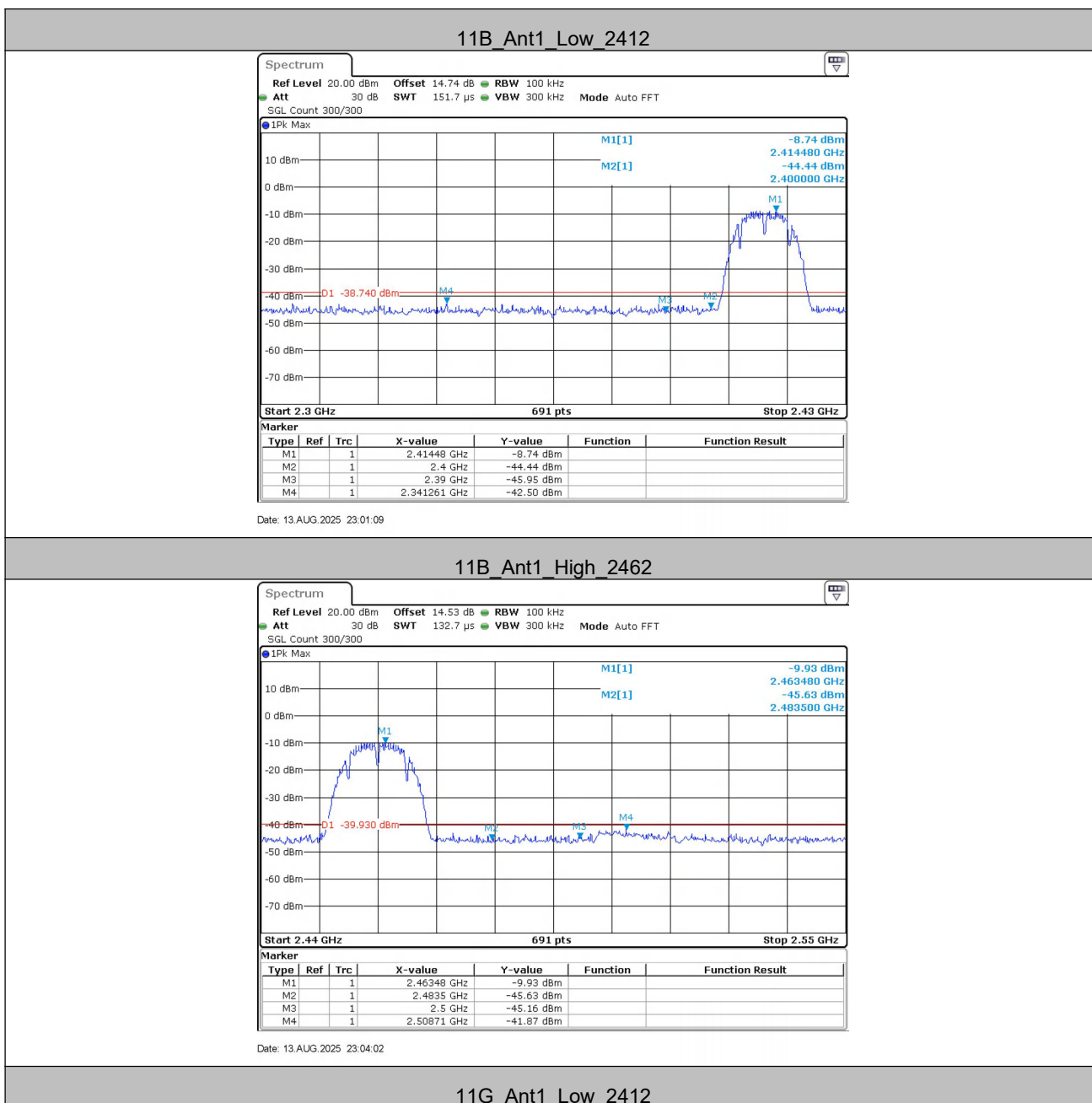
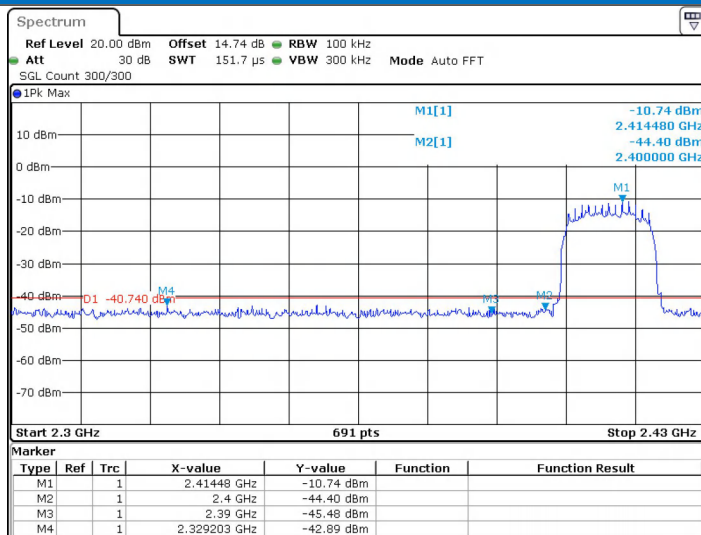


Test Result

TestMode	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Low	2412	-8.74	-42.5	≤ -38.74	PASS
	High	2462	-9.93	-41.87	≤ -39.93	PASS
11G	Low	2412	-10.74	-42.89	≤ -40.74	PASS
	High	2462	-9.38	-41.45	≤ -39.38	PASS
11N20SISO	Low	2412	-8.55	-42.54	≤ -38.55	PASS
	High	2462	-9.71	-40.65	≤ -39.71	PASS

