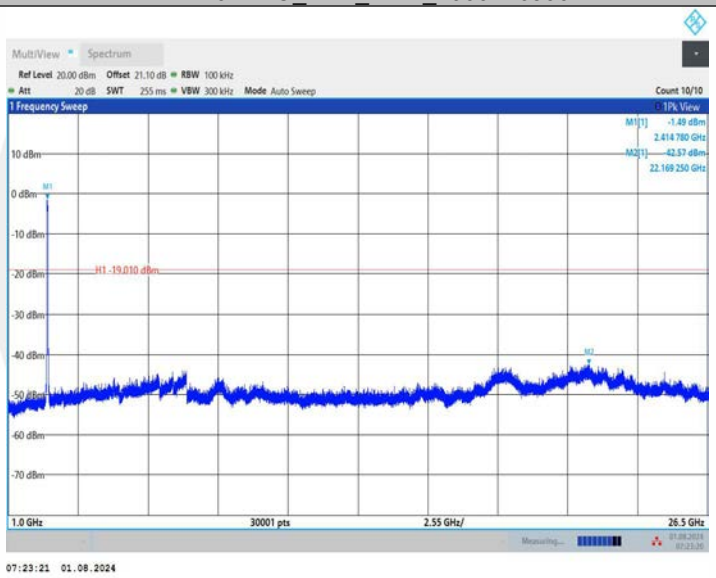
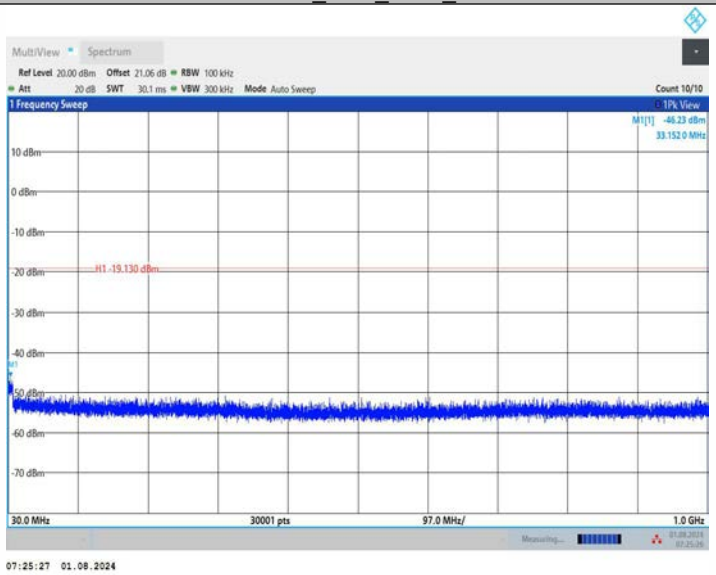
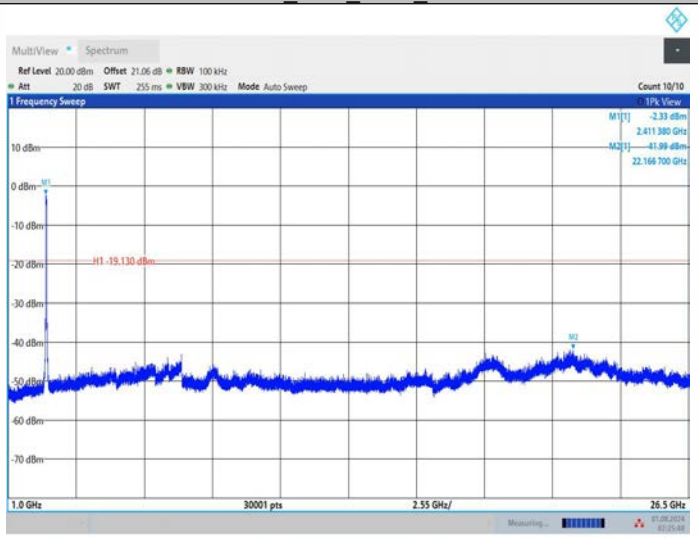


11AX40MIMO_Ant2_2422_30~1000



11AX40MIMO_Ant2_2422_1000~26500



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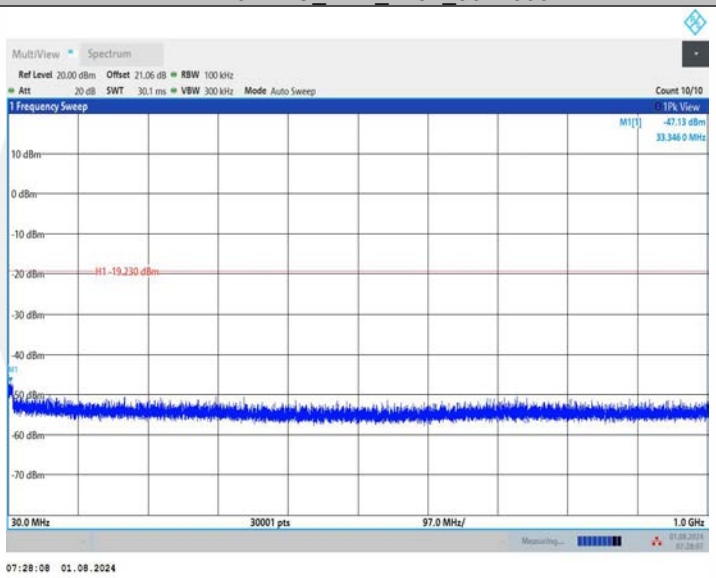
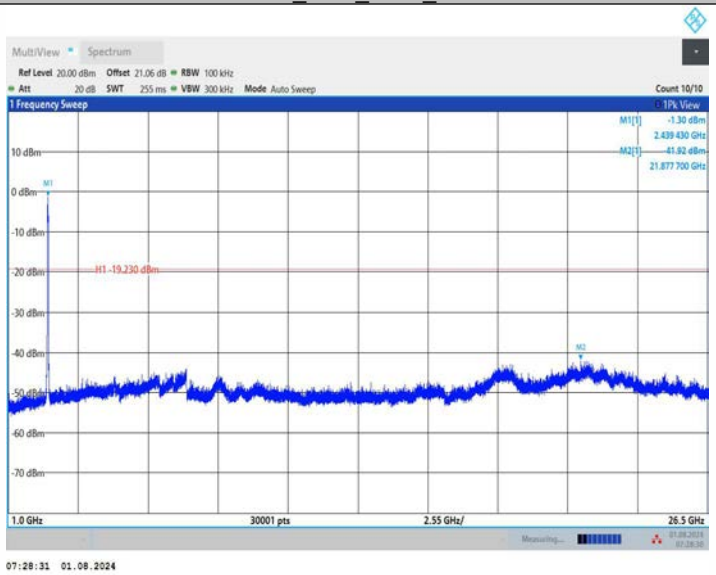
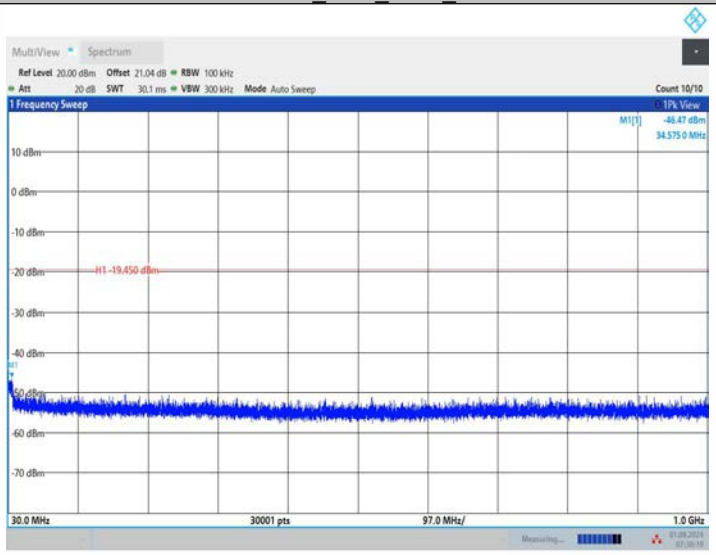


