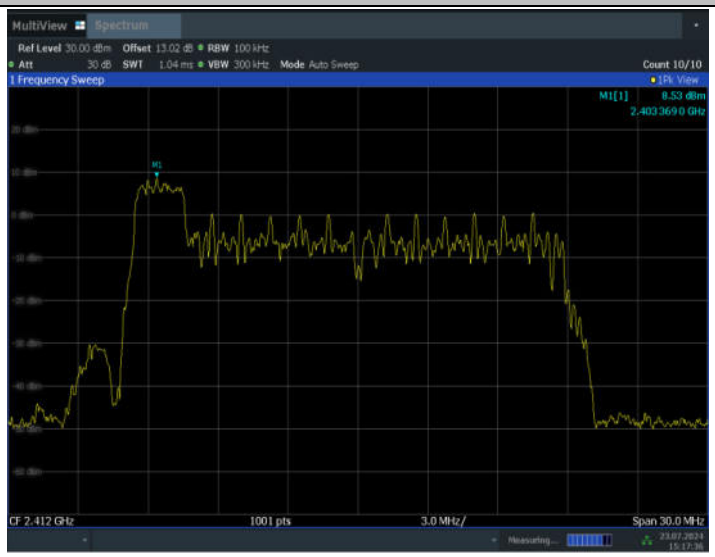
11ax-RU

TestMode	Antenna	Frequency[MHz]	Ru Size	Ru Index	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11AX20SISO	Ant2	2412	26Tone	RU0	Reference	8.53	8.53	---	PASS
				RU0	30~1000	8.53	-56.35	≤-11.47	PASS
				RU0	1000~26500	8.53	-43.20	≤-11.47	PASS
				RU8	Reference	8.42	8.42	---	PASS
				RU8	30~1000	8.42	-55.87	≤-11.58	PASS
				RU8	1000~26500	8.42	-43.85	≤-11.58	PASS
			52Tone	RU37	Reference	5.37	5.37	---	PASS
				RU37	30~1000	5.37	-55.99	≤-14.63	PASS
				RU37	1000~26500	5.37	-44.17	≤-14.63	PASS
				RU40	Reference	5.77	5.77	---	PASS
				RU40	30~1000	5.77	-56.68	≤-14.23	PASS
				RU40	1000~26500	5.77	-40.26	≤-14.23	PASS
			106Tone	RU53	Reference	4.69	4.69	---	PASS
				RU53	30~1000	4.69	-56.17	≤-15.31	PASS
				RU53	1000~26500	4.69	-43.67	≤-15.31	PASS
				RU54	Reference	4.22	4.22	---	PASS
				RU54	30~1000	4.22	-46.88	≤-15.78	PASS
				RU54	1000~26500	4.22	-44.05	≤-15.78	PASS
		2437	26Tone	RU0	Reference	10.41	10.41	---	PASS
				RU0	30~1000	10.41	-56.62	≤-9.59	PASS
				RU0	1000~26500	10.41	-41.98	≤-9.59	PASS
				RU8	Reference	8.72	8.72	---	PASS
				RU8	30~1000	8.72	-56.66	≤-11.28	PASS
				RU8	1000~26500	8.72	-41.98	≤-11.28	PASS

			52Tone	RU37	Reference	4.77	4.77	---	PASS
				RU37	30~1000	4.77	-57.21	≤-15.23	PASS
				RU37	1000~26500	4.77	-37.05	≤-15.23	PASS
				RU40	Reference	5.51	5.51	---	PASS
				RU40	30~1000	5.51	-56.59	≤-14.49	PASS
				RU40	1000~26500	5.51	-35.42	≤-14.49	PASS
			106Tone	RU53	Reference	4.41	4.41	---	PASS
				RU53	30~1000	4.41	-56.75	≤-15.59	PASS
				RU53	1000~26500	4.41	-37.95	≤-15.59	PASS
				RU54	Reference	3.60	3.60	---	PASS
				RU54	30~1000	3.60	-56.38	≤-16.4	PASS
				RU54	1000~26500	3.60	-44.60	≤-16.4	PASS
		2462	26Tone	RU0	Reference	8.63	8.63	---	PASS
				RU0	30~1000	8.63	-56.60	≤-11.37	PASS
				RU0	1000~26500	8.63	-44.13	≤-11.37	PASS
				RU8	Reference	8.07	8.07	---	PASS
				RU8	30~1000	8.07	-56.31	≤-11.93	PASS
				RU8	1000~26500	8.07	-40.38	≤-11.93	PASS
			52Tone	RU37	Reference	5.77	5.77	---	PASS
				RU37	30~1000	5.77	-57.14	≤-14.23	PASS
				RU37	1000~26500	5.77	-43.71	≤-14.23	PASS
				RU40	Reference	5.51	5.51	---	PASS
				RU40	30~1000	5.51	-56.99	≤-14.49	PASS
				RU40	1000~26500	5.51	-44.19	≤-14.49	PASS
			106Tone	RU53	Reference	4.65	4.65	---	PASS
				RU53	30~1000	4.65	-55.83	≤-15.35	PASS
				RU53	1000~26500	4.65	-43.55	≤-15.35	PASS
				RU54	Reference	4.37	4.37	---	PASS
				RU54	30~1000	4.37	-56.81	≤-15.63	PASS
				RU54	1000~26500	4.37	-41.49	≤-15.63	PASS

11AX20SISO_Ant2_2412_26Tone_RU0_0~Reference
 15:17:36 23.07.2024
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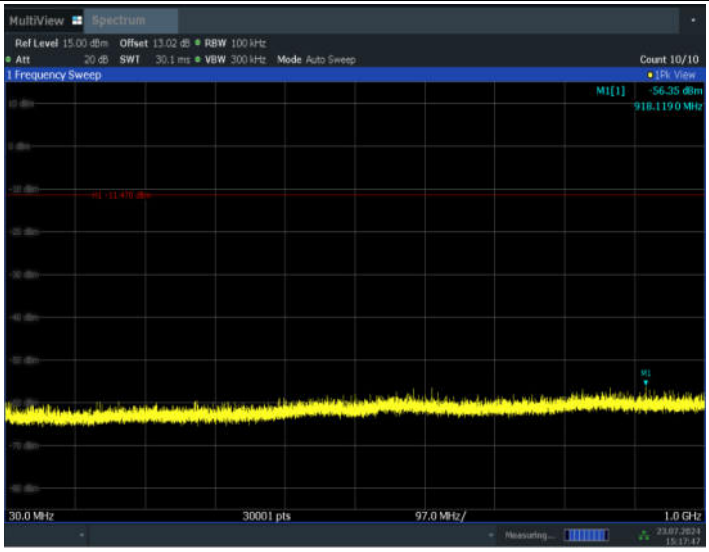 15:17:48 23.07.2024
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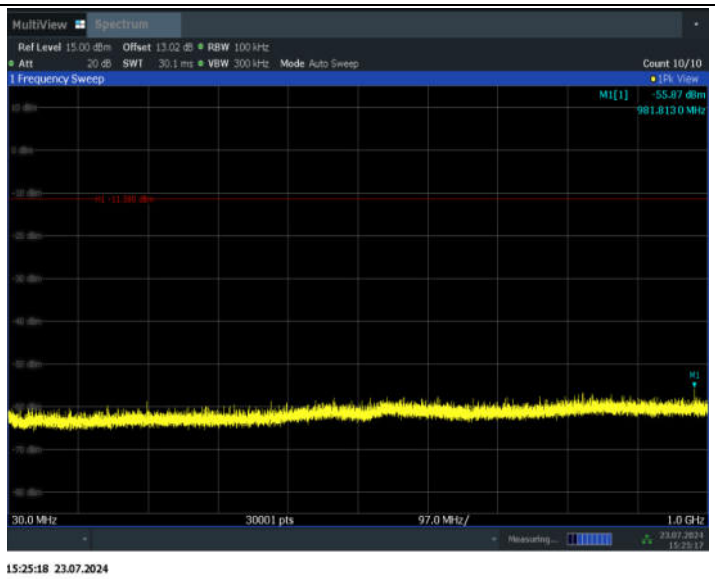
11AX20SISO_Ant2_2412_26Tone_RU8_30~1000



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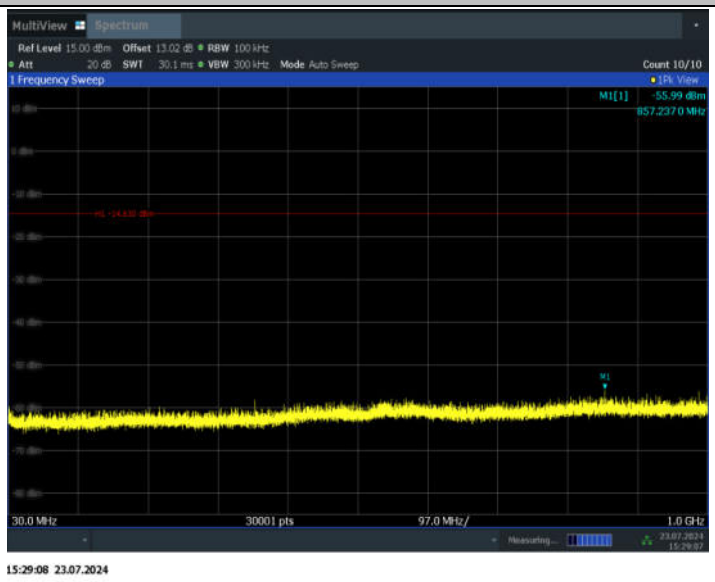
11AX20SISO_Ant2_2412_52Tone_RU37_30~1000



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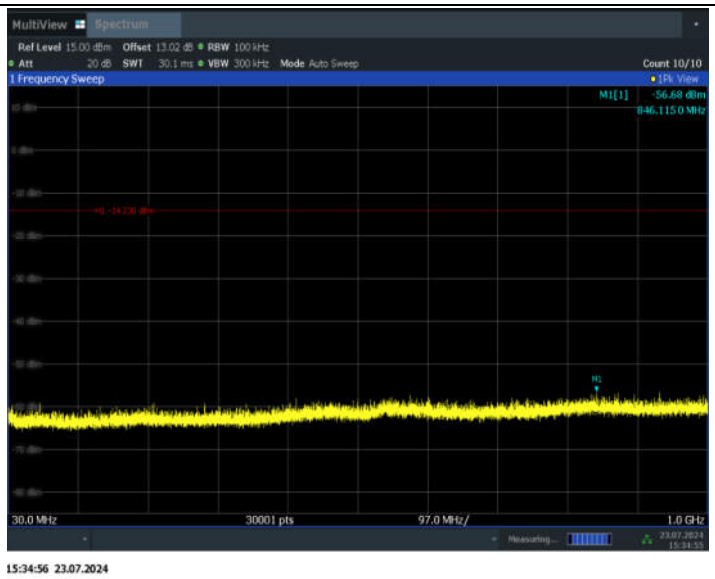
11AX20SISO_Ant2_2412_52Tone_RU40_30~1000



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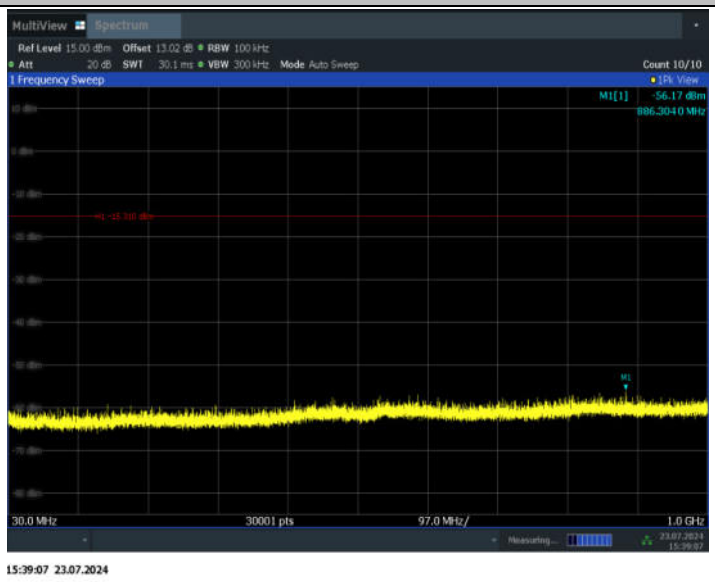
11AX20SISO_Ant2_2412_106Tone_RU53_30~1000