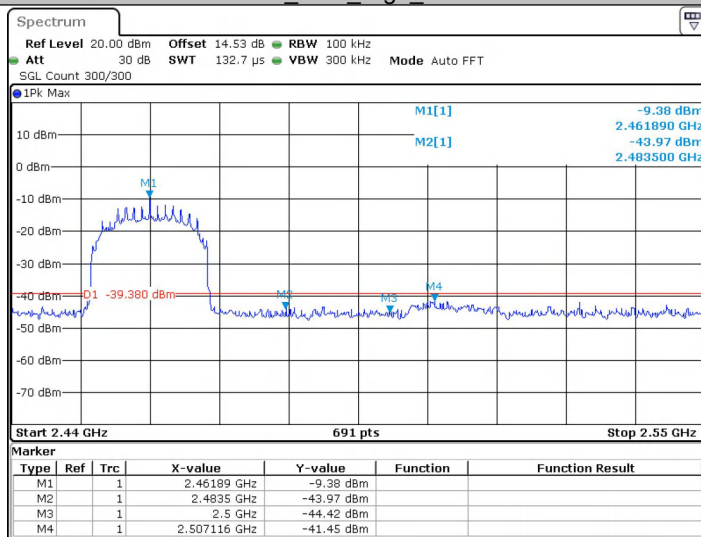
5.7.1 Test Graphs





Date: 13.AUG.2025 23:05:58

11G_Ant1_High_2462

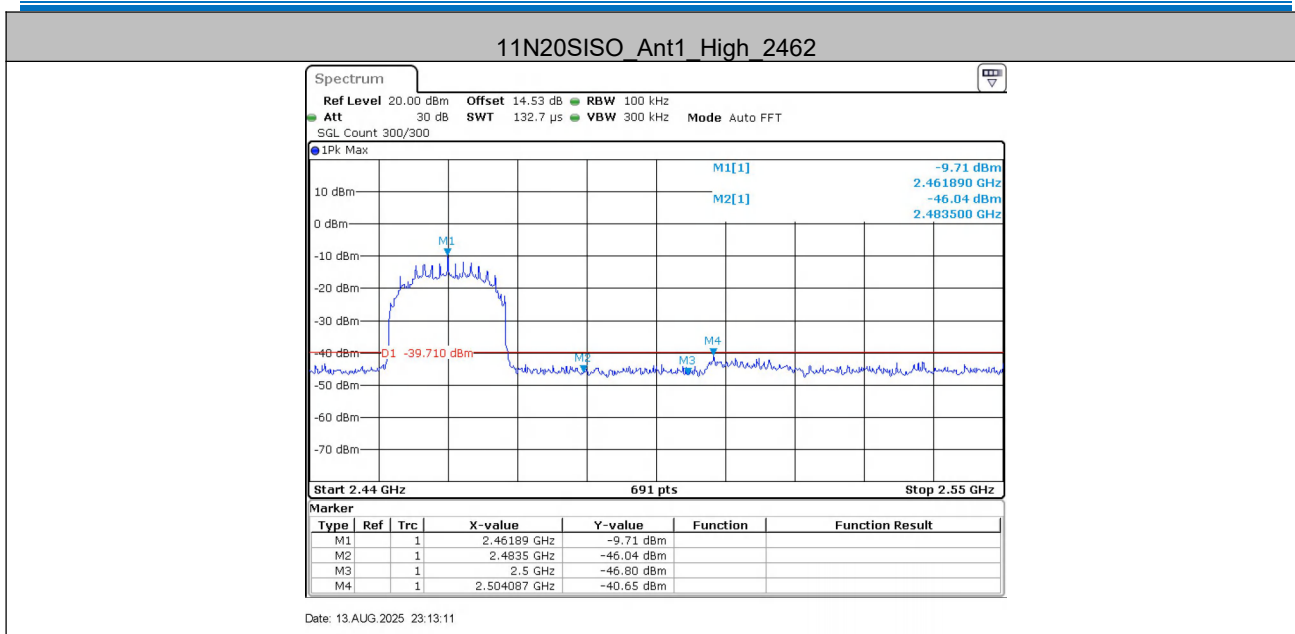


Date: 13.AUG.2025 23:14:14

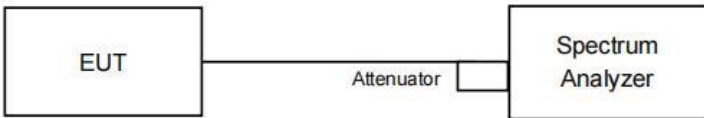
11N20SISO_Ant1_Low_2412



Date: 13.AUG.2025 23:10:54



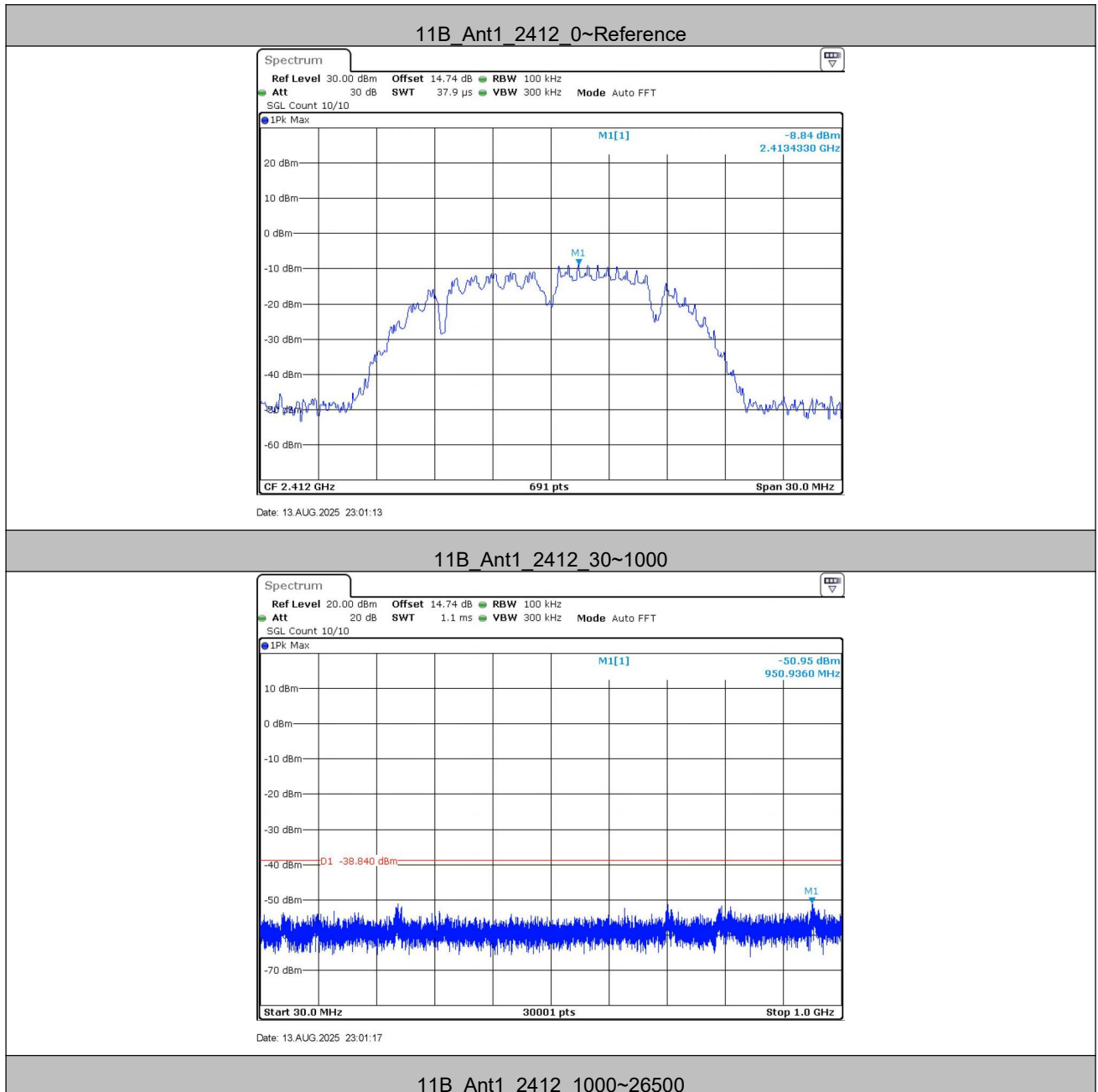
5.8 RF Conducted Spurious Emissions

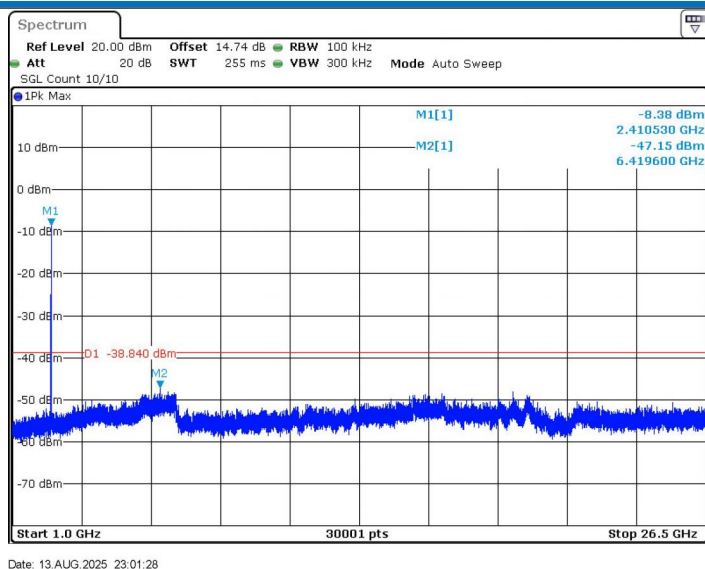
Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10: 2013
Test Setup:	 Offset=cable loss+ attenuation factor
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test Results:	Pass

Test Result

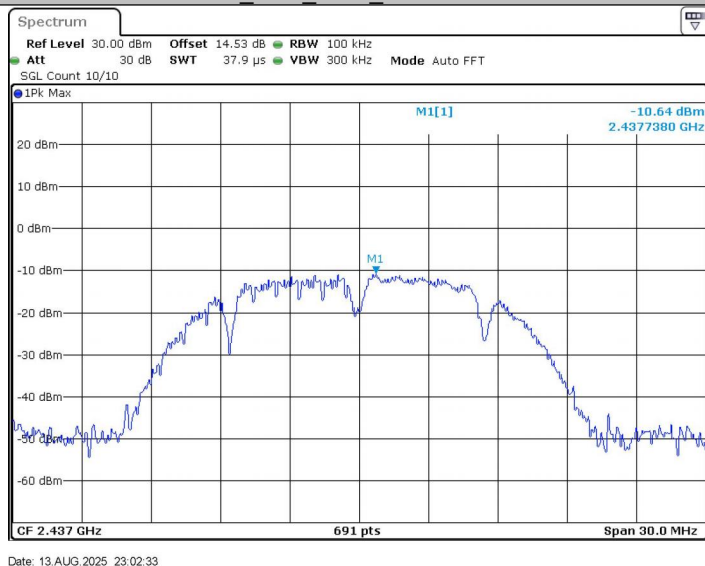
TestMode	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	2412	Reference	-8.84	-8.84	---	PASS
		30~1000	-8.84	-50.95	≤ -38.84	PASS
		1000~26500	-8.84	-47.15	≤ -38.84	PASS
	2437	Reference	-10.64	-10.64	---	PASS
		30~1000	-10.64	-51.87	≤ -40.64	PASS
		1000~26500	-10.64	-48.03	≤ -40.64	PASS
	2462	Reference	-9.75	-9.75	---	PASS
		30~1000	-9.75	-50.7	≤ -39.75	PASS
		1000~26500	-9.75	-47.28	≤ -39.75	PASS
11G	2412	Reference	-13.98	-13.98	---	PASS
		30~1000	-13.98	-51.53	≤ -43.98	PASS
		1000~26500	-13.98	-47.05	≤ -43.98	PASS
	2437	Reference	-11.84	-11.84	---	PASS
		30~1000	-11.84	-51.02	≤ -41.84	PASS
		1000~26500	-11.84	-47.69	≤ -41.84	PASS
	2462	Reference	-14.74	-14.74	---	PASS
		30~1000	-14.74	-50.95	≤ -44.74	PASS
		1000~26500	-14.74	-47.83	≤ -44.74	PASS
11N20SISO	2412	Reference	-14.58	-14.58	---	PASS
		30~1000	-14.58	-51.78	≤ -44.58	PASS
		1000~26500	-14.58	-47.86	≤ -44.58	PASS
	2437	Reference	-13.43	-13.43	---	PASS
		30~1000	-13.43	-51.85	≤ -43.43	PASS
		1000~26500	-13.43	-47.24	≤ -43.43	PASS
	2462	Reference	-14.56	-14.56	---	PASS
		30~1000	-14.56	-50.55	≤ -44.56	PASS
		1000~26500	-14.56	-48.08	≤ -44.56	PASS