11AX40MIMO_Ant1_2437_1000~26500



11AX40MIMO_Ant2_2437_30~1000



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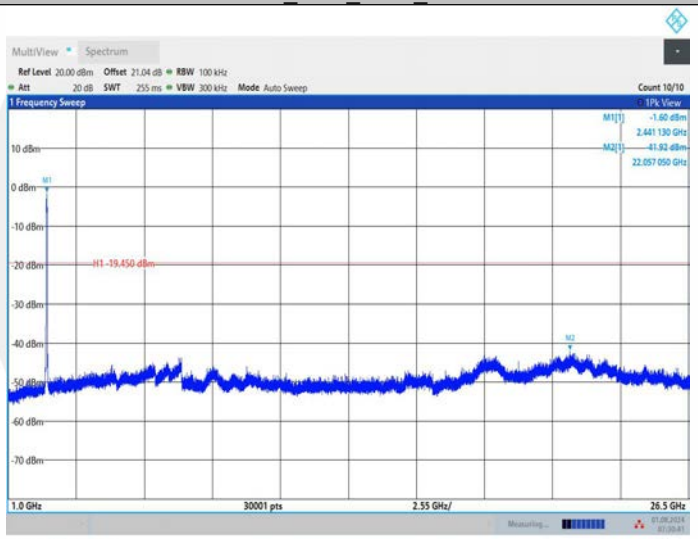

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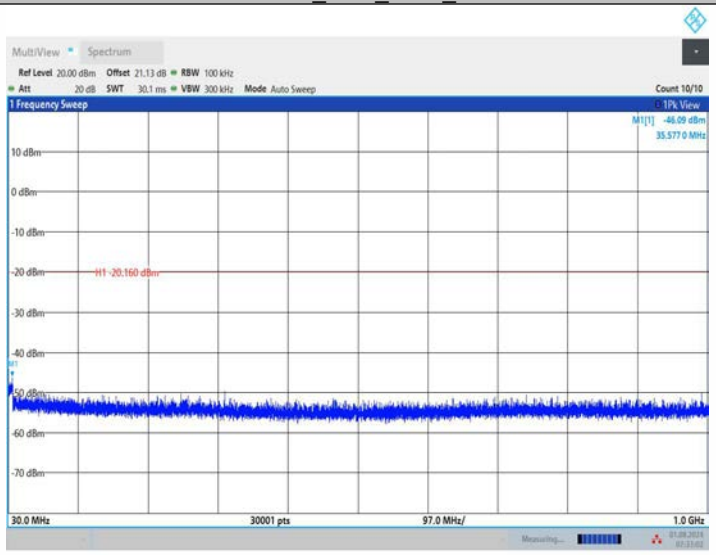

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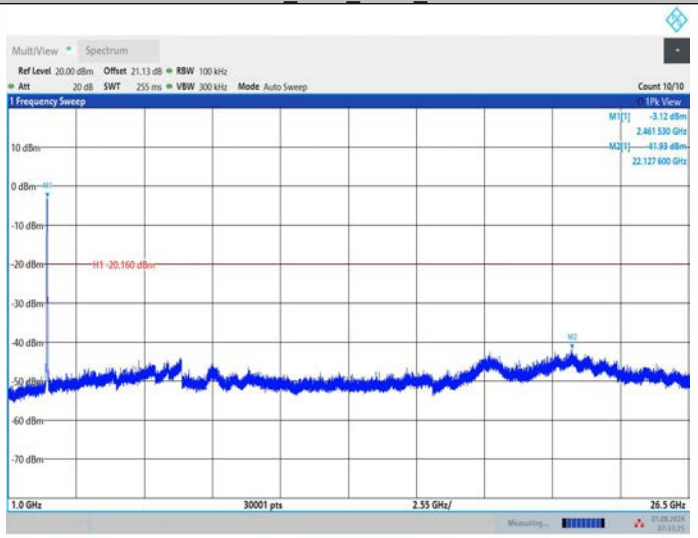
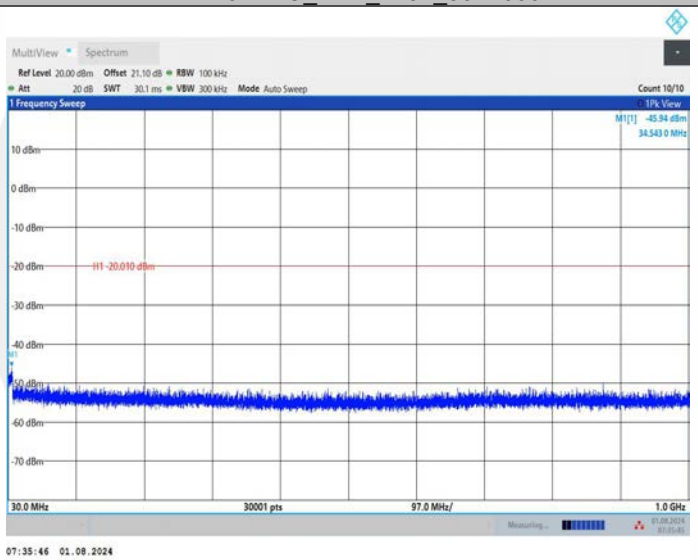
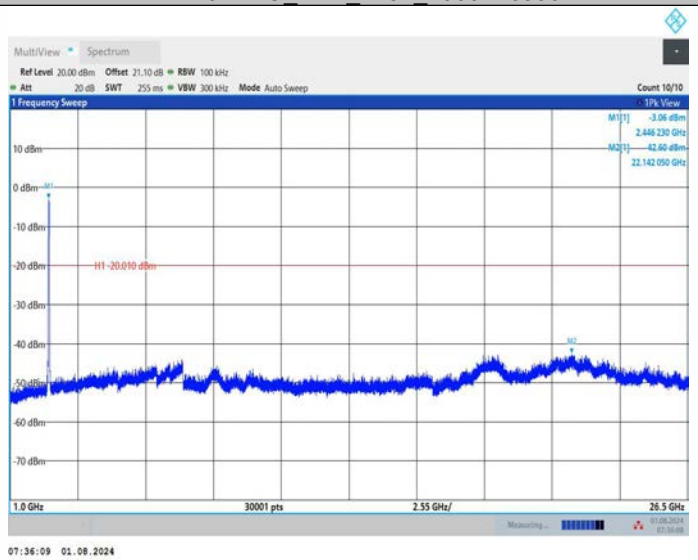