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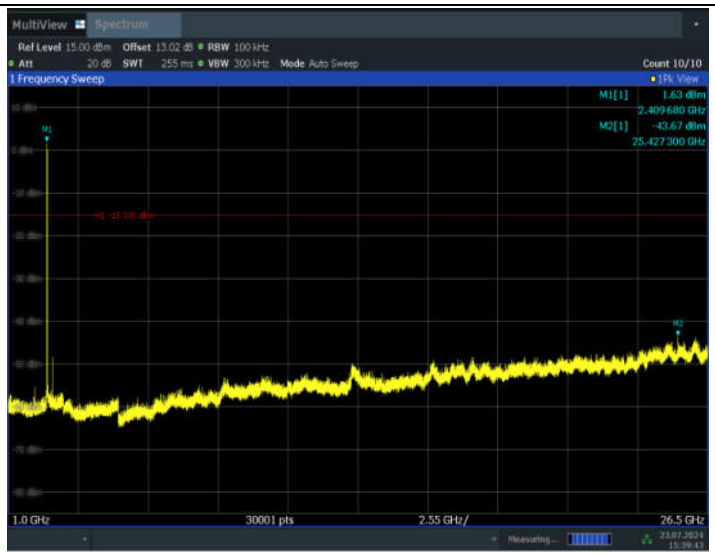

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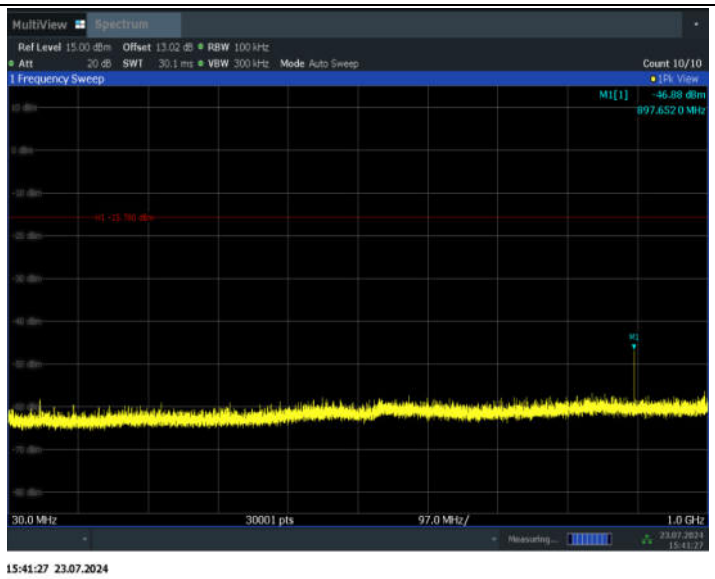
11AX20SISO_Ant2_2412_106Tone_RU54_30~1000



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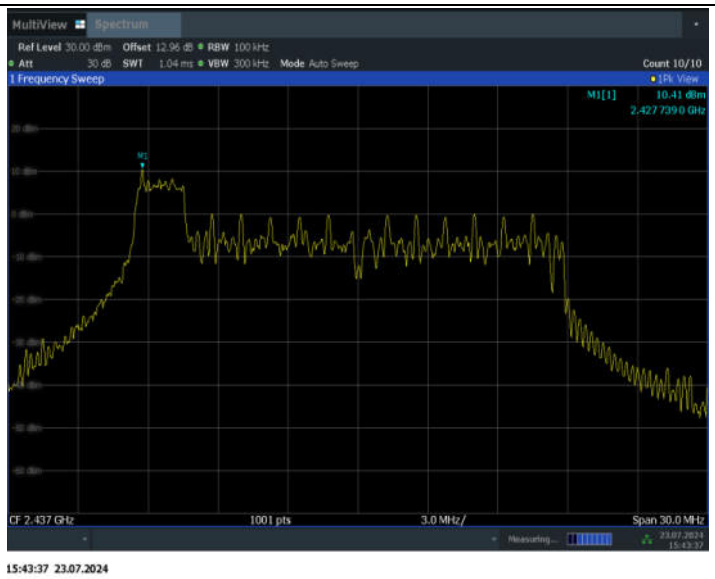
11AX20SISO_Ant2_2437_26Tone_RU0_0~Reference



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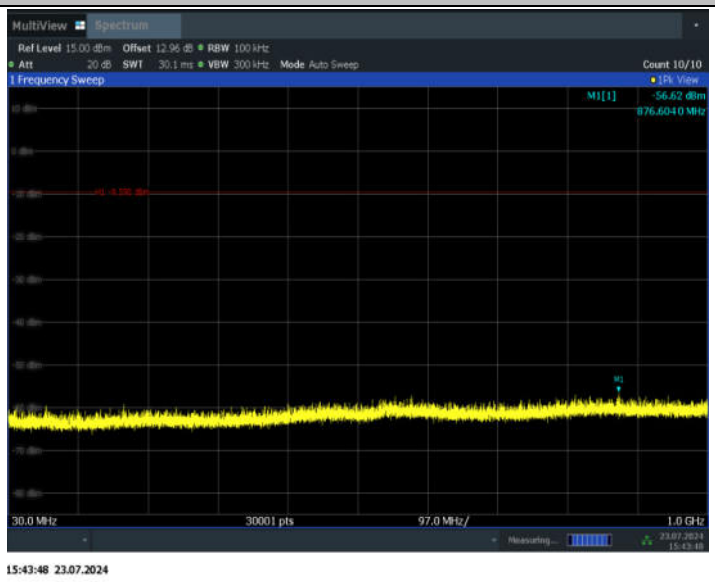

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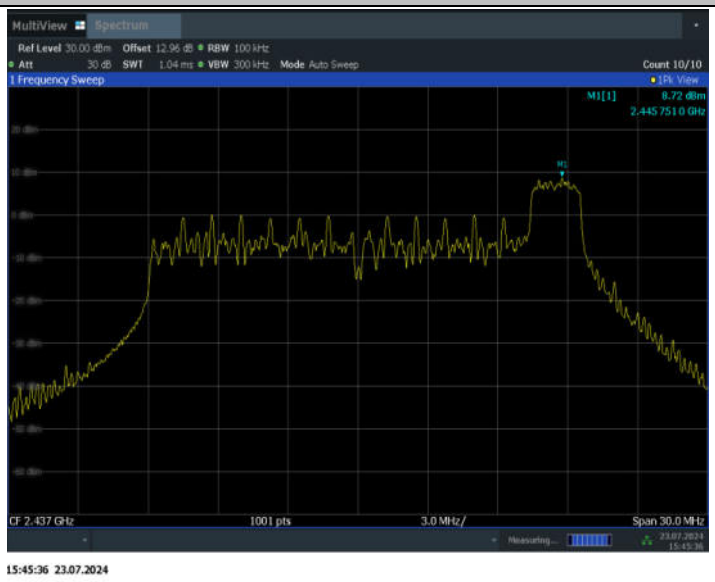
11AX20SISO_Ant2_2437_26Tone_RU8_0~Reference



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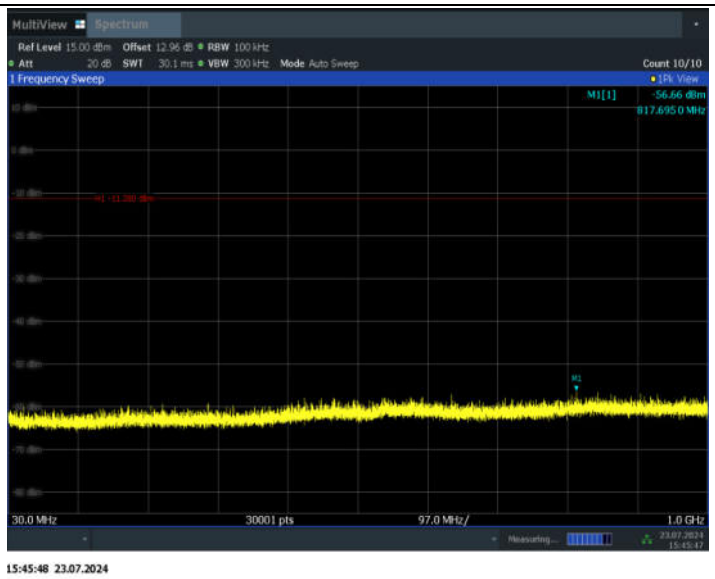
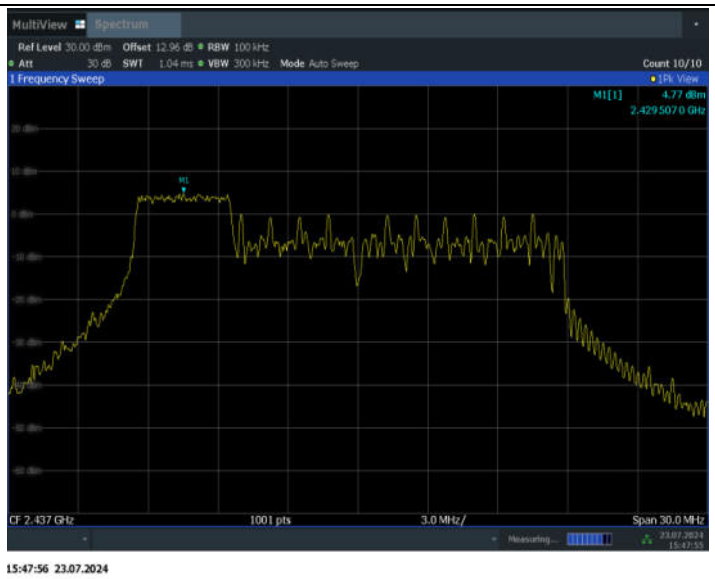


11AX20SISO_Ant2_2437_26Tone_RU8_1000~26500

11AX20SISO_Ant2_2437_52Tone_RU37_0~Reference



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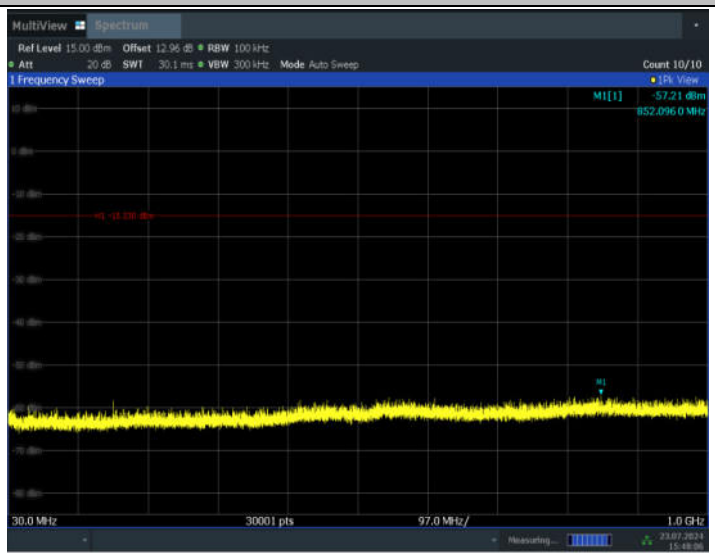