Test Graphs

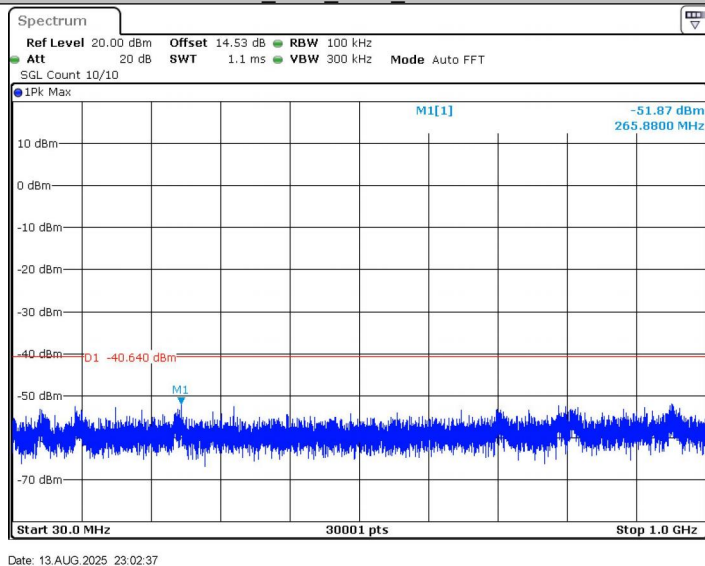




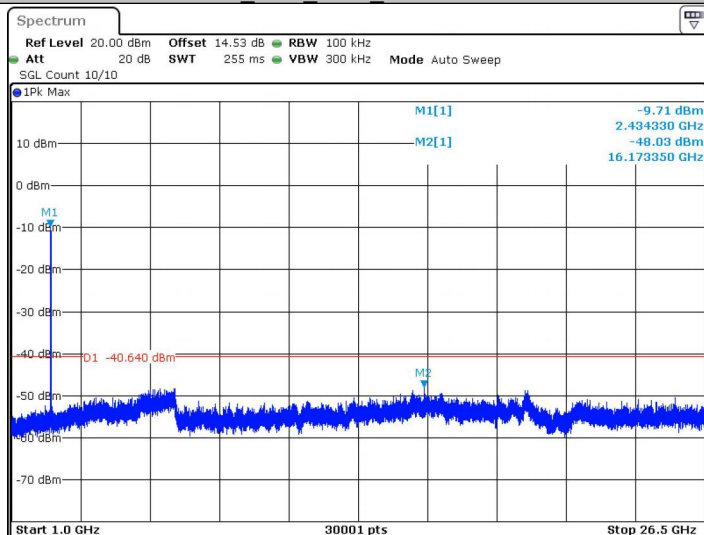
11B_Ant1_2437_0~Reference



11B_Ant1_2437_30~1000

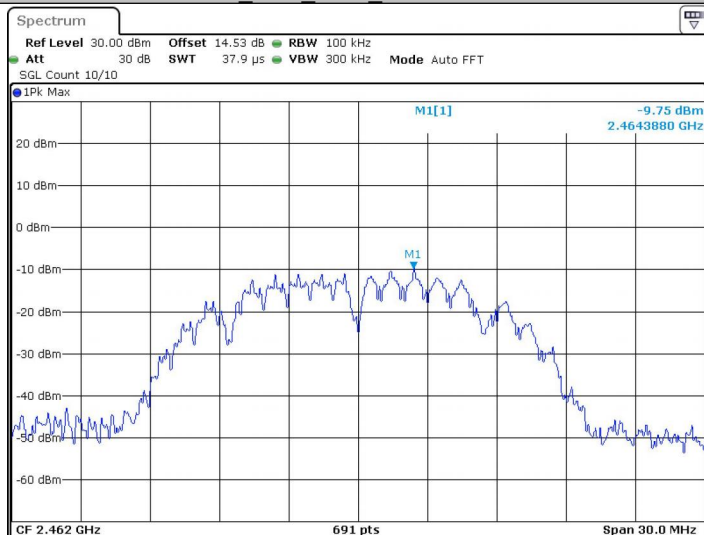


11B_Ant1_2437_1000~26500



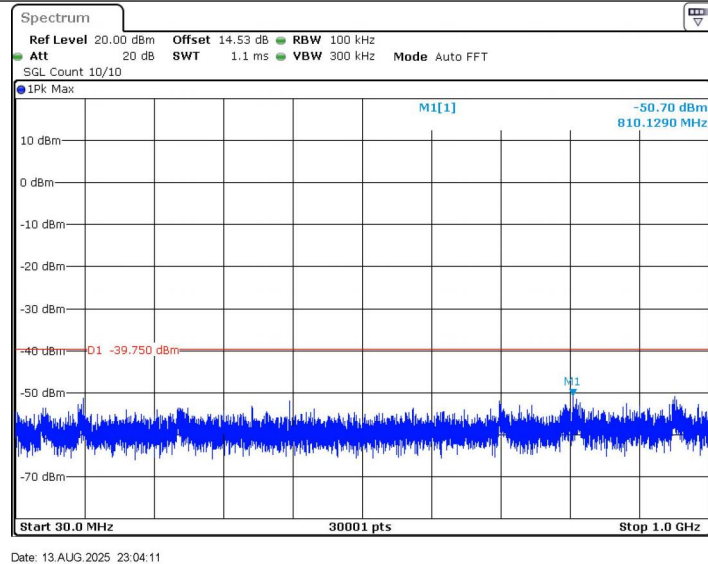
Date: 13.AUG.2025 23:02:48

11B_Ant1_2462_0~Reference

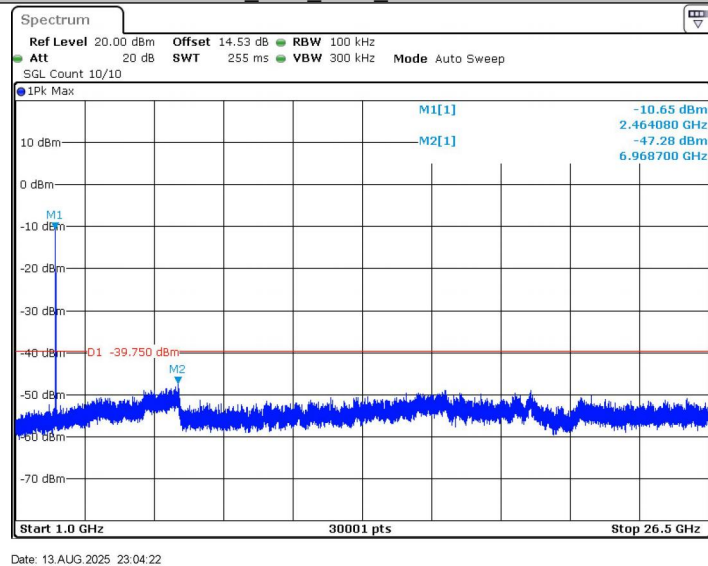


Date: 13.AUG.2025 23:04:06

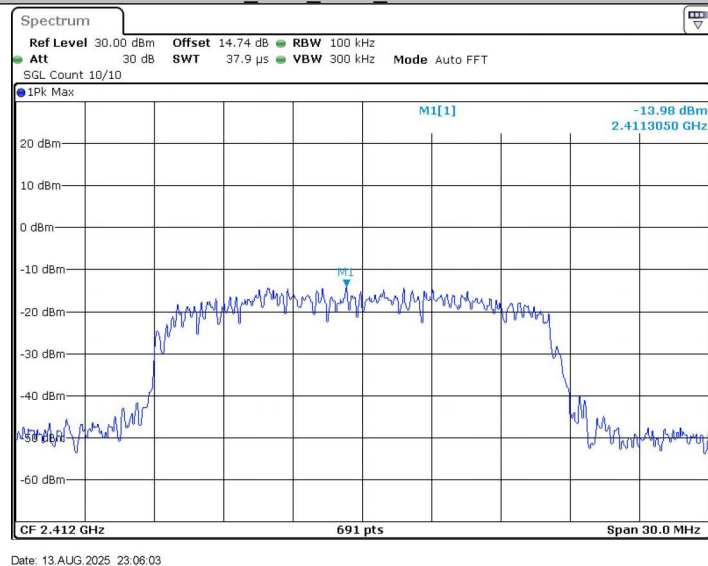
11B_Ant1_2462_30~1000



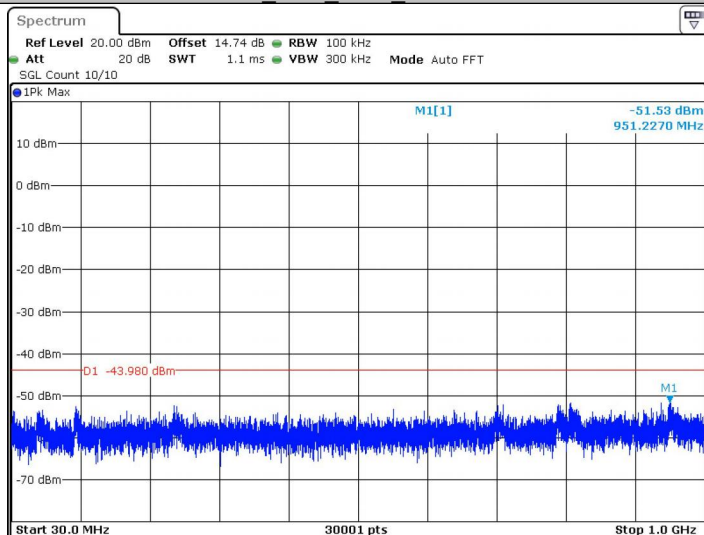
11B_Ant1_2462_1000~26500



11G_Ant1_2412_0~Reference

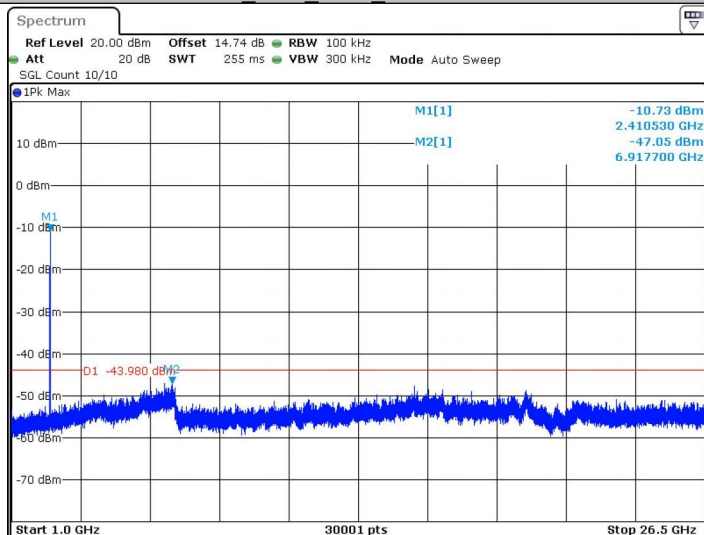