11AX40MIMO_Ant2_2452_30~1000



11AX40MIMO_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 Part15.205, 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 Part15.205 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 ≥ 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 ≥ 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 ≥ 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 20log(dwell time/100 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℃	ATM Pressure:	1011 mbar
Humidity :	45 %	Test Engineer:	HZB

All of the configurations or modes are tested, the data of the worst case is recorded as below.

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

Temperature: 28.1℃ Test By: CZF
Humidity: 43%
Test mode: 802.11b

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
	H/V	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 antennas and modulation modes are tested, the data of the worst mode is described in the table. Highest gain of each antenna and highest output power is ANT2 and MIMO as below:

ANT2:

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

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
8514.37	V	63.87	74.00	10.13	peak
9849.37	V	66.03	74.00	7.97	peak
16166.2	V	66.54	74.00	7.46	peak
8514.375	V	44.99	54.00	9.01	AVG
9849.375	V	44.56	54.00	9.44	AVG
16166.25	V	43.72	54.00	10.28	AVG
8467.5	H	63.72	74.00	10.28	peak
9984.37	H	65.41	74.00	8.59	peak
14058.7	H	66.90	74.00	7.10	peak
8467.5	H	45.28	54.00	8.72	AVG
9984.375	H	45.50	54.00	8.50	AVG
14058.7	H	44.19	54.00	9.81	AVG

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

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
8461.87	V	64.72	74.00	9.28	peak
11385	V	66.41	74.00	7.59	peak
16890	V	66.00	74.00	8.00	peak
8461.875	V	45.13	54.00	8.87	AVG
11385	V	46.20	54.00	7.80	AVG
16890	V	46.28	54.00	7.72	AVG
8568.75	H	64.66	74.00	9.34	peak
11330.6	H	67.16	74.00	6.84	peak
17623.1	H	66.58	74.00	7.42	peak
8568.75	H	44.66	54.00	9.34	AVG
11330.62	H	47.08	54.00	6.92	AVG
17623.12	H	47.52	54.00	6.48	AVG

Test mode:	802.11 B	Frequency:	Channel 11: 2472MHz

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
7918.12	V	62.35	74.00	11.65	peak
10044.3	V	65.99	74.00	8.01	peak
17233.1	V	66.61	74.00	7.39	peak
7918.125	V	42.53	54.00	11.47	AVG
10044.37	V	45.07	54.00	8.93	AVG
17233.12	V	47.72	54.00	6.28	AVG
8467.5	H	64.82	74.00	9.18	peak
11246.2	H	66.34	74.00	7.66	peak
17548.1	H	66.33	74.00	7.67	peak
8467.5	H	45.18	54.00	8.82	AVG
11246.25	H	46.82	54.00	7.18	AVG
17548.12	H	46.06	54.00	7.94	AVG

MIMO:

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

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
8512.9800	V	63.74	74.00	10.26	Peak
9847.9800	V	65.87	74.00	8.13	Peak
16167.4800	V	66.51	74.00	7.49	Peak
8515.6550	V	44.97	54.00	9.03	Avg
9847.1250	V	44.30	54.00	9.70	Avg
16164.0000	V	43.53	54.00	10.47	Avg
8479.1900	H	63.64	74.00	10.36	Peak
9996.0600	H	65.20	74.00	8.80	Peak
14070.3900	H	66.74	74.00	7.26	Peak
8479.1900	H	45.14	54.00	8.86	Avg
9981.0650	H	45.32	54.00	8.68	Avg
14055.3900	H	44.06	54.00	9.94	Avg

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

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
8460.4800	V	64.59	74.00	9.41	Peak
11383.6100	V	66.25	74.00	7.75	Peak
16891.2800	V	65.97	74.00	8.03	Peak
8463.1550	V	45.11	54.00	8.89	Avg
11382.7500	V	45.94	54.00	8.06	Avg
16887.7500	V	46.09	54.00	7.91	Avg
8580.4400	H	64.58	74.00	9.42	Peak
11342.2900	H	66.95	74.00	7.05	Peak
17634.7900	H	66.42	74.00	7.58	Peak
8580.4400	H	44.52	54.00	9.48	Avg
11327.3100	H	46.90	54.00	7.10	Avg
17619.8100	H	47.39	54.00	6.61	Avg

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

Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
7916.7300	V	62.22	74.00	11.78	Peak
10042.9100	V	65.83	74.00	8.17	Peak
17234.3800	V	66.58	74.00	7.42	Peak
7919.4050	V	42.51	54.00	11.49	Avg
10042.1200	V	44.81	54.00	9.19	Avg
17230.8700	V	47.53	54.00	6.47	Avg
8479.1900	H	64.74	74.00	9.26	Peak
11257.8900	H	66.13	74.00	7.87	Peak
17559.7900	H	66.17	74.00	7.83	Peak
8479.1900	H	45.04	54.00	8.96	Avg
11242.9400	H	46.64	54.00	7.36	Avg
17544.8100	H	45.93	54.00	8.07	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