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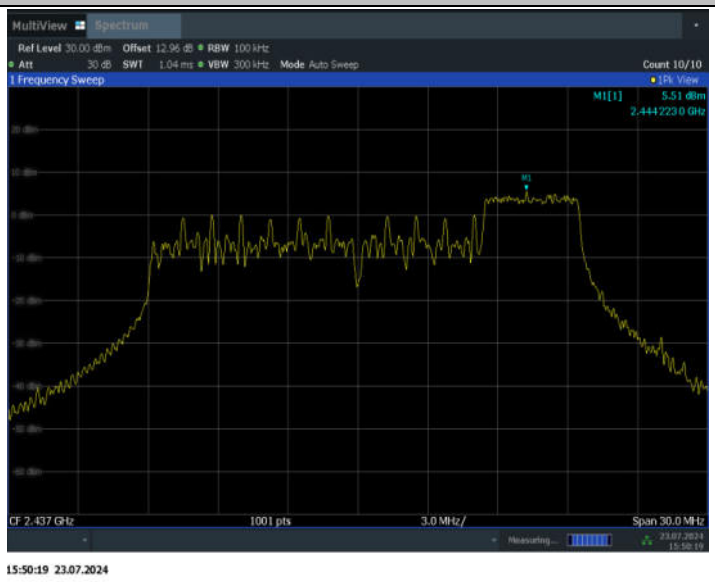

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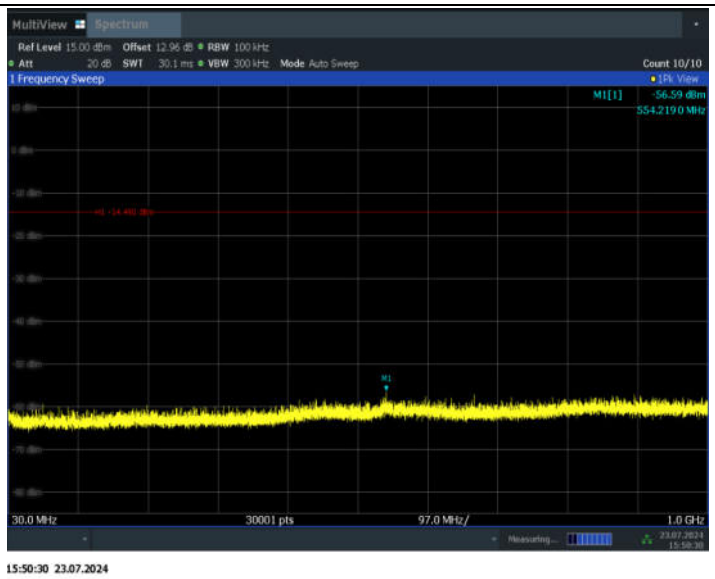

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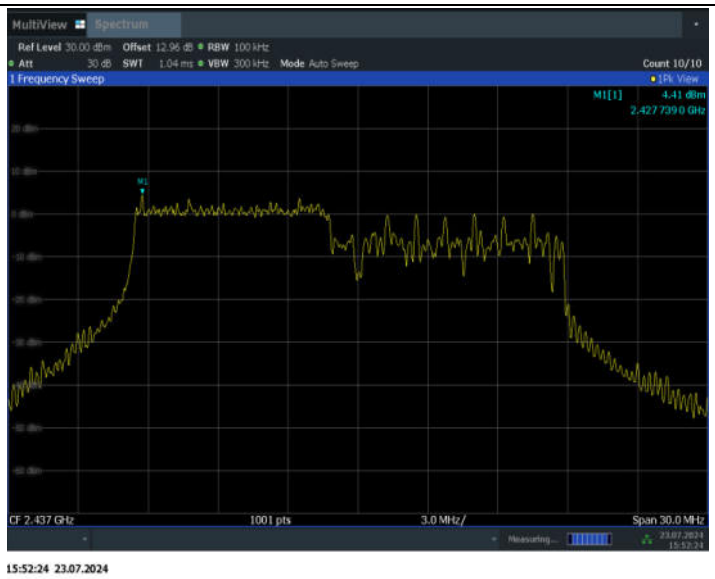

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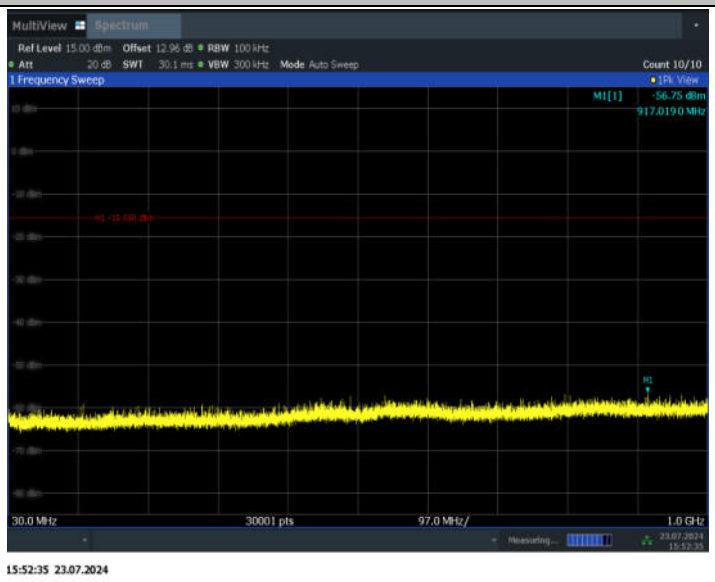

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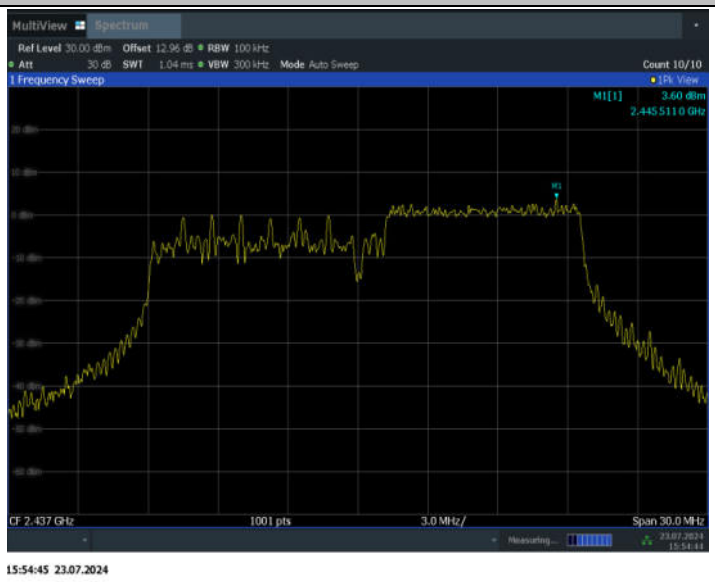
11AX20SISO_Ant2_2437_106Tone_RU54_0~Reference



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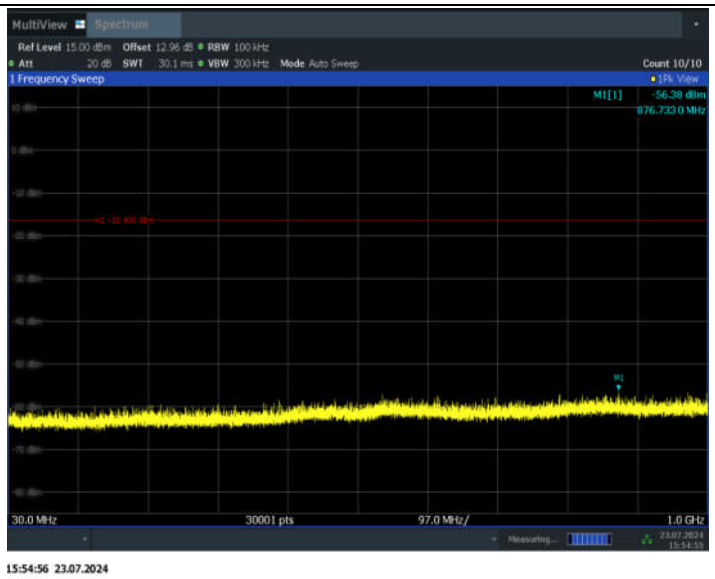
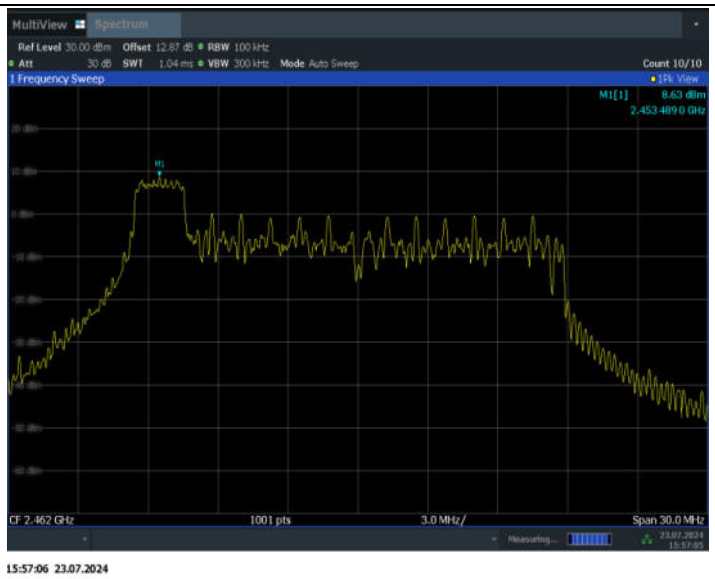


11AX20SISO_Ant2_2437_106Tone_RU54_1000~26500

11AX20SISO_Ant2_2462_26Tone_RU0_0~Reference



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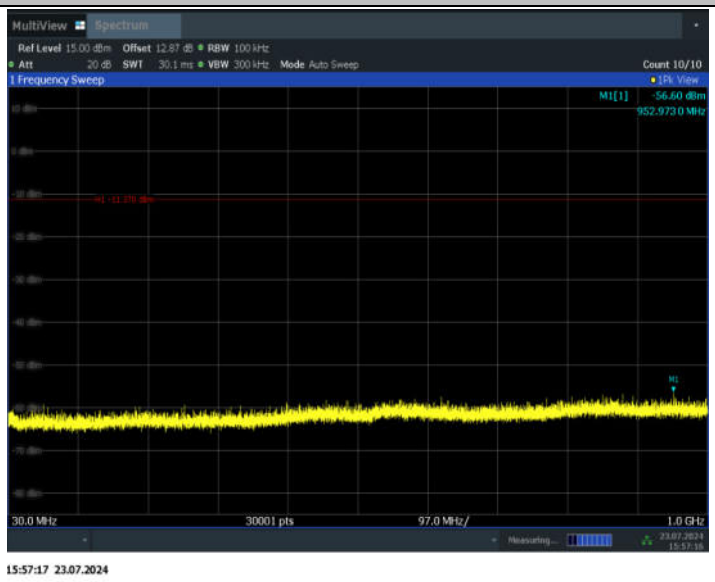

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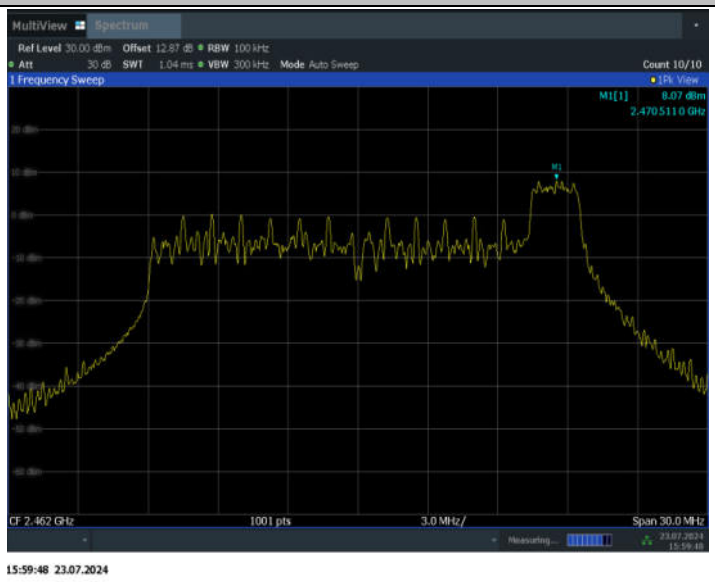
11AX20SISO_Ant2_2462_26Tone_RU8_0~Reference