11G_Ant1_2412_30~1000



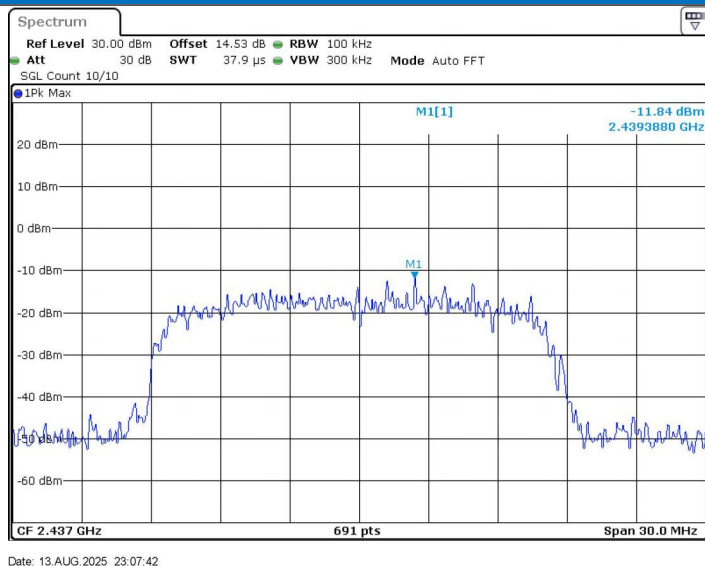
Date: 13.AUG.2025 23:06:07

11G_Ant1_2412_1000~26500

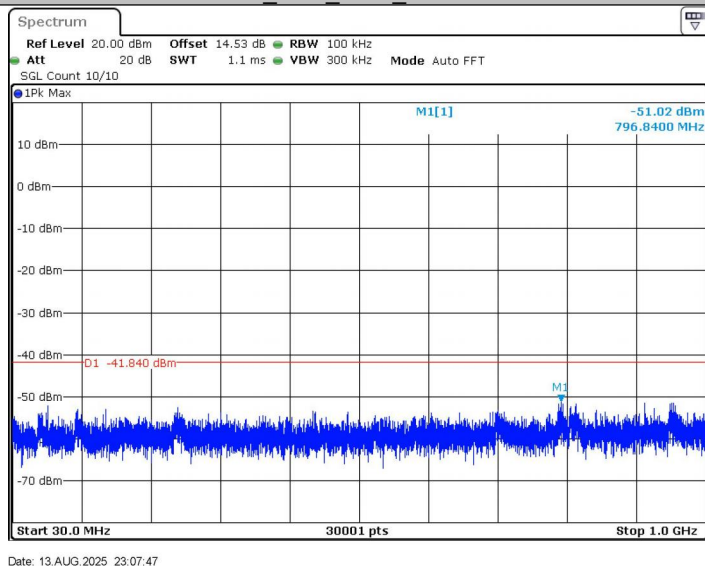


Date: 13.AUG.2025 23:06:18

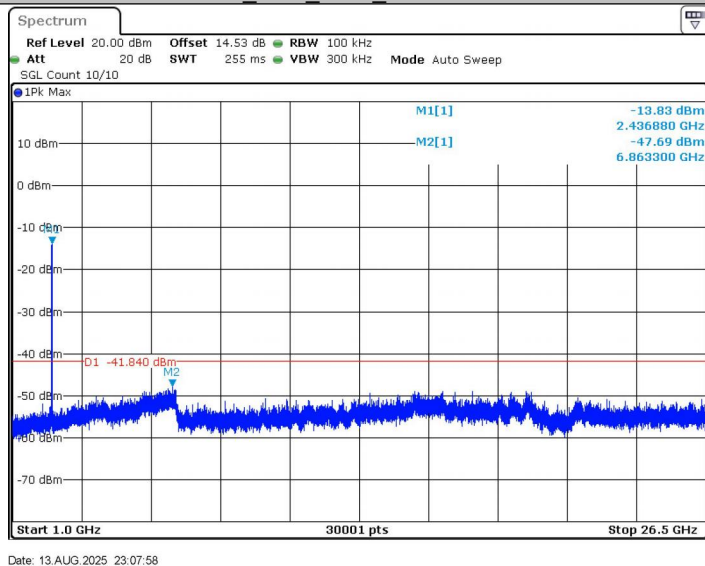
11G_Ant1_2437_0~Reference



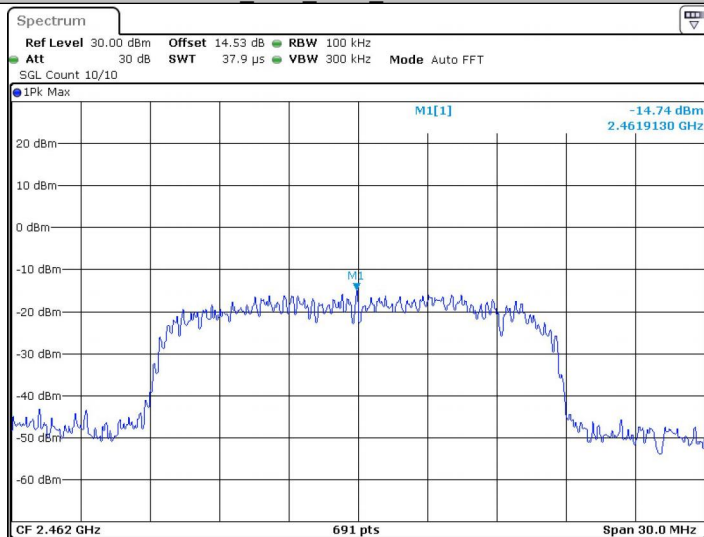
11G_Ant1_2437_30~1000



11G_Ant1_2437_1000~26500

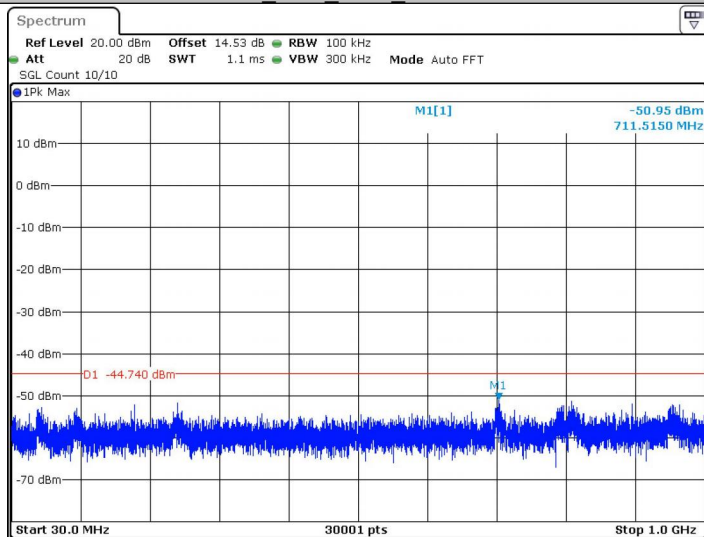


11G_Ant1_2462_0~Reference



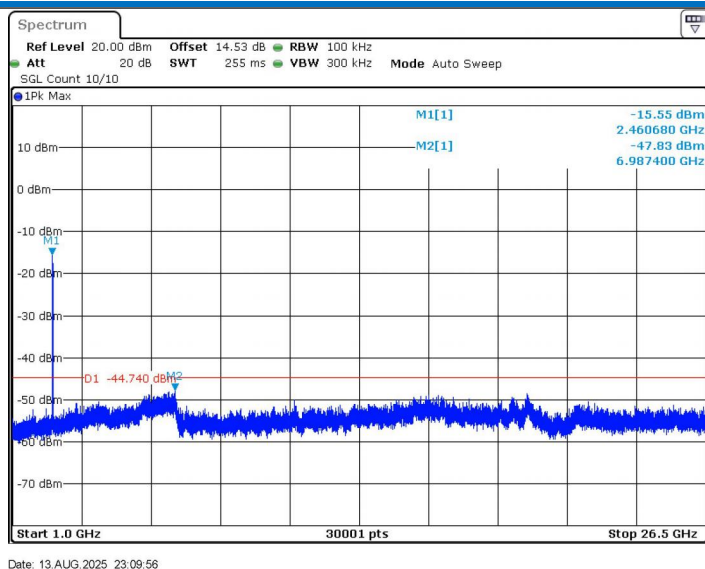
Date: 13.AUG.2025 23:09:41

11G_Ant1_2462_30~1000

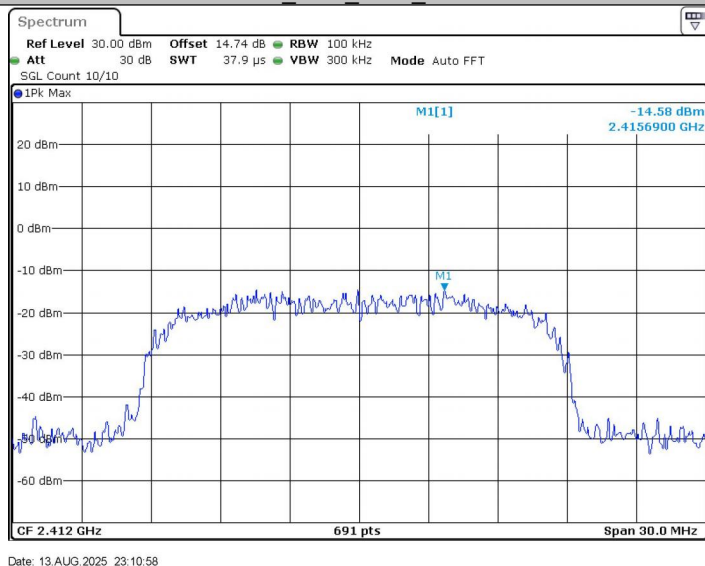


Date: 13.AUG.2025 23:09:45