Test mode:	802.11AX20	Frequency:	Channel 1: 2412MHz

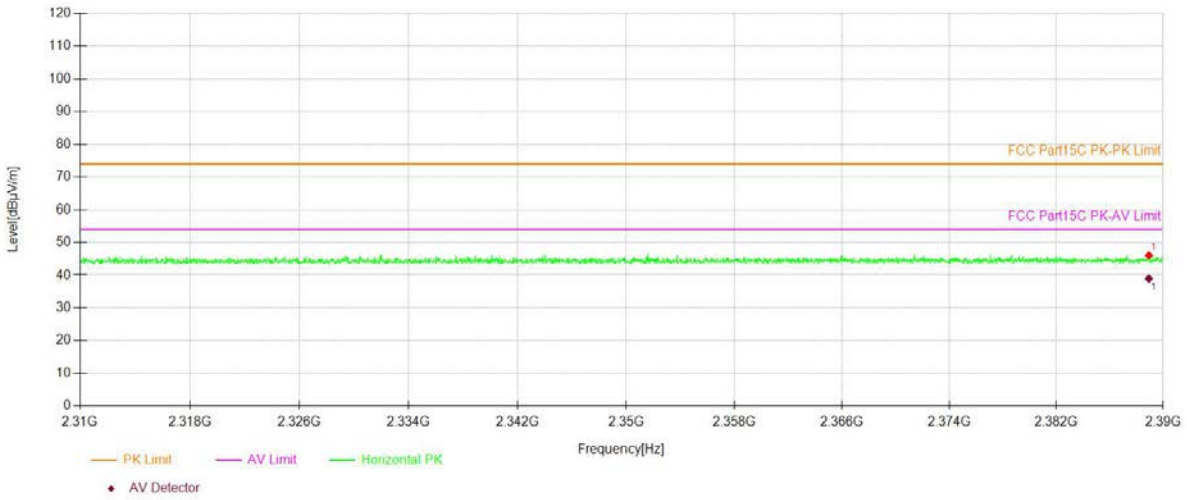
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
2386.18	V	46.69	74.00	27.31	peak
2386.18	V	39.45	54.00	14.55	AVG
2388.93	H	46.04	74.00	27.96	peak
2388.93	H	38.96	54.00	15.04	AVG

Test mode:	802.11AX20	Frequency:	Channel 11: 2462MHz

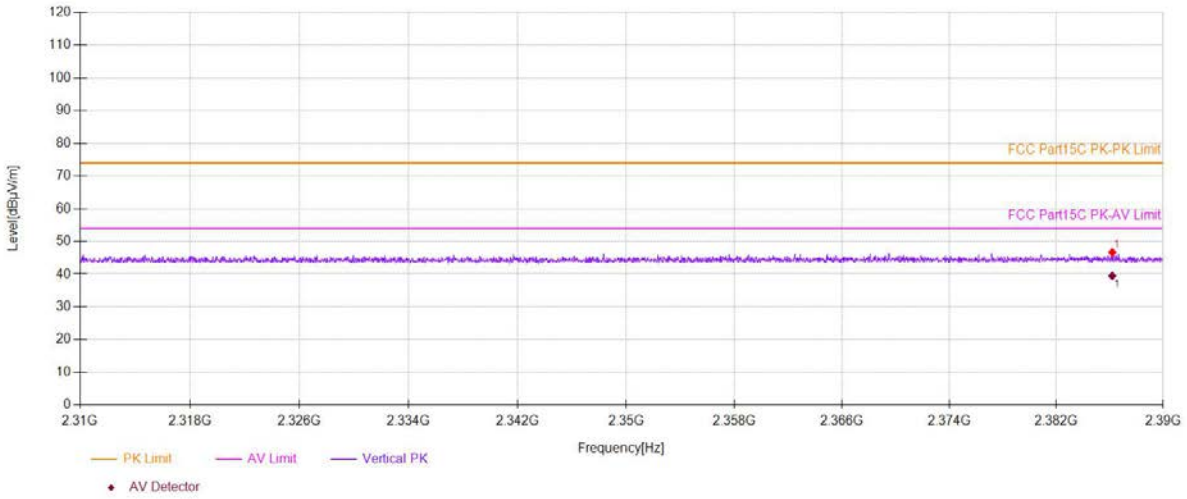
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
2485.11	V	46.56	74.00	27.44	peak
2485.11	V	40.02	54.00	13.98	AVG
2484.06	H	46.49	74.00	27.51	peak
2484.06	H	39.41	54.00	14.59	AVG

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.

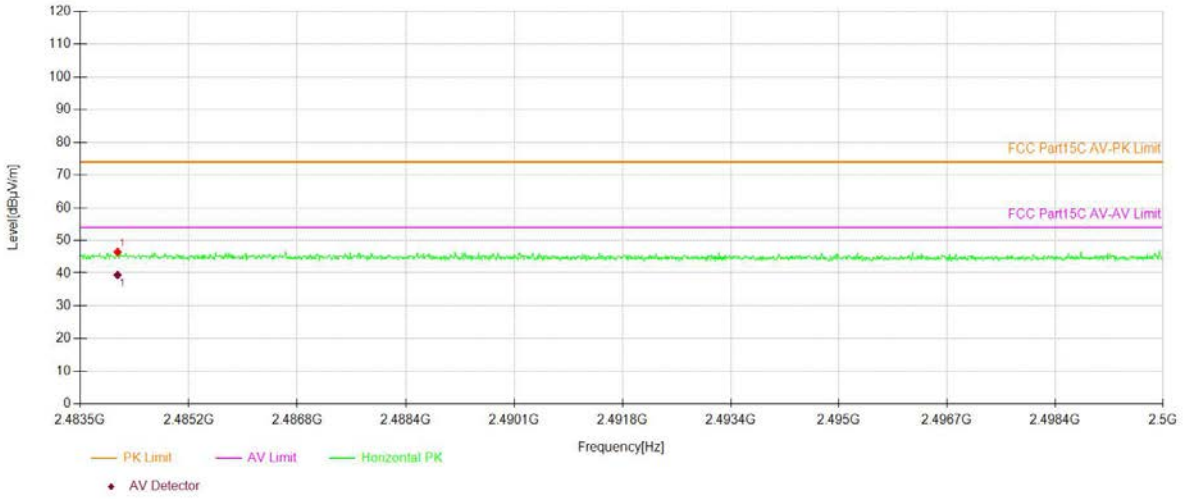
Test Model	Spurious Emission in Restricted Band 2310-2390MHz ☒ 802.11AX20 ☐ 802.11g ☐ 802.11n(HT20) ☐ 802.11n(HT40) ☒ Channel 1:2412MHz ☐ Channel 3: 2422MHz Polarity: H VBW=3MHz