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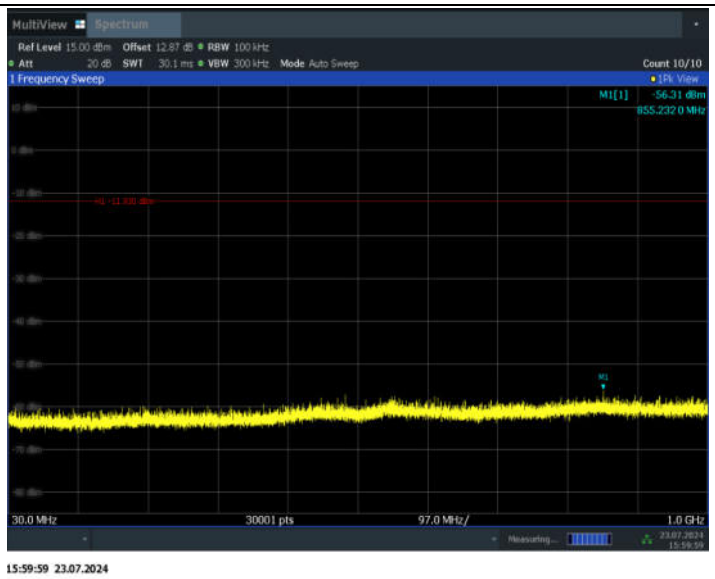

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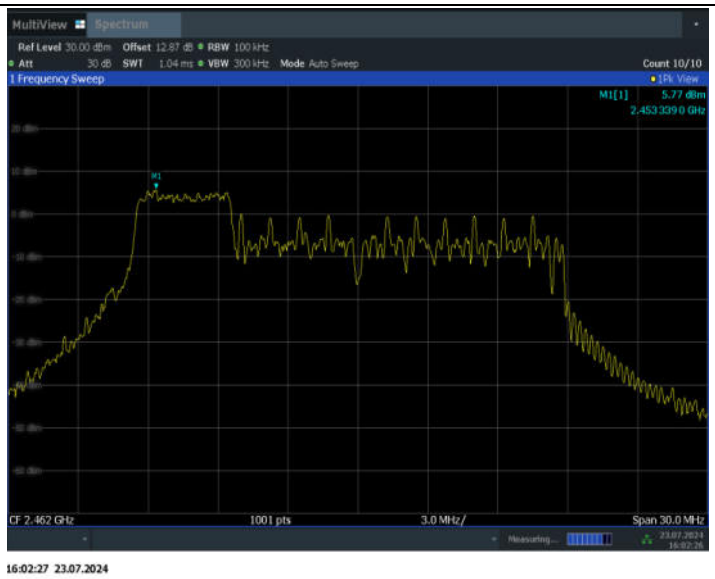
11AX20SISO_Ant2_2462_52Tone_RU37_0~Reference



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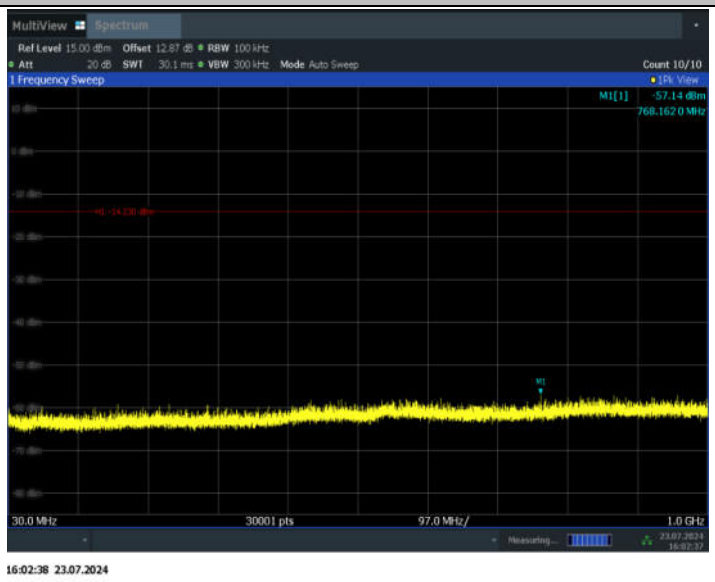
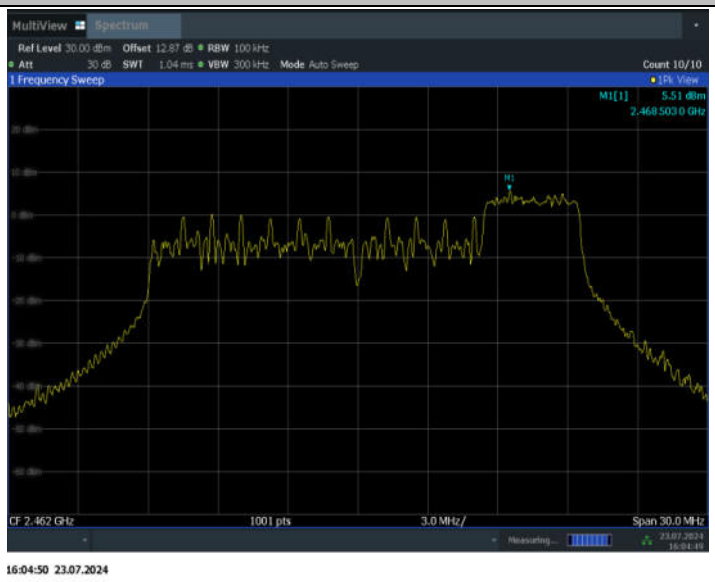


11AX20SISO_Ant2_2462_52Tone_RU37_1000~26500

11AX20SISO_Ant2_2462_52Tone_RU40_0~Reference



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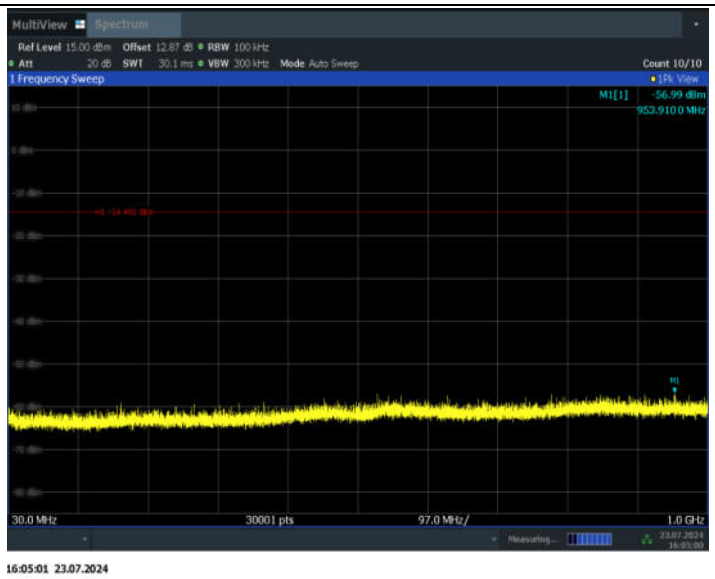

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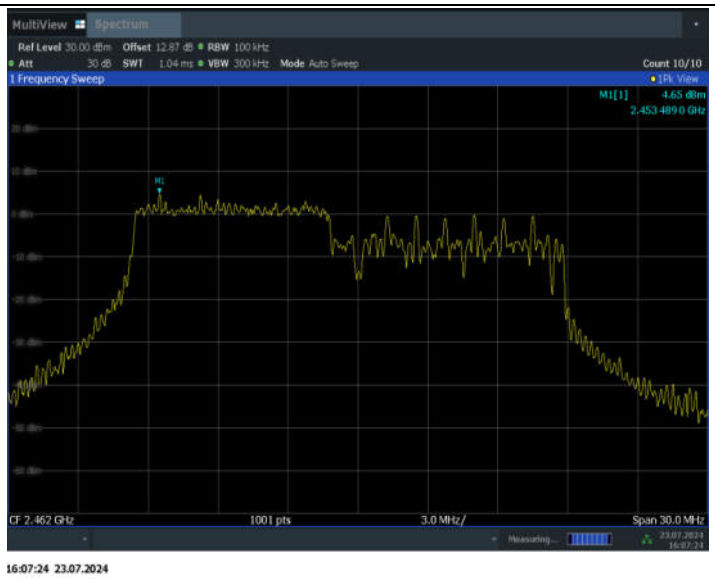
11AX20SISO_Ant2_2462_106Tone_RU53_0~Reference



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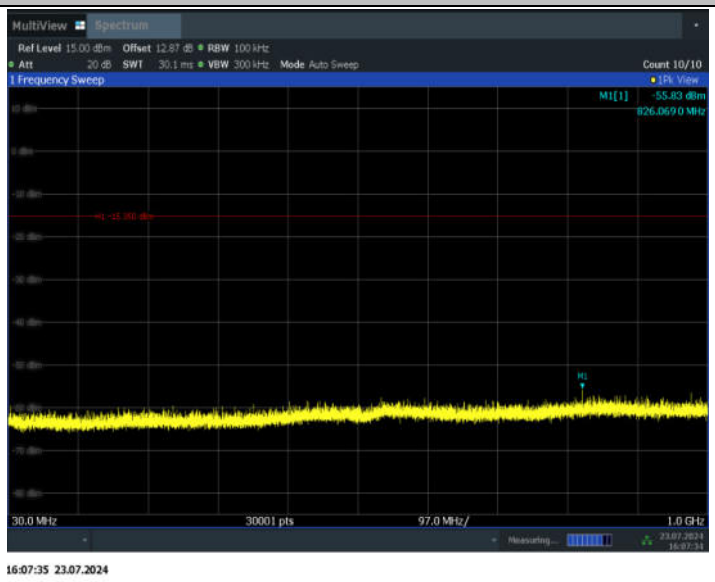

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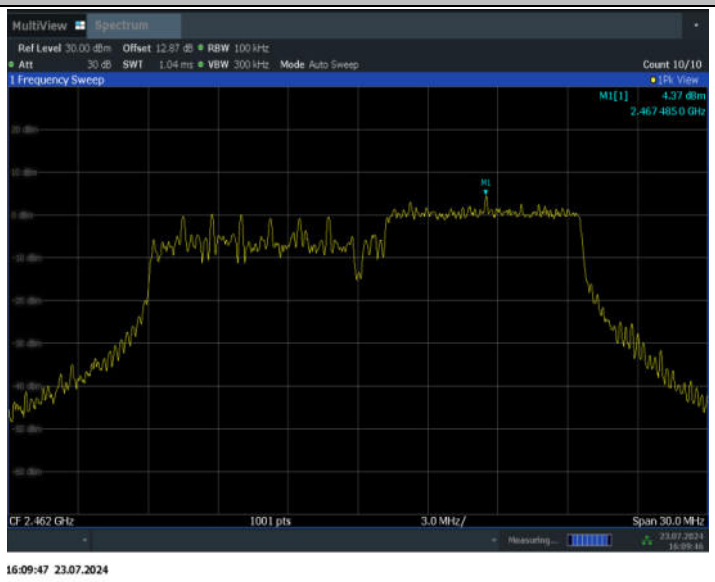

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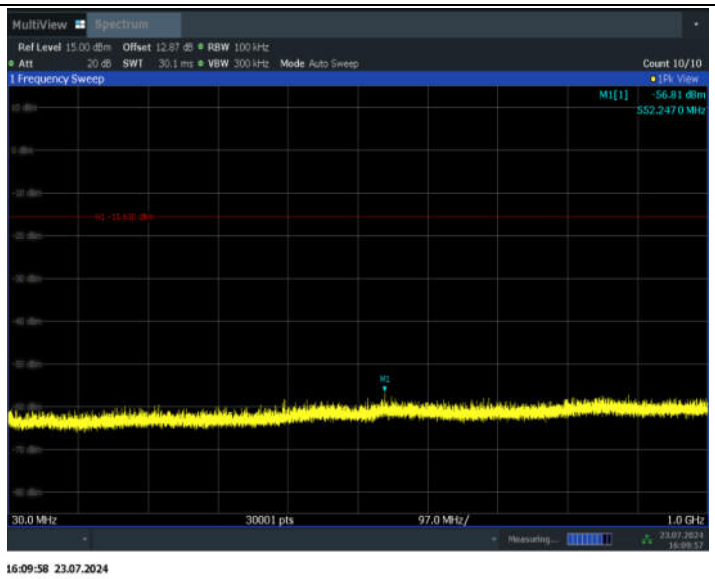


11AX20SISO_Ant2_2462_106Tone_RU54_1000~26500

Conclusion: Pass

A.7. Radiated Unwanted Emission

Limits

Measurement Limit

Standard	Limit
FCC 47 CFR Part 15.247, 15.205, 15.209	20dB below peak output power

In addition, 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)).