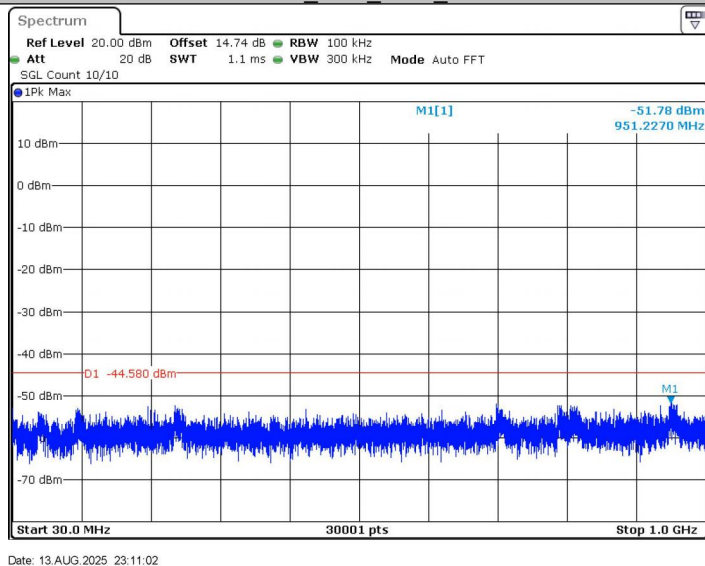
11G_Ant1_2462_1000~26500



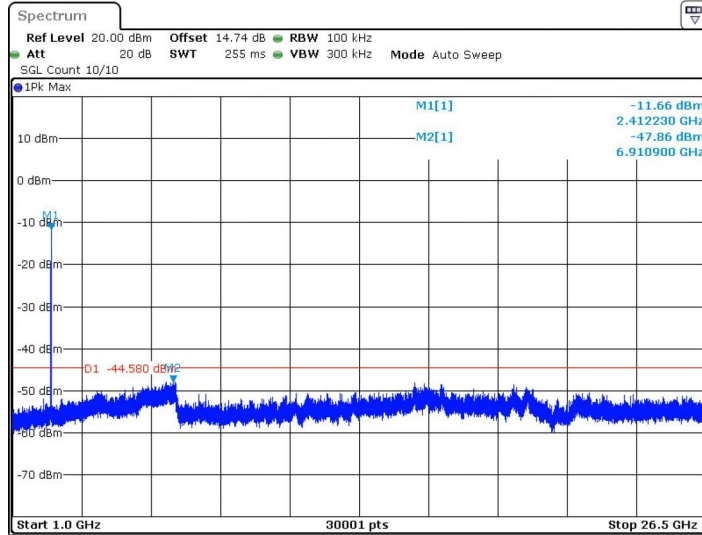
11N20SISO_Ant1_2412_0~Reference



11N20SISO_Ant1_2412_30~1000

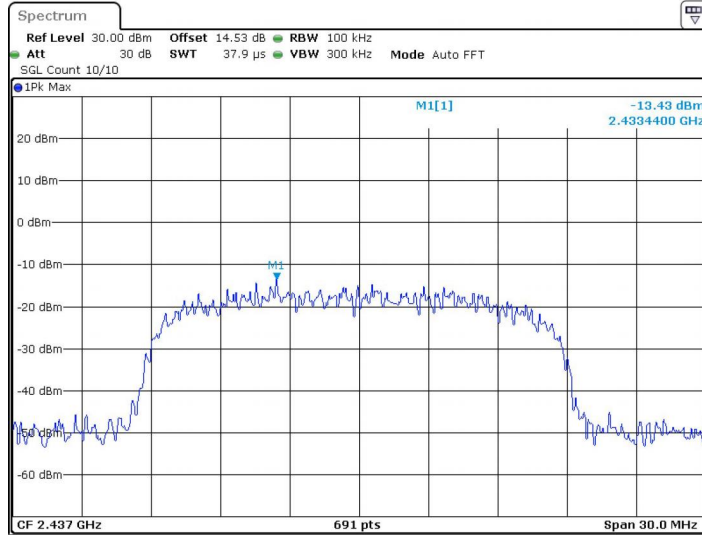


11N20SISO_Ant1_2412_1000~26500



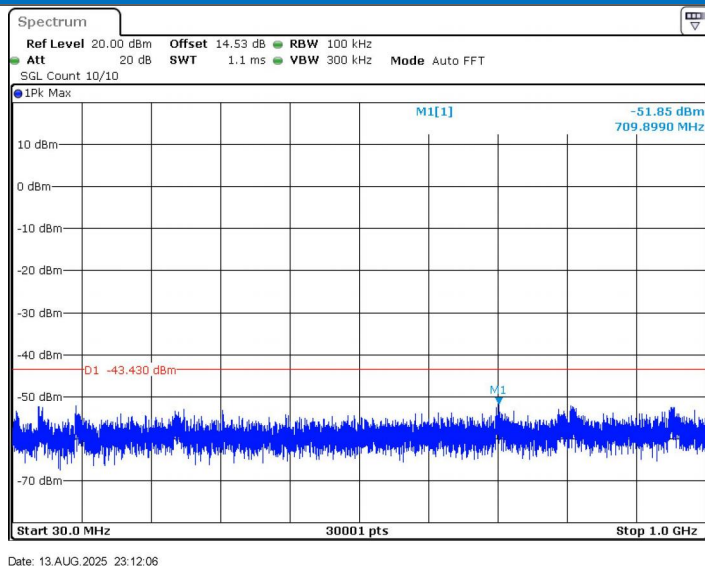
Date: 13.AUG.2025 23:11:13

11N20SISO_Ant1_2437_0~Reference

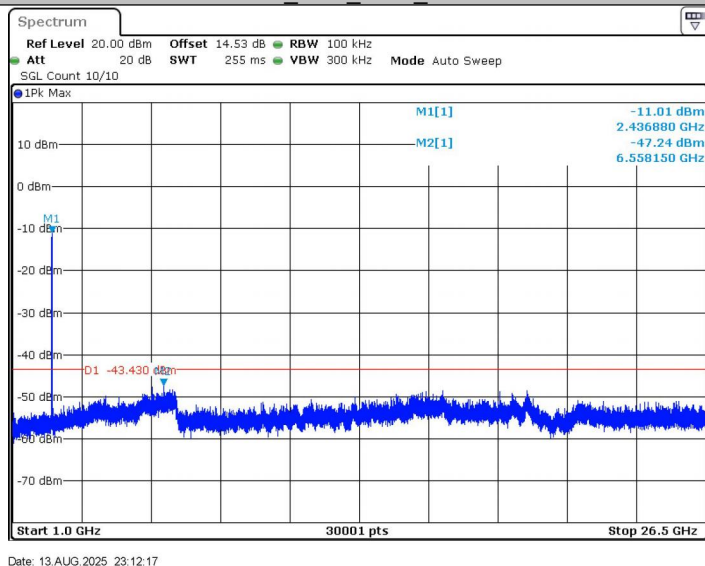


Date: 13.AUG.2025 23:12:02

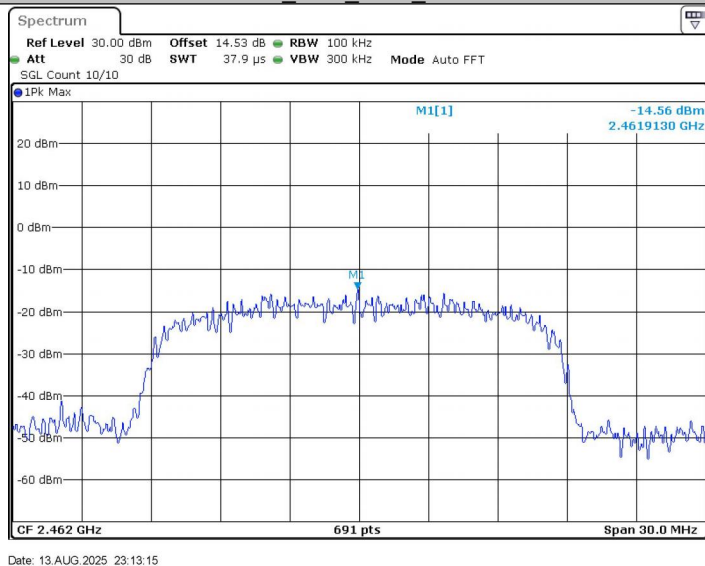
11N20SISO_Ant1_2437_30~1000



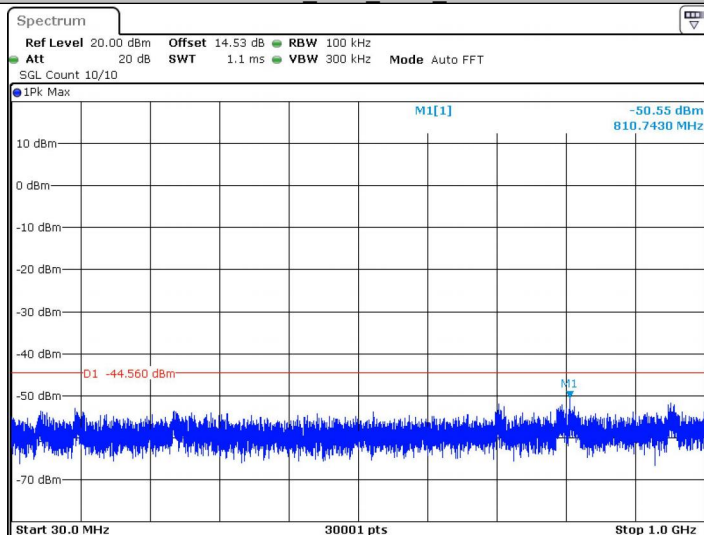
11N20SISO_Ant1_2437_1000~26500