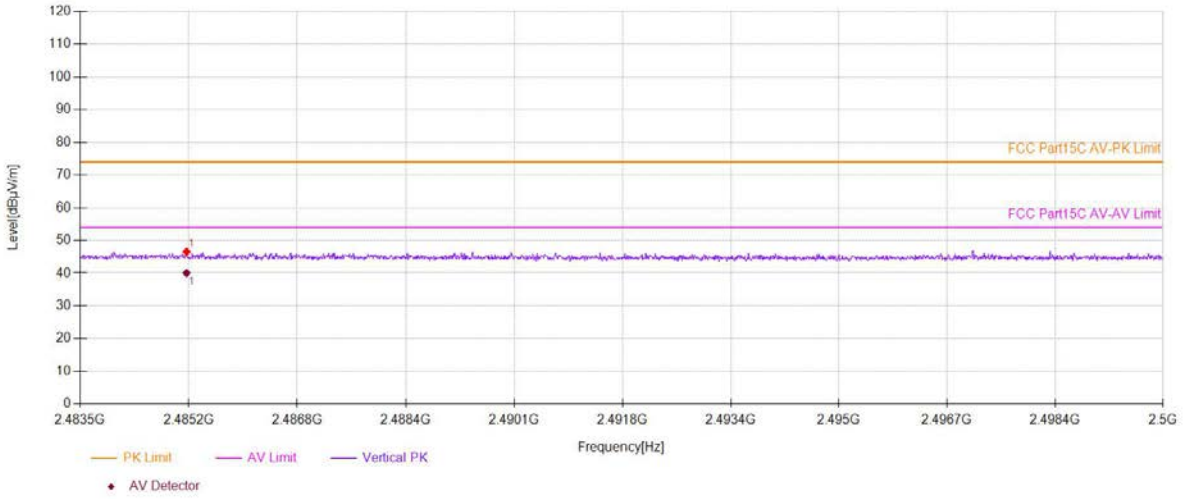
Test Model	Spurious Emission in Restricted Band 2310-2390MHz ☒ 802.11 AX20 ☐ 802.11g ☐ 802.11n(HT20) ☐ 802.11n(HT40) ☒ Channel 1:2412MHz ☐ Channel 3: 2422MHz Polarity:V VBW=3MHz



Test Model	Spurious Emission in Restricted Band 2483.5-2500MHz ☒ 802.11 AX20 ☐ 802.11g ☐ 802.11n(HT20) ☐ 802.11n(HT40) ☒ Channel 11: 2462MHz ☐ Channel 9: 2452MHz Polarity: H VBW=3MHz

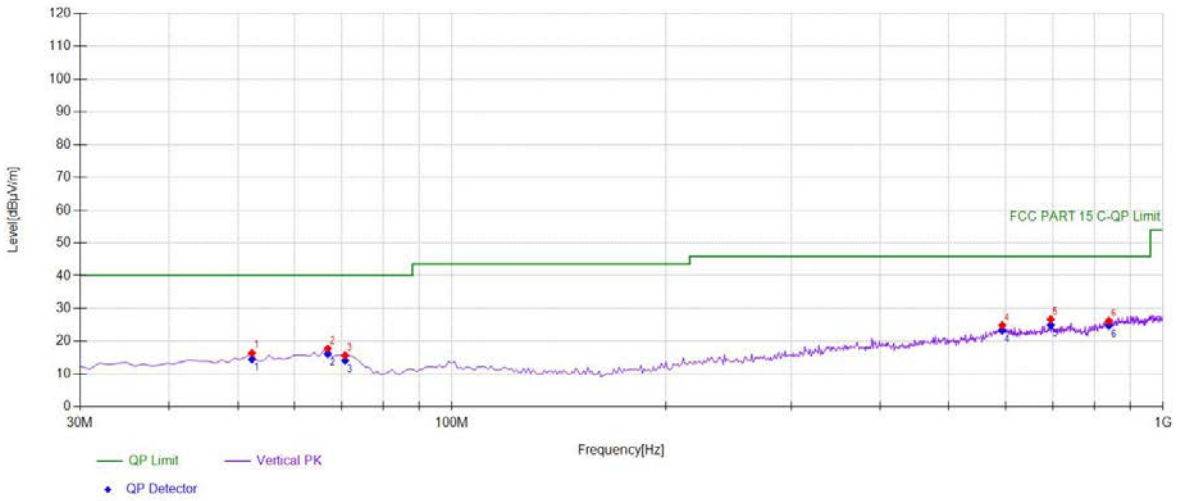


Test Model	Spurious Emission in Restricted Band2483.5-2500MHz ☒ 802.11 AX20 ☐ 802.11g ☐ 802.11n(HT20) ☐ 802.11n(HT40) ☒ Channel 11: 2462MHz ☐ Channel 9: 2452MHz Polarity: V VBW=3MHz