Limit in restricted band

Frequency (MHz)	Field strength(μV/m)	Measurement distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

Frequency of emission (MHz)	Field strength (uV/m)	Field strength (dBuV/m)	Measurement distance (m)
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Note: When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor.

Test setup

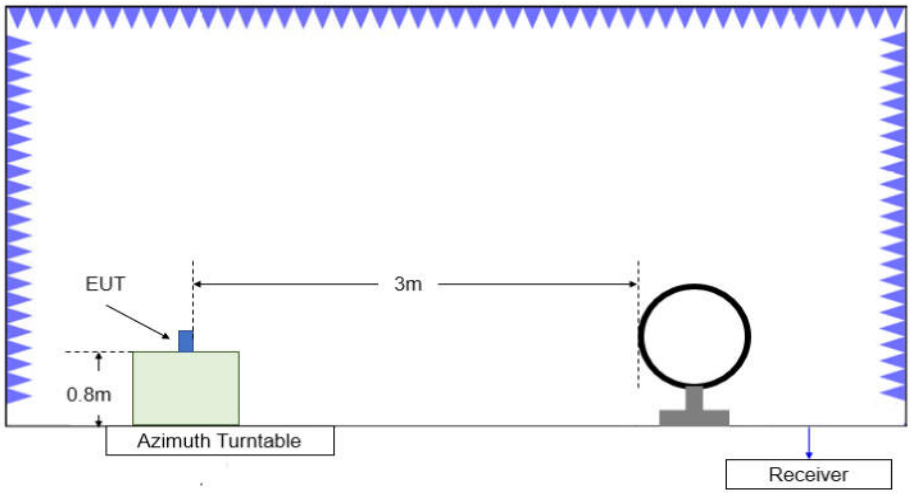


Figure A.2.1. Test Site Diagram (9kHz-30MHz)

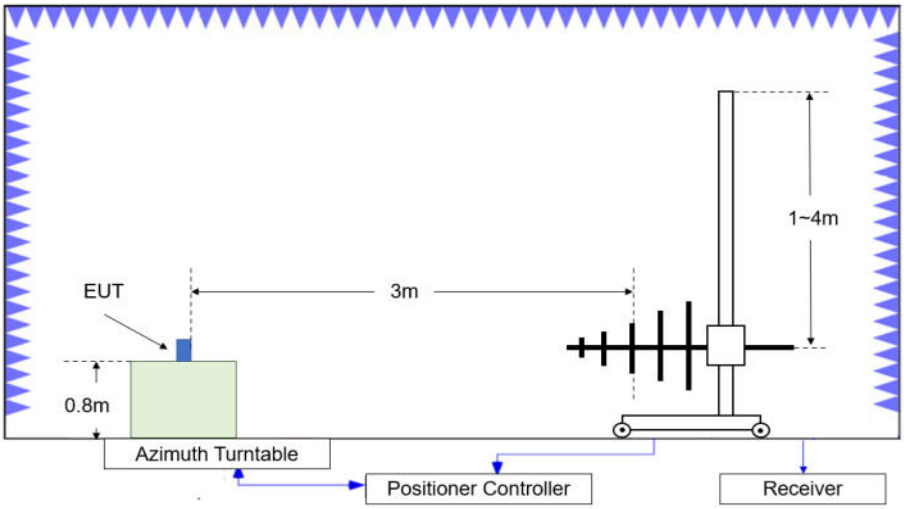


Figure A.2.2. Test Site Diagram (30MHz-1GHz)

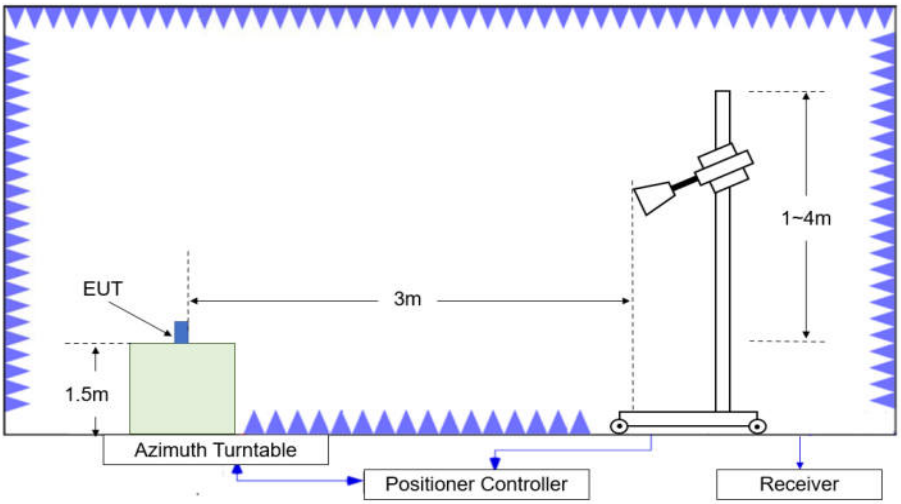


Figure A.2.3. Test Site Diagram (1GHz-40GHz)

Test Procedures

Radiated unwanted emissions from the EUT were measured according to ANSI C63.10.

Test setting

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	100kHz/300kHz	5
1000-3000	1MHz/3MHz	15
3000-18000	1MHz/3MHz	40
18000-26500	1MHz/3MHz	20

Sample Calculation

A "reference path loss" is established and the A_{Rpl} is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

P_{Mea} is the field strength recorded from the instrument.

The measurement results are obtained as described below:
Result=P_{Mea}+$A_{Rpl=}$ P_{Mea}+Cable Loss+Antenna Factor

Test note

1. The EUT is operating at its maximum duty cycle and its maximum power control level.
2. Investigation has been done on all modes and modulations/data rates. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.
3. Spurious emissions for all channels were investigated and almost the same below 1GHz. According to FCC 47 CFR §15.31, emission levels are not report much lower than the limit by over 20dB
4. Measurement frequencies were performed from 9 kHz to the 10th harmonic of highest fundamental frequency or 40GHz, whichever is lower.
5. No spurious emissions were detected within 20dBof the limit below 30MHz. OFS and semi-chamber comparison testing had been performed and the result came out very similar. (KDB 414788)
6.The low/mid/high channels of all working mode with different bandwidths were all tested, only the worst ones were reported.

Test Result

Peak

802.11b

Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17857.000	50.64	-29.40	42.40	37.64	74.00	23.36	H
13573.500	47.21	-31.30	40.60	37.91	74.00	26.79	V
12756.500	43.66	-31.80	39.50	35.96	74.00	30.34	V
9404.500	42.14	-34.10	38.10	38.14	74.00	31.86	V
7207.500	40.31	-35.40	37.40	38.31	74.00	33.69	V
2355.000	54.48	-19.60	27.30	46.78	74.00	19.52	V

Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17402.000	50.70	-29.50	42.10	38.10	74.00	23.30	V
13729.500	46.88	-31.00	40.80	37.08	74.00	27.12	V
12659.000	44.02	-31.80	39.30	36.52	74.00	29.98	H
8721.000	42.11	-34.80	37.80	39.11	74.00	31.89	H
7309.500	40.57	-35.40	37.50	38.47	74.00	33.43	H
4897.000	36.58	-37.50	32.80	41.28	74.00	37.42	V

Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17527.500	50.84	-29.20	42.20	37.84	74.00	23.16	H
13599.500	47.21	-31.30	40.60	37.91	74.00	26.79	V
12997.000	44.46	-31.90	39.80	36.56	74.00	29.54	H
9770.500	41.89	-33.80	38.00	37.69	74.00	32.11	V
7314.500	41.36	-35.40	37.50	39.26	74.00	32.64	H
2486.500	54.20	-19.70	27.90	46.00	74.00	19.80	H

802.11g

Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17957.500	51.66	-29.40	42.40	38.66	74.00	22.34	H
13787.000	47.62	-30.90	40.90	37.62	74.00	26.38	V
12669.000	44.24	-31.80	39.30	36.74	74.00	29.76	V
8993.500	42.47	-34.70	37.60	39.57	74.00	31.53	V
7192.000	41.07	-35.40	37.40	39.07	74.00	32.93	H
2390.000	63.17	-19.80	27.50	55.47	74.00	10.83	V

Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17987.500	52.26	-29.40	42.40	39.26	74.00	21.74	H
13736.000	46.94	-31.00	40.80	37.14	74.00	27.06	V
11881.000	44.04	-32.80	38.80	37.94	74.00	29.96	H
9397.500	42.21	-34.10	38.10	38.21	74.00	31.79	V
7203.000	41.49	-35.40	37.40	39.49	74.00	32.51	H
4612.000	36.73	-37.70	32.30	42.13	74.00	37.27	H

Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17611.000	51.15	-29.60	42.30	38.45	74.00	22.85	V
13866.500	47.48	-31.10	40.90	37.68	74.00	26.52	V
12778.000	44.63	-31.50	39.60	36.53	74.00	29.37	V
9512.500	42.06	-33.80	38.00	37.86	74.00	31.94	V
7941.000	41.25	-35.40	37.10	39.55	74.00	32.75	H
2498.100	57.41	-19.70	27.90	49.21	74.00	16.59	H

802.11n-HT20

Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17953.000	51.03	-29.40	42.40	38.03	74.00	22.97	H
14078.000	47.03	-30.20	40.50	36.73	74.00	26.97	H
12620.000	44.20	-32.20	39.20	37.20	74.00	29.80	V
8458.000	42.42	-35.10	37.40	40.12	74.00	31.58	V
7315.500	42.10	-35.40	37.50	40.00	74.00	31.90	H
2390.000	66.58	-19.80	27.50	58.88	74.00	7.42	V

Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17598.000	50.63	-29.60	42.30	37.93	74.00	23.37	V
13703.500	47.00	-31.00	40.70	37.30	74.00	27.00	H
12932.500	44.31	-31.40	39.80	36.01	74.00	29.69	V
8975.500	42.97	-34.70	37.60	40.07	74.00	31.03	V
7313.000	41.82	-35.40	37.50	39.72	74.00	32.18	H
4740.000	37.14	-37.80	32.50	42.44	74.00	36.86	V

Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17851.500	50.57	-29.40	42.40	37.57	74.00	23.43	V
13761.000	47.42	-31.00	40.80	37.62	74.00	26.58	V
11284.000	44.17	-33.20	38.90	38.57	74.00	29.83	V
8999.500	41.94	-34.70	37.60	39.04	74.00	32.06	V
7533.000	41.40	-35.50	37.40	39.50	74.00	32.60	V
2491.800	57.34	-19.70	27.90	49.14	74.00	16.66	V

802.11ax-HT20

Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17497.000	51.02	-29.20	42.20	38.02	74.00	22.98	H
13743.000	47.10	-31.00	40.80	37.30	74.00	26.90	V
12605.500	44.17	-32.20	39.20	37.17	74.00	29.83	H
9509.500	42.45	-33.80	38.00	38.25	74.00	31.55	H
7022.000	41.56	-35.50	36.70	40.36	74.00	32.44	H
2389.700	67.67	-19.80	27.50	59.97	74.00	6.33	V

Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17607.500	51.05	-29.60	42.30	38.35	74.00	22.95	V
13631.500	47.37	-31.30	40.70	37.97	74.00	26.63	H
12844.500	44.26	-31.90	39.70	36.56	74.00	29.74	H
9489.500	42.60	-34.60	38.10	39.10	74.00	31.40	H
7217.000	41.13	-35.40	37.40	39.13	74.00	32.87	V
4905.500	36.99	-37.60	32.90	41.69	74.00	37.01	H

Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17417.000	50.72	-29.50	42.10	38.12	74.00	23.28	V
13767.000	47.40	-30.90	40.90	37.40	74.00	26.60	V
12766.500	44.23	-31.80	39.50	36.53	74.00	29.77	H
9504.500	43.03	-34.60	38.10	39.53	74.00	30.97	H
7718.500	41.60	-35.90	37.10	40.40	74.00	32.40	V
2486.100	57.32	-19.70	27.90	49.12	74.00	16.68	V

Average

802.11b

Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17602.500	41.21	-29.60	42.30	28.51	54.00	12.79	H
13759.000	37.34	-31.00	40.80	27.54	54.00	16.66	V
12636.500	34.35	-31.80	39.30	26.85	54.00	19.65	V
9484.500	32.39	-34.60	38.10	28.89	54.00	21.61	H
7301.500	30.87	-35.40	37.50	28.77	54.00	23.13	V
2389.600	41.29	-19.80	27.50	33.59	54.00	12.71	H

Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17596.000	41.62	-29.60	42.30	28.92	54.00	12.38	V
13696.500	37.58	-31.00	40.70	27.88	54.00	16.42	H
12734.000	34.36	-31.80	39.50	26.66	54.00	19.64	V
9502.500	32.17	-34.60	38.10	28.67	54.00	21.83	H
7337.500	31.10	-35.90	37.50	29.50	54.00	22.90	H
4874.000	29.80	-37.50	32.80	34.50	54.00	24.20	V

Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17587.000	41.30	-29.60	42.30	28.60	54.00	12.70	V
13714.500	37.69	-31.00	40.80	27.89	54.00	16.31	H
11884.000	34.56	-32.40	38.80	28.16	54.00	19.44	H
9503.000	32.29	-34.60	38.10	28.79	54.00	21.71	V
7417.000	31.62	-35.10	37.50	29.22	54.00	22.38	V
2485.600	42.56	-19.70	27.90	34.36	54.00	11.44	H

802.11g

Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17593.500	41.15	-29.60	42.30	28.45	54.00	12.85	H
13743.500	38.06	-31.00	40.80	28.26	54.00	15.94	H
12649.500	34.42	-31.80	39.30	26.92	54.00	19.58	H
9499.000	32.51	-34.60	38.10	29.01	54.00	21.49	V
7525.500	31.14	-35.50	37.40	29.24	54.00	22.86	H
2390.000	47.87	-19.80	27.50	40.17	54.00	6.13	V

Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17595.000	41.45	-29.60	42.30	28.75	54.00	12.55	H
14078.500	37.98	-30.20	40.50	27.68	54.00	16.02	H
12650.000	34.28	-31.80	39.30	26.78	54.00	19.72	V
9508.000	32.65	-33.80	38.00	28.45	54.00	21.35	H
7315.000	31.45	-35.40	37.50	29.35	54.00	22.55	V
4952.000	27.42	-37.40	32.90	31.92	54.00	26.58	H

Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17594.500	40.98	-29.60	42.30	28.28	54.00	13.02	V
14162.500	37.23	-30.20	40.40	27.03	54.00	16.77	H
12995.000	34.49	-31.90	39.80	26.59	54.00	19.51	H
9406.000	32.31	-33.60	38.10	27.81	54.00	21.69	H
7308.000	31.24	-35.40	37.50	29.14	54.00	22.76	V
2488.300	45.58	-19.70	27.90	37.38	54.00	8.42	H

802.11n-HT20

Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17606.000	41.30	-29.60	42.30	28.60	54.00	12.70	V
13758.500	37.38	-31.00	40.80	27.58	54.00	16.62	H
12805.500	34.67	-31.50	39.60	26.57	54.00	19.33	V
9197.000	32.52	-34.70	37.90	29.32	54.00	21.48	H
7619.000	31.94	-35.60	37.40	30.14	54.00	22.06	V
2389.700	50.81	-19.80	27.50	43.11	54.00	3.19	V

Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17612.500	41.59	-29.60	42.30	28.89	54.00	12.41	V
13706.500	37.51	-31.00	40.70	27.81	54.00	16.49	V
11919.500	34.42	-32.40	38.80	28.02	54.00	19.58	H
9409.500	32.99	-33.60	38.10	28.49	54.00	21.01	V
7418.500	31.77	-35.10	37.50	29.37	54.00	22.23	V
4771.500	27.62	-37.50	32.50	32.62	54.00	26.38	V

Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17524.000	41.46	-29.20	42.20	28.46	54.00	12.54	V
13718.000	37.70	-31.00	40.80	27.90	54.00	16.30	V
12778.000	34.53	-31.50	39.60	26.43	54.00	19.47	V
9873.500	32.61	-33.90	38.10	28.41	54.00	21.39	V
7504.500	31.55	-35.10	37.50	29.15	54.00	22.45	V
2485.900	45.28	-19.70	27.90	37.08	54.00	8.72	H

802.11ax-HT20

Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17511.500	41.49	-29.20	42.20	28.49	54.00	12.51	V
14080.500	37.54	-30.20	40.50	27.24	54.00	16.46	V
11881.500	34.46	-32.40	38.80	28.06	54.00	19.54	V
9393.500	32.86	-34.10	38.10	28.86	54.00	21.14	V
7511.000	31.90	-35.10	37.50	29.50	54.00	22.10	V
2390.000	49.39	-19.80	27.50	41.69	54.00	4.61	V

Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17987.000	41.56	-29.40	42.40	28.56	54.00	12.44	H
13698.500	37.54	-31.00	40.70	27.84	54.00	16.46	V
12846.500	34.41	-31.90	39.70	26.71	54.00	19.59	H
9394.500	32.50	-34.10	38.10	28.50	54.00	21.50	V
7424.500	31.63	-35.10	37.50	29.23	54.00	22.37	V
4883.500	27.42	-37.50	32.80	32.12	54.00	26.58	V

Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17960.000	41.50	-29.40	42.40	28.50	54.00	12.50	V
13611.500	37.65	-31.30	40.60	28.35	54.00	16.35	V
11877.500	34.60	-32.80	38.80	28.50	54.00	19.40	V
8995.500	32.90	-34.70	37.60	30.00	54.00	21.10	V
7293.500	32.06	-35.40	37.50	29.96	54.00	21.94	V
2486.700	45.48	-19.70	27.90	37.28	54.00	8.52	V

Band edge compliance

802.11b mode

Mode	Channel	Test Results	Conclusion
802.11b	1	Fig.A.6.2.1	**P**
	11	Fig.A.6.2.2	**P**

802.11g mode

Mode	Channel	Test Results	Conclusion
802.11g	1	Fig.A.6.2.3	**P**
	11	Fig.A.6.2.4	**P**

802.11n-HT20 mode

Mode	Channel	Test Results	Conclusion
802.11n (HT20)	1	Fig.A.6.2.5	**P**
	11	Fig.A.6.2.6	**P**

802.11ax-HT20 mode full RU

Mode	Channel	Test Results	Conclusion
802.11ax (HT20)	1	Fig.A.6.2.7	**P**
	11	Fig.A.6.2.8	**P**

802.11ax-HT20 mode partial RU

Mode	Channel	RU Configuration	Test Results	Conclusion
802.11ax (HT20)	1	26RU index 0	Fig.A.6.2.9	**P**
	11	26RU index 8	Fig.A.6.2.10	**P**

Conclusion: Pass

Note:

A "reference path loss" is established and the A_{Rpl} is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

P_{Mea} is the field strength recorded from the instrument.

The measurement results are obtained as described below:

Result=P_{Mea}+$A_{Rpl=}$ P_{Mea}+Cable Loss+Antenna Factor

Test graphs as below:

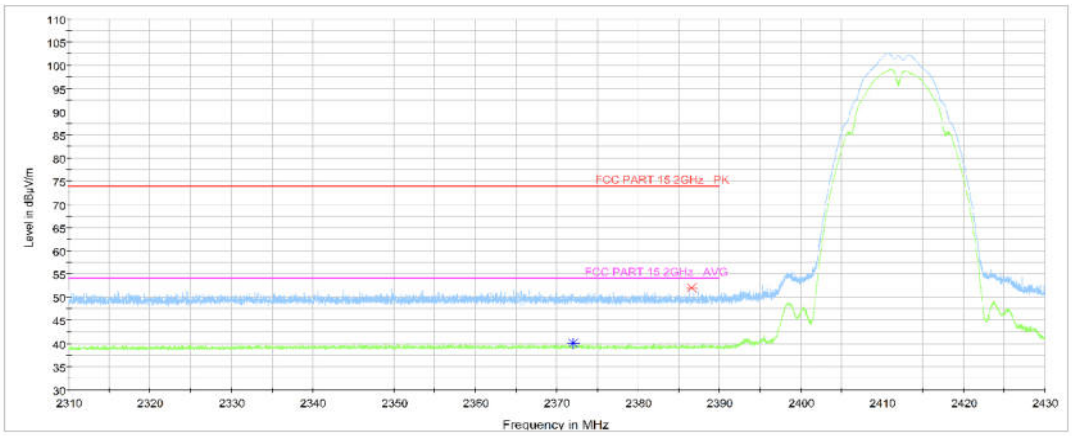


Fig.A.6.2.1 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch1, 2.31 GHz – 2.45GHz

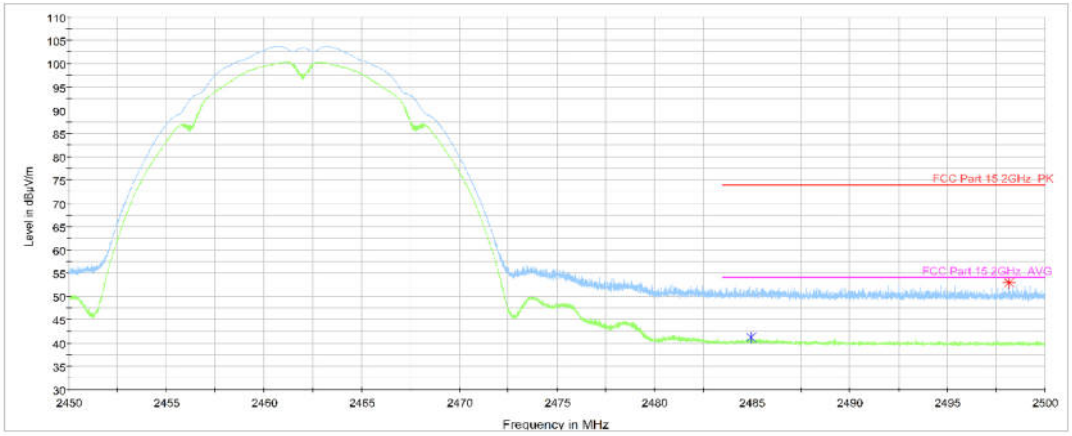


Fig.A.6.2.2 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz

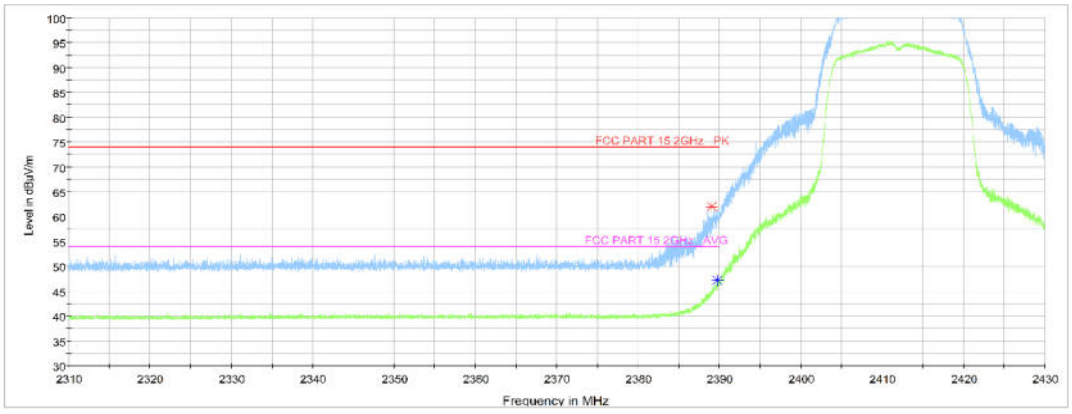


Fig.A.6.2.3 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch1, 2.31 GHz - 2.43GHz