11N20SISO_Ant1_2462_0~Reference

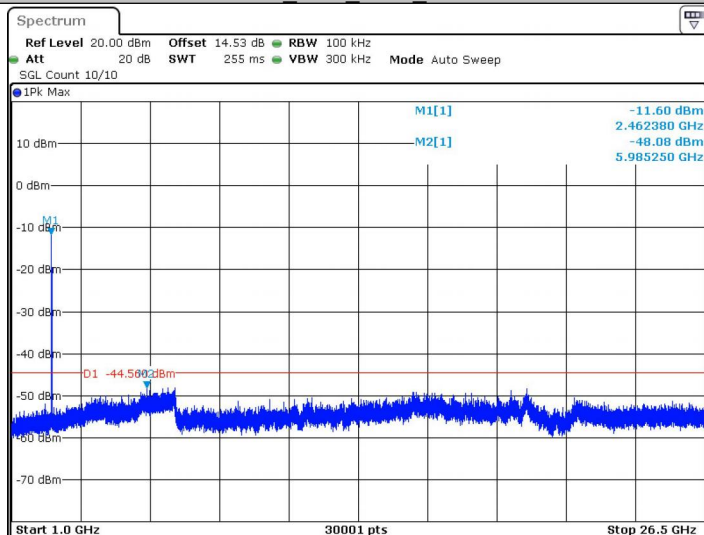


11N20SISO_Ant1_2462_30~1000



Date: 13.AUG.2025 23:13:20

11N20SISO_Ant1_2462_1000~26500



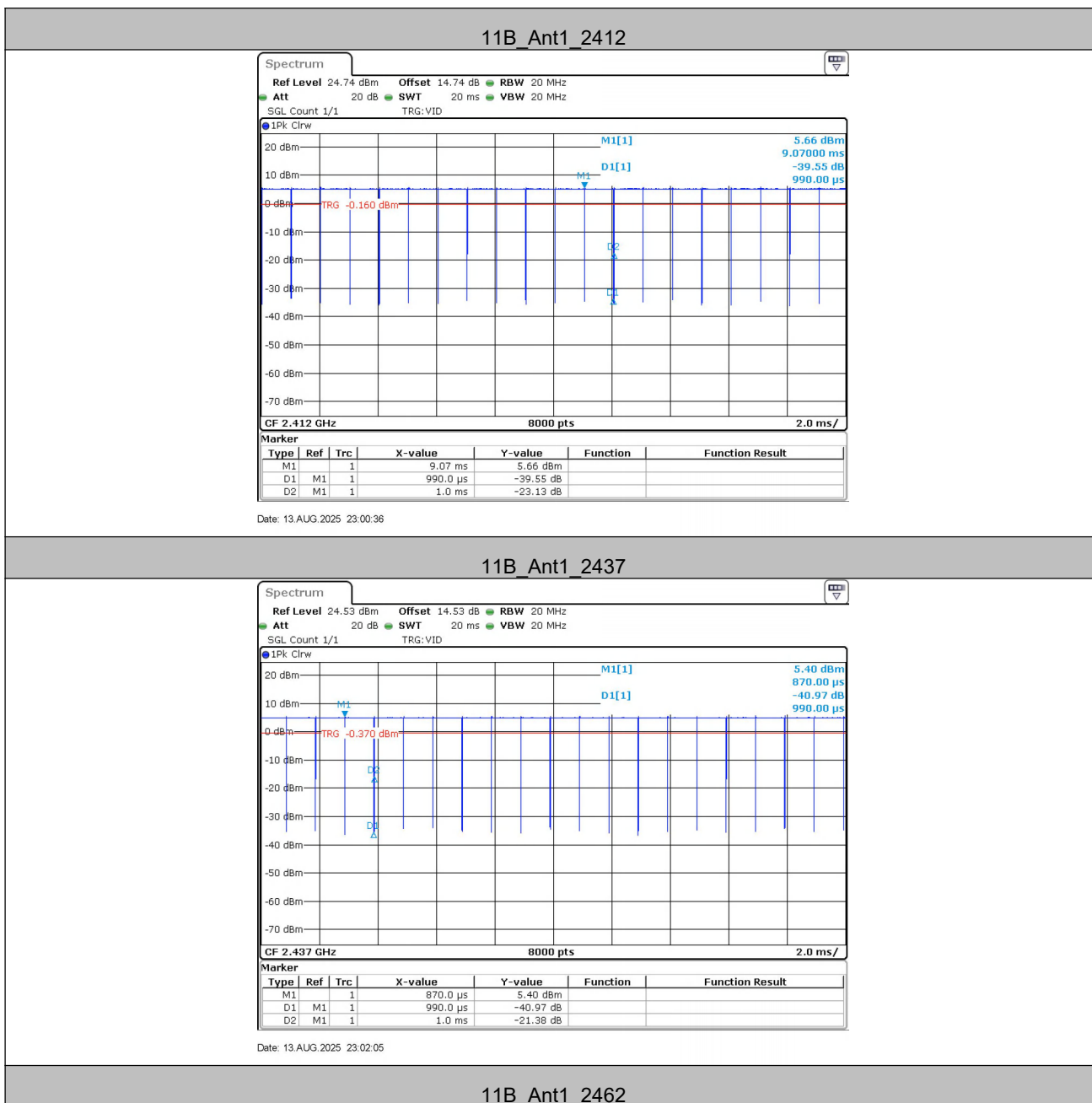
Date: 13.AUG.2025 23:13:31

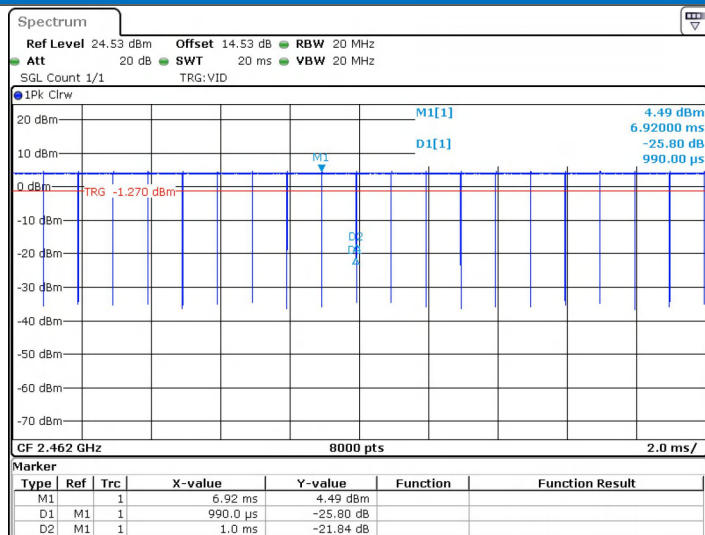
5.9 Appendix H: Duty Cycle

5.9.1 Test Result

TestMode	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
11B	2412	0.99	1.00	99.00
	2437	0.99	1.00	99.00
	2462	0.99	1.00	99.00
11G	2412	0.68	0.69	98.55
	2437	0.68	0.70	97.14
	2462	0.69	0.70	98.57
11N20SISO	2412	0.66	0.67	98.51
	2437	0.65	0.66	98.48
	2462	0.65	0.66	98.48