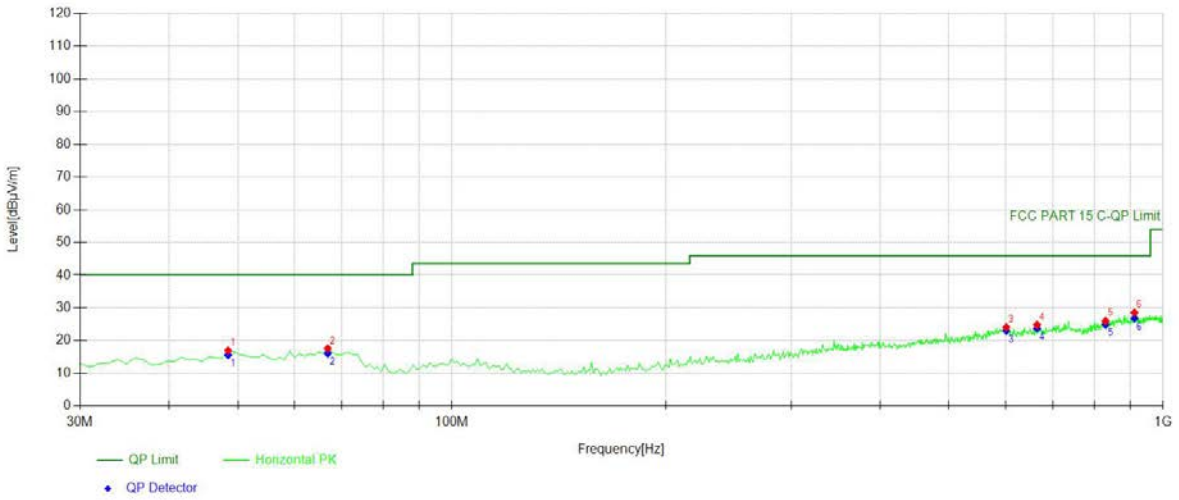


■ Spurious Emission below 1GHz (30MHz to 1GHz)

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

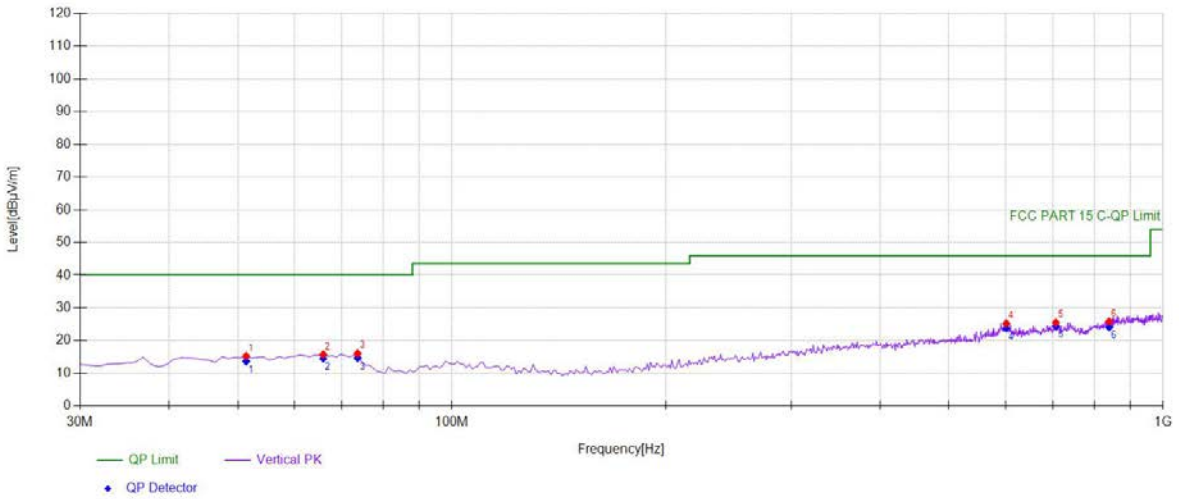


Suspected Data List								
NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Detector	Limit [dBµV/m]	Margin [dB]	Polarity
1	52.3323	32.69	-16.31	16.38	PK	40.00	23.62	Vertical
2	66.8969	36.00	-18.27	17.73	PK	40.00	22.27	Vertical
3	70.7808	34.49	-18.81	15.68	PK	40.00	24.32	Vertical
4	594.134	31.60	-6.73	24.87	PK	46.00	21.13	Vertical
5	695.115	32.98	-6.33	26.65	PK	46.00	19.35	Vertical
6	838.818	30.87	-4.69	26.18	PK	46.00	19.82	Vertical

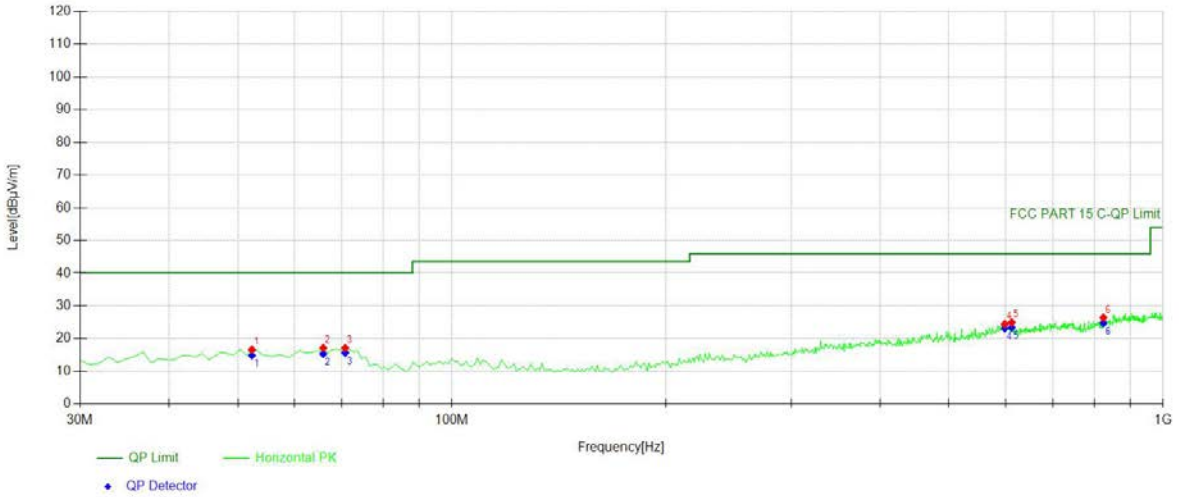


Suspected Data List								
NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Detector	Limit [dBµV/m]	Margin [dB]	Polarity
1	48.4484	33.13	-16.22	16.91	PK	40.00	23.09	Horizontal
2	66.8969	35.83	-18.27	17.56	PK	40.00	22.44	Horizontal
3	601.901	30.62	-6.54	24.08	PK	46.00	21.92	Horizontal
4	665.015	31.82	-7.01	24.81	PK	46.00	21.19	Horizontal
5	830.080	30.90	-4.92	25.98	PK	46.00	20.02	Horizontal
6	911.641	31.61	-3.07	28.54	PK	46.00	17.46	Horizontal