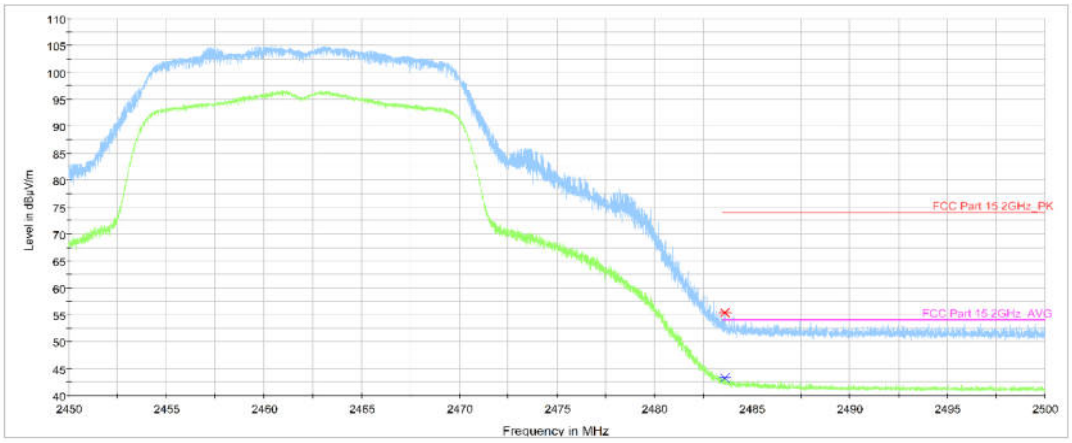


Fig.A.6.2.4 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch11, 2.45 GHz - 2.50GHz

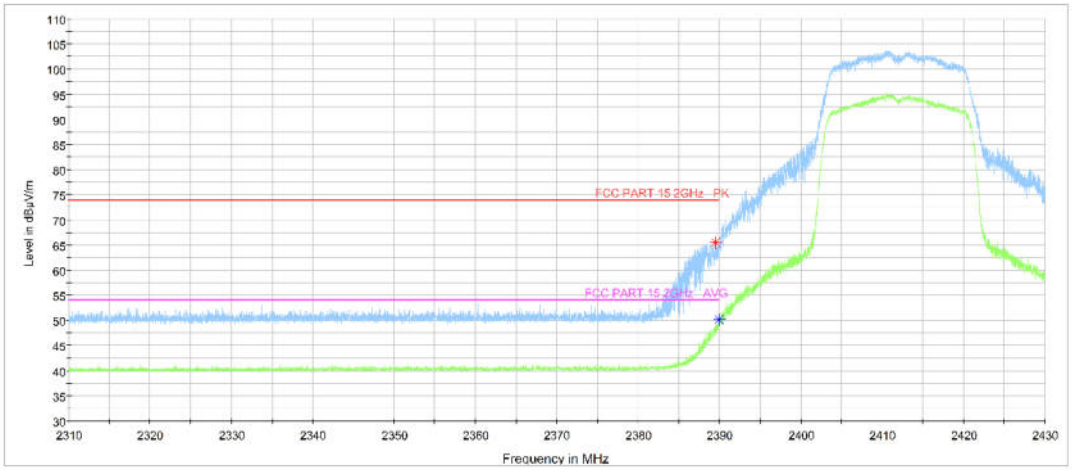


Fig.A.6.2.5 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch1, 2.31 GHz - 2.43GHz

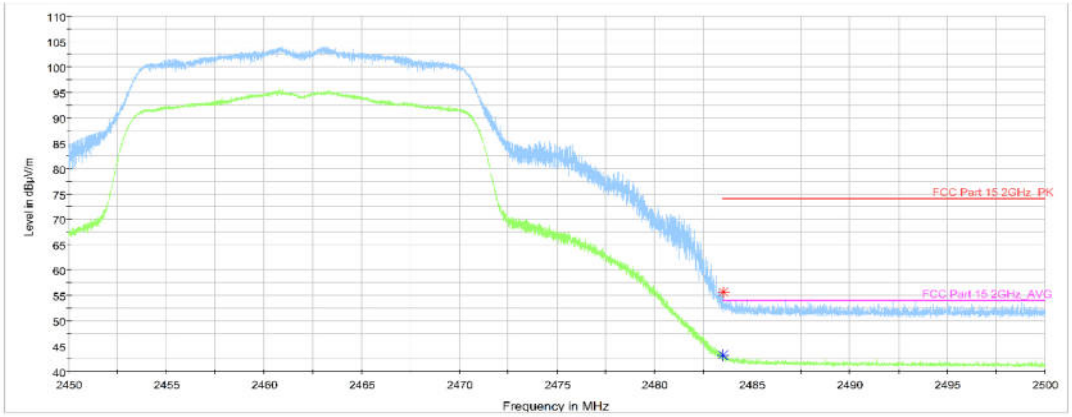


Fig.A.6.2.6 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch11, 2.45 GHz - 2.50GHz

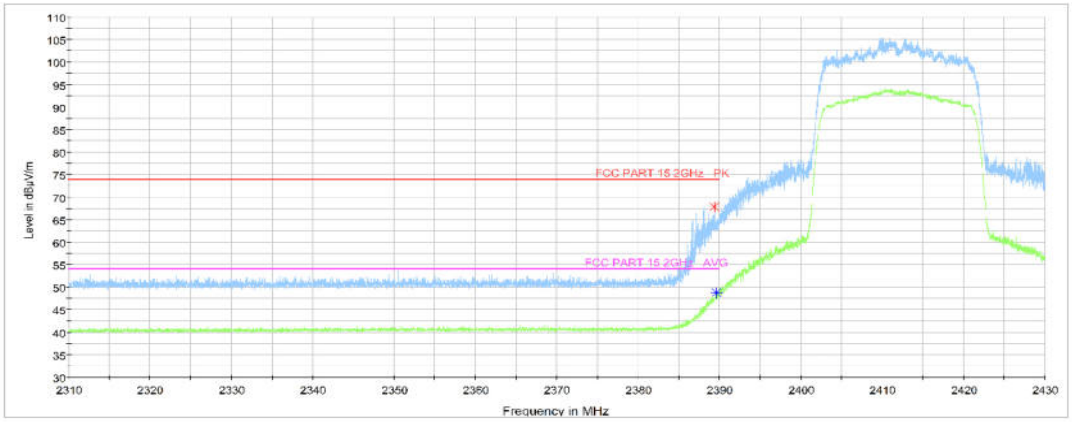


Fig.A.6.2.7 Transmitter Spurious Emission - Radiated (Power): 802.11ax-HT20, ch1, 2.31 GHz - 2.43GHz

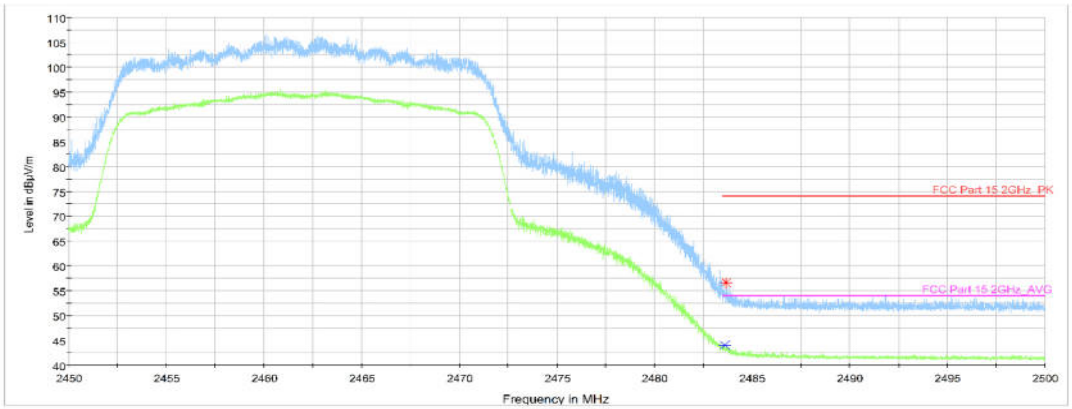


Fig.A.6.2.8 Transmitter Spurious Emission - Radiated (Power): 802.11ax-HT20, ch11, 2.45 GHz - 2.50GHz

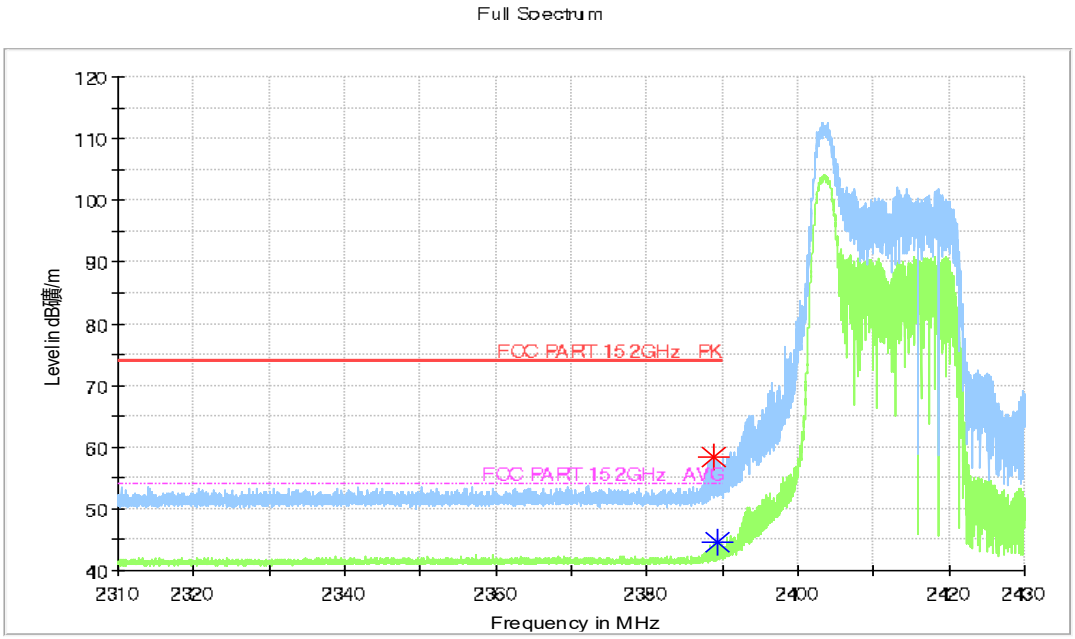


Fig.A.6.2.9 Transmitter Spurious Emission - Radiated (Power): 802.11ax-HT20, ch1, Partial RU, 2.31 GHz - 2.43GHz