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

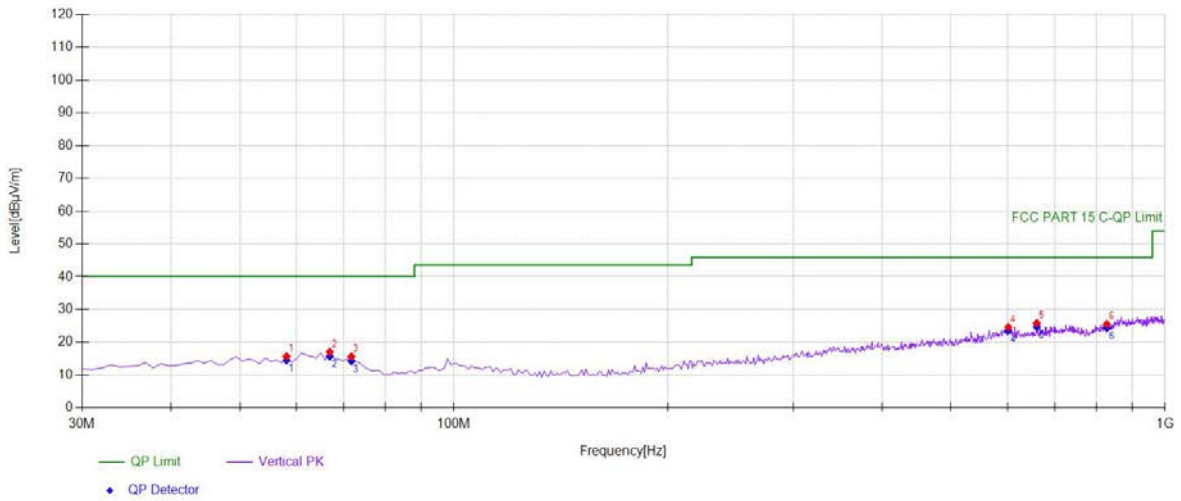


Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	51.3614	31.47	-16.19	15.28	PK	40.00	24.72	Vertical
2	65.9259	33.91	-18.14	15.77	PK	40.00	24.23	Vertical
3	73.6937	35.33	-19.25	16.08	PK	40.00	23.92	Vertical
4	601.901	31.77	-6.54	25.23	PK	46.00	20.77	Vertical
5	706.766	31.58	-6.10	25.48	PK	46.00	20.52	Vertical
6	839.789	30.45	-4.66	25.79	PK	46.00	20.21	Vertical

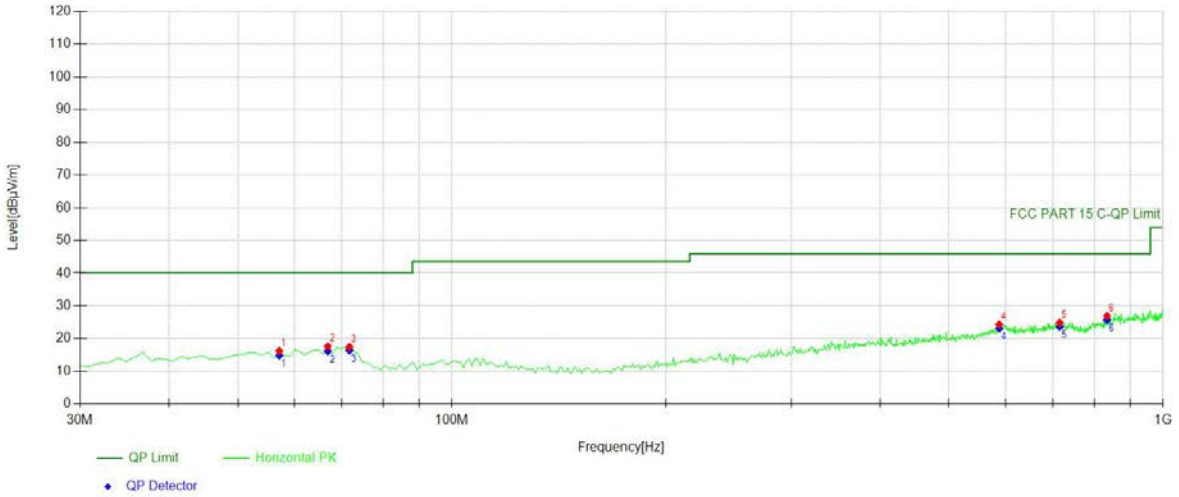


Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	52.3323	32.92	-16.31	16.61	PK	40.00	23.39	Horizontal
2	65.9259	35.24	-18.14	17.10	PK	40.00	22.90	Horizontal
3	70.7808	35.91	-18.81	17.10	PK	40.00	22.90	Horizontal
4	598.989	30.98	-6.49	24.49	PK	46.00	21.51	Horizontal
5	612.582	32.08	-7.14	24.94	PK	46.00	21.06	Horizontal
6	824.254	31.35	-5.01	26.34	PK	46.00	19.66	Horizontal

Test mode:	802.11B	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	58.1582	32.83	-17.08	15.75	PK	40.00	24.25	Vertical
2	66.8969	35.29	-18.27	17.02	PK	40.00	22.98	Vertical
3	71.7518	34.64	-18.96	15.68	PK	40.00	24.32	Vertical
4	601.901	31.16	-6.54	24.62	PK	46.00	21.38	Vertical
5	660.160	32.85	-7.03	25.82	PK	46.00	20.18	Vertical
6	828.138	30.44	-4.95	25.49	PK	46.00	20.51	Vertical



Suspected Data List								
NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Detector	Limit [dBµV/m]	Margin [dB]	Polarity
1	57.1872	33.15	-16.94	16.21	PK	40.00	23.79	Horizontal
2	66.8969	35.88	-18.27	17.61	PK	40.00	22.39	Horizontal
3	71.7518	36.42	-18.96	17.46	PK	40.00	22.54	Horizontal
4	588.308	31.36	-7.02	24.34	PK	46.00	21.66	Horizontal
5	715.505	30.96	-6.11	24.85	PK	46.00	21.15	Horizontal
6	833.964	31.71	-4.82	26.89	PK	46.00	19.11	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.

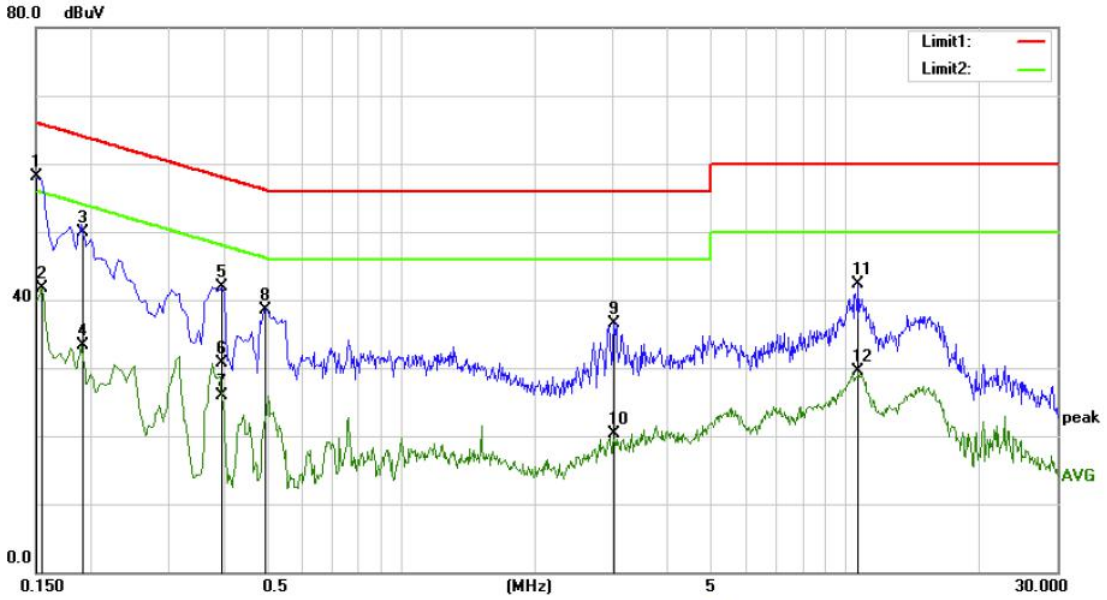
7.6.4 Test Procedure

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

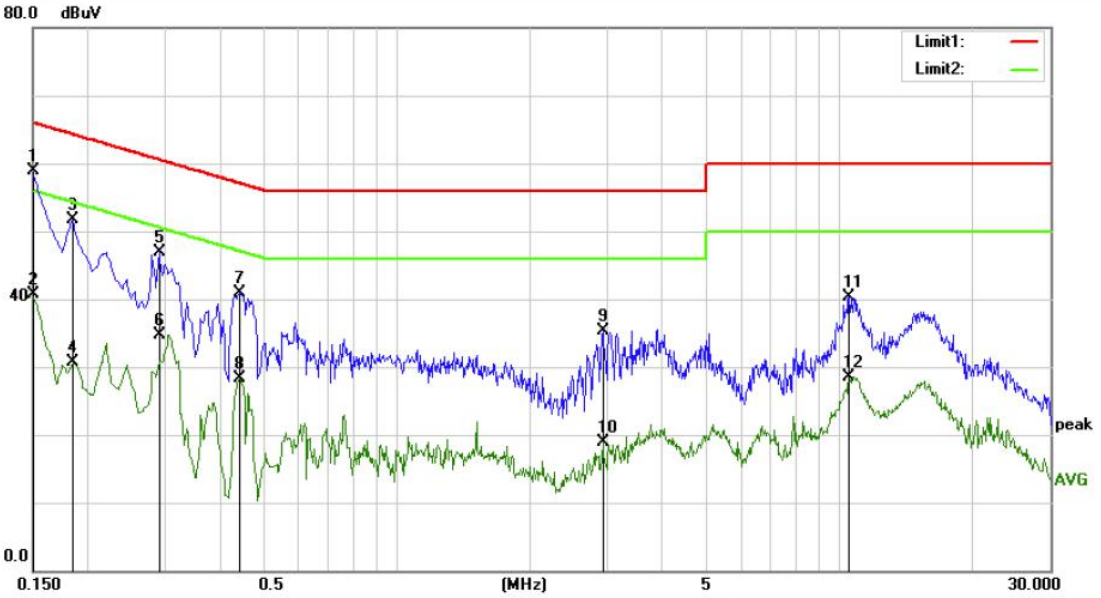
Pass

Temperature :	21.9℃	ATM Pressure:	1011 mbar
Humidity :	58 %	Test Engineer:	CSL



Site Conduction 2# Phase: *L1* Temperature: 25.1

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1500	47.40	10.67	58.07	66.00	-7.93	QP	
2		0.1550	31.03	10.67	41.70	55.73	-14.03	AVG	
3		0.1914	39.17	10.64	49.81	63.98	-14.17	QP	
4		0.1914	22.70	10.64	33.34	53.98	-20.64	AVG	
5		0.3950	31.33	10.66	41.99	57.96	-15.97	QP	
6		0.3950	19.98	10.66	30.64	47.96	-17.32	AVG	
7		0.3950	15.30	10.66	25.96	47.96	-22.00	AVG	
8		0.4950	27.82	10.66	38.48	56.08	-17.60	QP	
9		3.0100	26.04	10.54	36.58	56.00	-19.42	QP	
10		3.0100	9.80	10.54	20.34	46.00	-25.66	AVG	
11		10.6800	31.75	10.60	42.35	60.00	-17.65	QP	
12		10.6800	18.91	10.60	29.51	50.00	-20.49	AVG	



Site Conduction 2# Phase: *N* Temperature: 25.1

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1500	48.16	10.67	58.83	66.00	-7.17	QP	
2		0.1500	30.12	10.67	40.79	56.00	-15.21	AVG	
3		0.1850	40.96	10.65	51.61	64.26	-12.65	QP	
4		0.1850	20.01	10.65	30.66	54.26	-23.60	AVG	
5		0.2900	36.35	10.65	47.00	60.52	-13.52	QP	
6		0.2900	24.01	10.65	34.66	50.52	-15.86	AVG	
7		0.4400	30.24	10.65	40.89	57.06	-16.17	QP	
8		0.4400	17.65	10.65	28.30	47.06	-18.76	AVG	
9		2.9250	24.69	10.55	35.24	56.00	-20.76	QP	
10		2.9250	8.30	10.55	18.85	46.00	-27.15	AVG	
11		10.5550	29.71	10.60	40.31	60.00	-19.69	QP	
12		10.5550	17.87	10.60	28.47	50.00	-21.53	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

PASS

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

The EUT integrated antenna, antenna1 gain is 2.9 dBi, antenna2 gain is 2.65 dBi.

☐ 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 ---

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