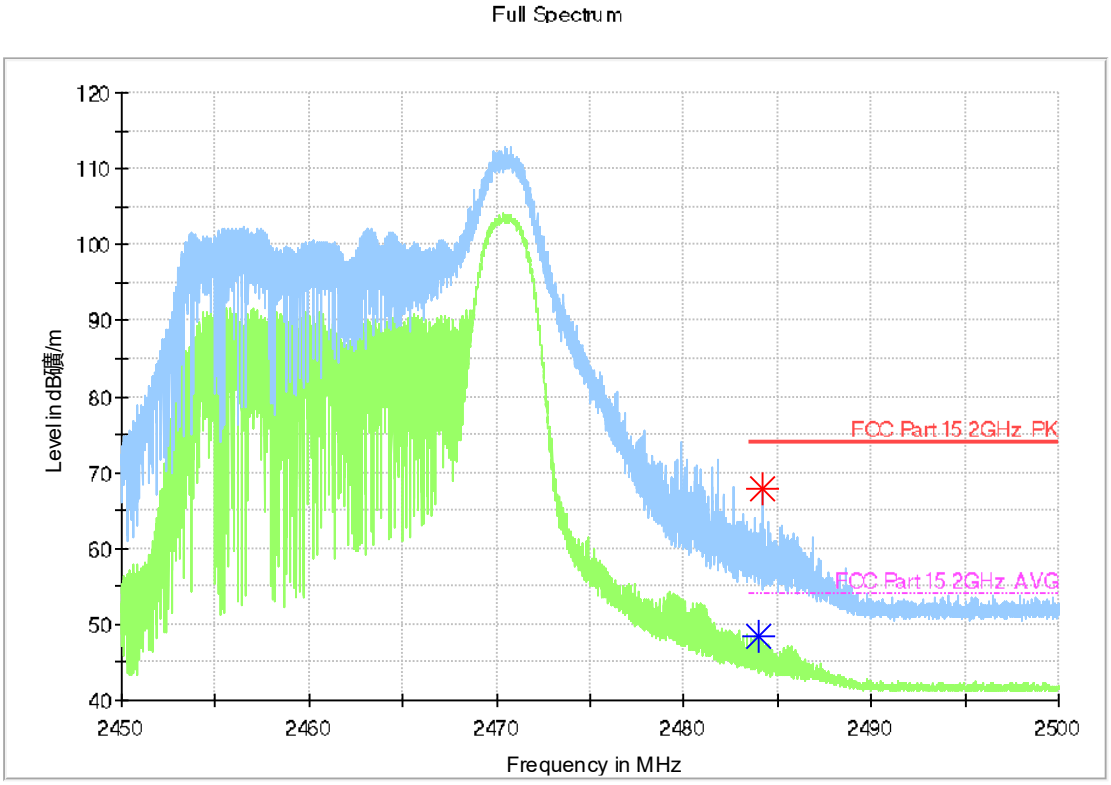


Fig.A.6.2.10 Transmitter Spurious Emission - Radiated (Power): 802.11ax-HT20, ch11, Partial RU,2.45 GHz - 2.50GHz

A.8. AC Power-line Conducted Emission

Summary

All AC line conducted spurious emissions are measured with a receiver connected to a grounded LISN while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for conducted spurious emissions. Only the conducted emissions of the configuration that produced the worst case emissions are reported in this section

Method of Measurement:

See Clause 6.2 of ANSI C63.10 specifically.

See Clause 4 and Clause 5 of ANSI C63.10 generally.

The conducted emissions from the AC port of the EUT are measured in a shielding room. The EUT is connected to a Line Impedance Stabilization Network (LISN). An overview sweep with peak detection was performed. The measurements were performed with a quasi-peak detector and if required, an average detector.

The conducted emission measurements were made with the following detector of the test receiver: Quasi-Peak / Average Detector.

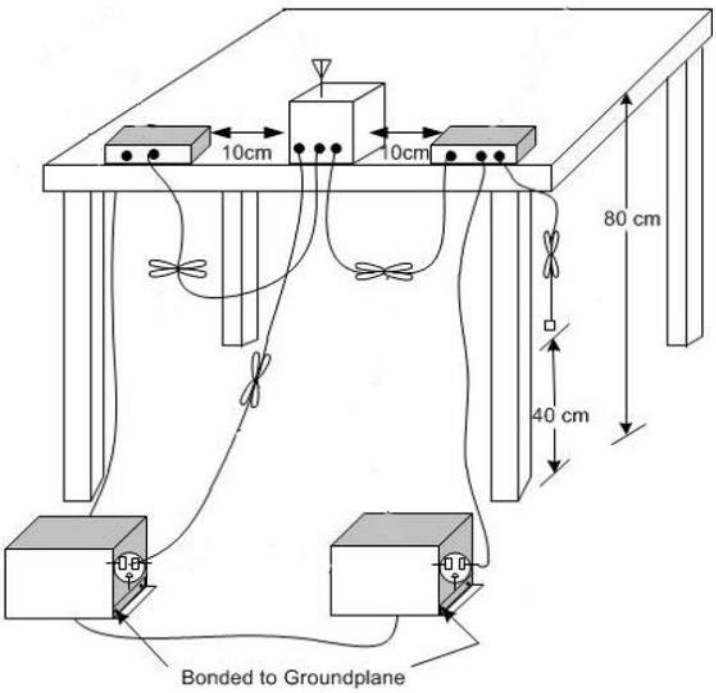
The measurement bandwidth is:

Frequency of Emission (MHz)	RBW/IF bandwidth
0.15-30	9kHz

Test Condition:

Voltage（V）	Frequency（Hz）
120	60

Test setup



Measurement Result and limit:

WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	66 to 56	Fig.A.8.1	Fig.A.8.2	P
0.5 to 5	56			
5 to 30	60			
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

WLAN (Average Limit)

Frequency range (MHz)	Average Limit (dBμV)	Result (dBμV)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	56 to 46	Fig.A.8.1	Fig.A.8.2	P
0.5 to 5	46			
5 to 30	50			
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

Conclusion: Pass

Test graphs as below:

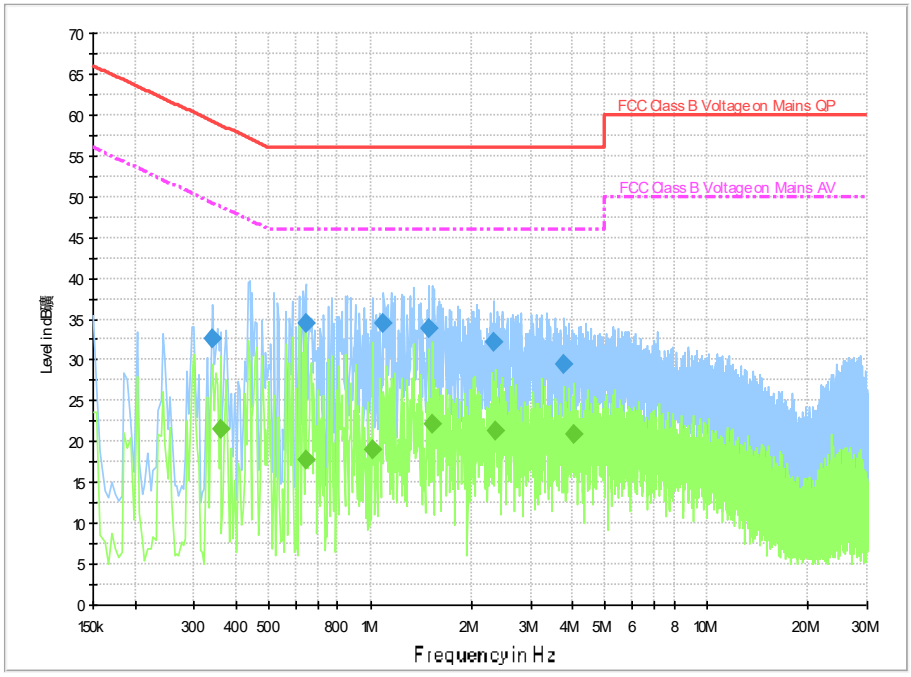


Fig.A.8.1 AC Powerline Conducted Emission-802.11b

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.338000	32.6	2000.0	9.000	On	L1	19.9	26.6	59.3	
0.642000	34.4	2000.0	9.000	On	N	19.8	21.6	56.0	
1.094000	34.4	2000.0	9.000	On	L1	19.9	21.6	56.0	
1.498000	33.8	2000.0	9.000	On	L1	19.9	22.2	56.0	
2.322000	32.1	2000.0	9.000	On	L1	19.8	23.9	56.0	
3.750000	29.4	2000.0	9.000	On	L1	19.8	26.6	56.0	

Final Result 2

Frequency (MHz)	CAverage (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.358000	21.6	2000.0	9.000	On	L1	19.9	27.2	48.8	
0.642000	17.7	2000.0	9.000	On	N	19.8	28.3	46.0	
1.014000	19.1	2000.0	9.000	On	L1	19.9	26.9	46.0	
1.526000	22.1	2000.0	9.000	On	L1	19.9	23.9	46.0	
2.358000	21.4	2000.0	9.000	On	L1	19.8	24.6	46.0	
4.054000	20.8	2000.0	9.000	On	L1	19.8	25.2	46.0	

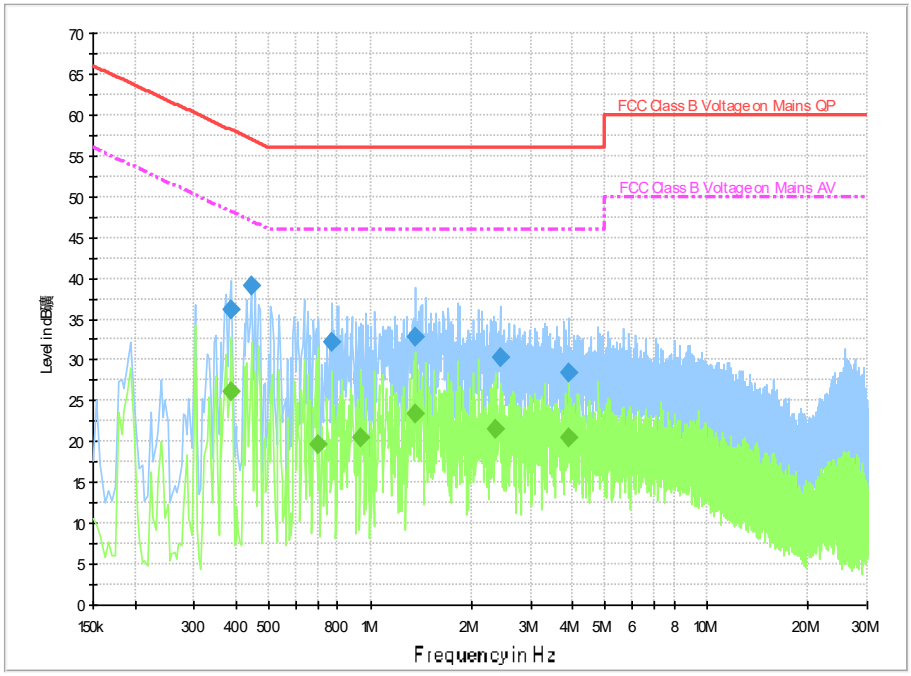


Fig.A.8.2 AC Powerline Conducted Emission-Idle

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.386000	36.1	2000.0	9.000	On	N	19.8	22.0	58.1	
0.442000	39.2	2000.0	9.000	On	L1	20.0	17.9	57.0	
0.770000	32.2	2000.0	9.000	On	L1	19.9	23.8	56.0	
1.362000	32.8	2000.0	9.000	On	L1	19.9	23.2	56.0	
2.430000	30.3	2000.0	9.000	On	L1	19.8	25.7	56.0	
3.894000	28.5	2000.0	9.000	On	L1	19.8	27.5	56.0	

Final Result 2

Frequency (MHz)	CAverage (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.386000	26.2	2000.0	9.000	On	L1	19.9	22.0	48.1	
0.702000	19.7	2000.0	9.000	On	L1	20.0	26.3	46.0	
0.938000	20.4	2000.0	9.000	On	L1	19.9	25.6	46.0	
1.362000	23.3	2000.0	9.000	On	L1	19.9	22.7	46.0	
2.370000	21.5	2000.0	9.000	On	L1	19.8	24.5	46.0	
3.894000	20.5	2000.0	9.000	On	L1	19.8	25.5	46.0	

A.9. Antenna Requirement

The antenna of the device is permanently attached. There are no provisions for connection to an external antenna.

The unit complies with the requirement of FCC Part 15.203.

ANNEX B: EUT parameters

Disclaimer: The antenna gain and worse case provided by the client may affect the validity of the measurement results in this report, and the client shall bear the impact and consequences arising therefrom.

ANNEX C: Accreditation Certificate

Accredited Laboratory

A2LA has accredited

TELECOMMUNICATION TECHNOLOGY LABS, CAICT

Beijing, People's Republic of China

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).

Presented this 23rd day of July 2024.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 7049.01
Valid to July 31, 2026

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

*****END OF REPORT*****