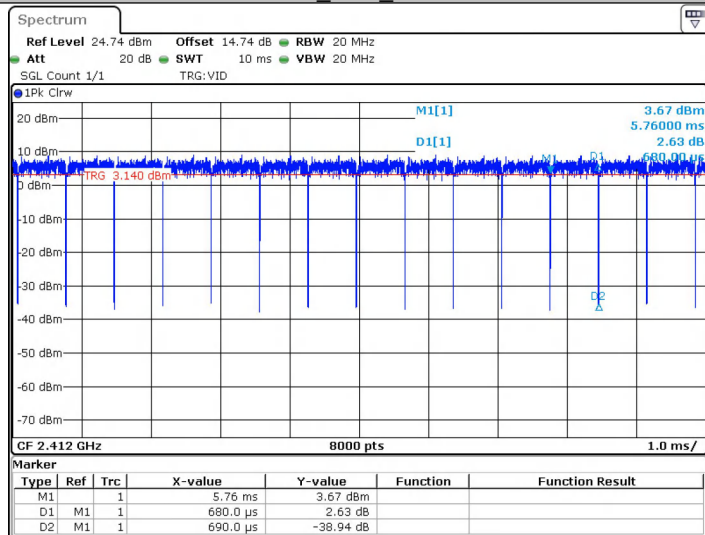
5.9.2 Test Graphs





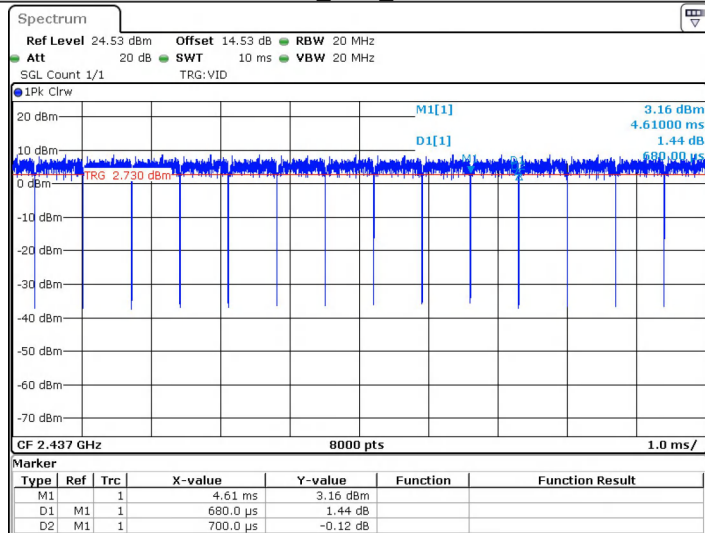
Date: 13.AUG.2025 23:03:31

11G_Ant1_2412



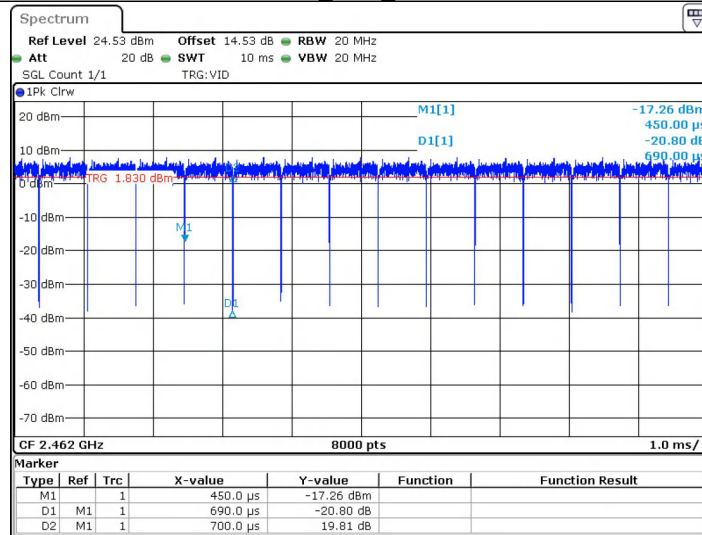
Date: 13.AUG.2025 23:05:26

11G_Ant1_2437



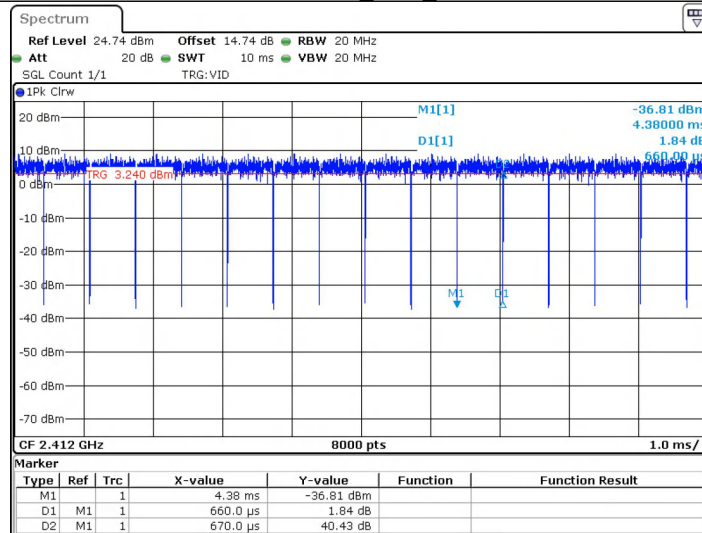
Date: 13.AUG.2025 23:07:15

11G_Ant1_2462



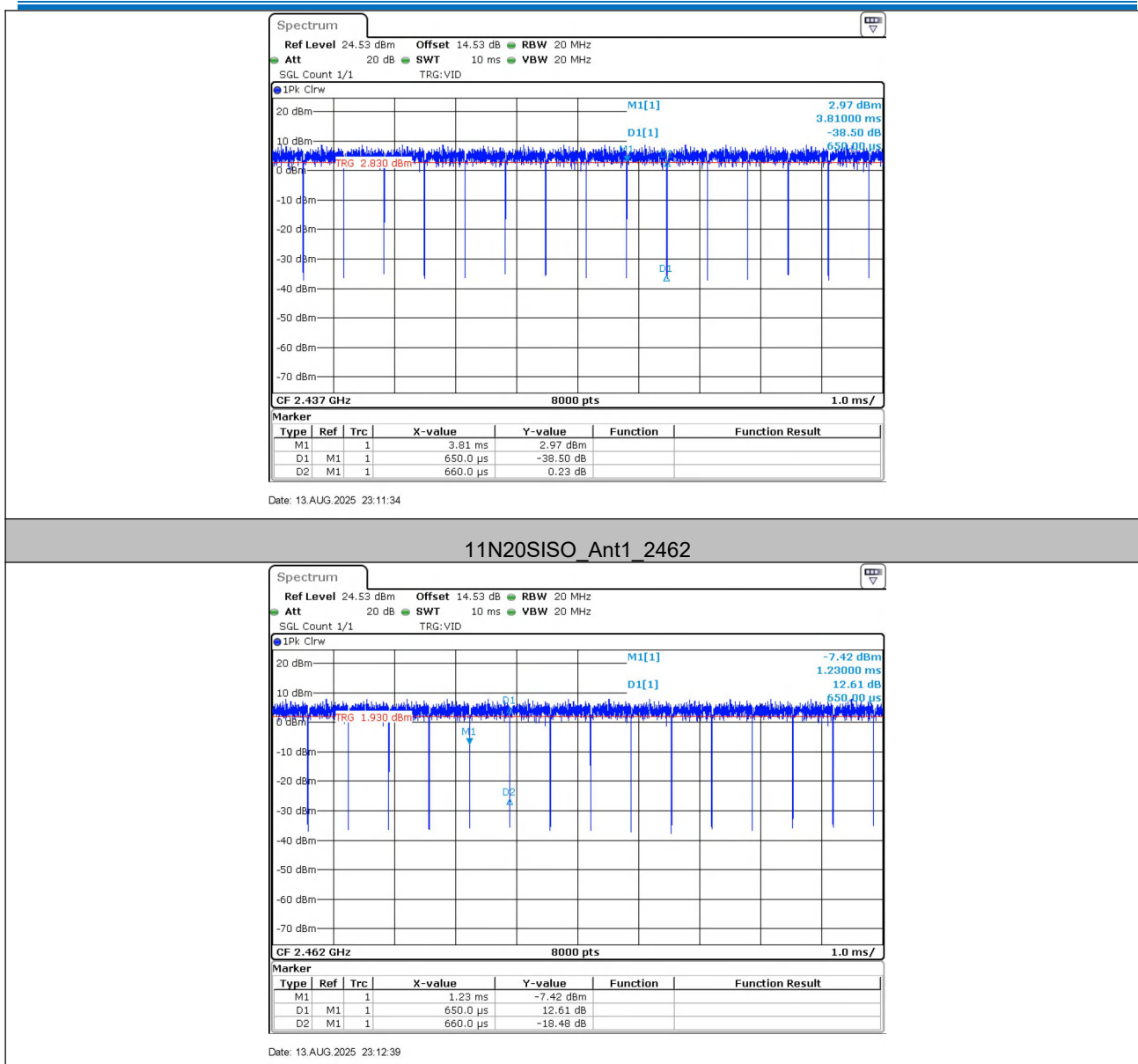
Date: 13.AUG.2025 23:09:06

11N20SISO_Ant1_2412



Date: 13.AUG.2025 23:10:22

11N20SISO_Ant1_2437



Remark:

Pretest 9kHz to 25GHz, find the highest point when testing, so only the worst data were shown in the test report. Per FCC Part 15.33 (a) and 15.31 (o) ,The amplitude of spurious emissions from intentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this part.

5.10 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205				
Test Method:	ANSI C63.10 2013				
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)				
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
	0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
	0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
	0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
	0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	100 kHz	300kHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Peak	1MHz	10Hz	Average
Limit:	Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz-88MHz	100	40.0	Quasi-peak	3
	88MHz-216MHz	150	43.5	Quasi-peak	3
	216MHz-960MHz	200	46.0	Quasi-peak	3
	960MHz-1GHz	500	54.0	Quasi-peak	3
	Above 1GHz	500	54.0	Average	3
	Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.				

Test Setup:

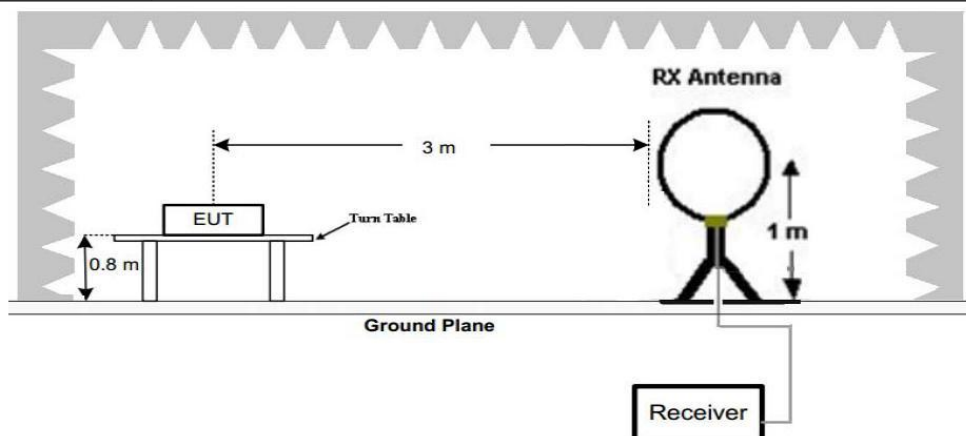


Figure 1. Below 30MHz

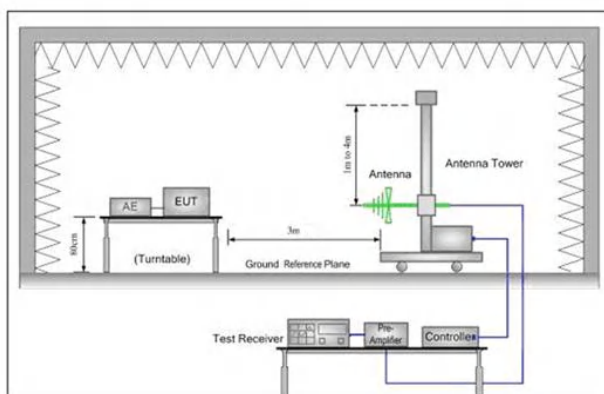


Figure 2. 30MHz to 1GHz

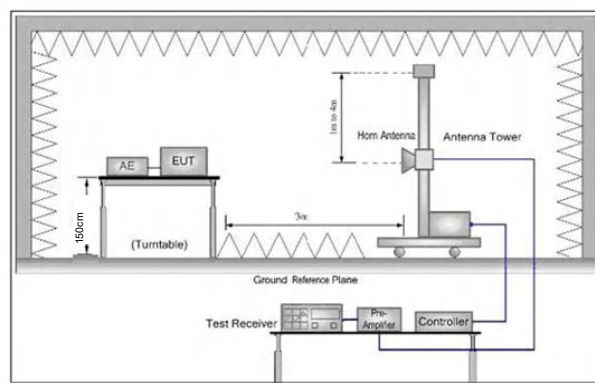


Figure 3. Above 1 GHz

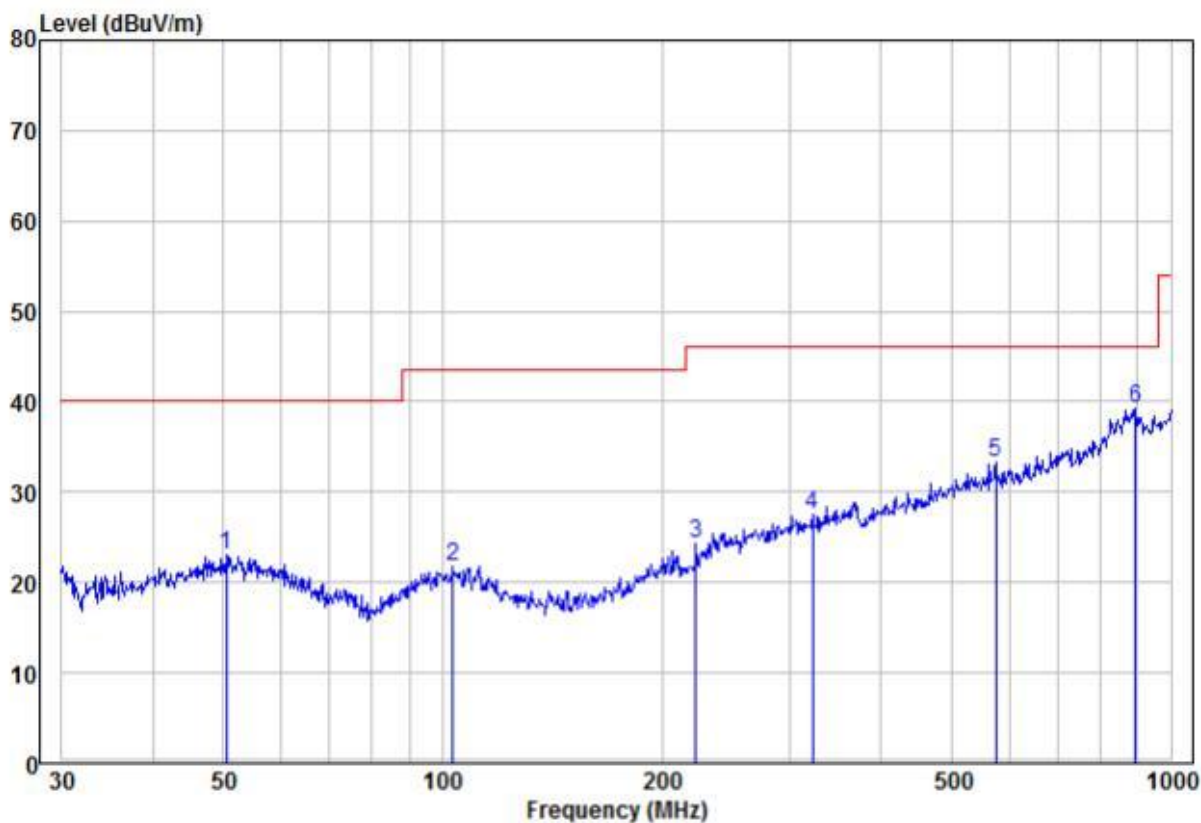
Test Procedure:

- a. 1) Below 1G: The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
2) Above 1G: The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
Note: For the radiated emission test above 1GHz: Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

	d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case . i. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.
Final Test Mode:	Only the worst case is recorded in the report.
Test Results:	Pass

5.10.1 Radiated emission below 1GHz

30MHz~1GHz
Vertical



	Read Freq	Level	Factor	Level	Limit	Over Limit	Remark	Pol/Phase
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1	50.41	9.33	13.77	23.10	40.00	-16.90	Peak	VERTICAL
2	103.44	8.78	12.90	21.68	43.50	-21.82	Peak	VERTICAL
3	222.95	10.40	13.94	24.34	46.00	-21.66	Peak	VERTICAL
4	322.19	9.13	18.32	27.45	46.00	-18.55	Peak	VERTICAL
5	574.63	10.46	22.79	33.25	46.00	-12.75	Peak	VERTICAL
6 pp	893.86	9.59	29.71	39.30	46.00	-6.70	Peak	VERTICAL

Remark:

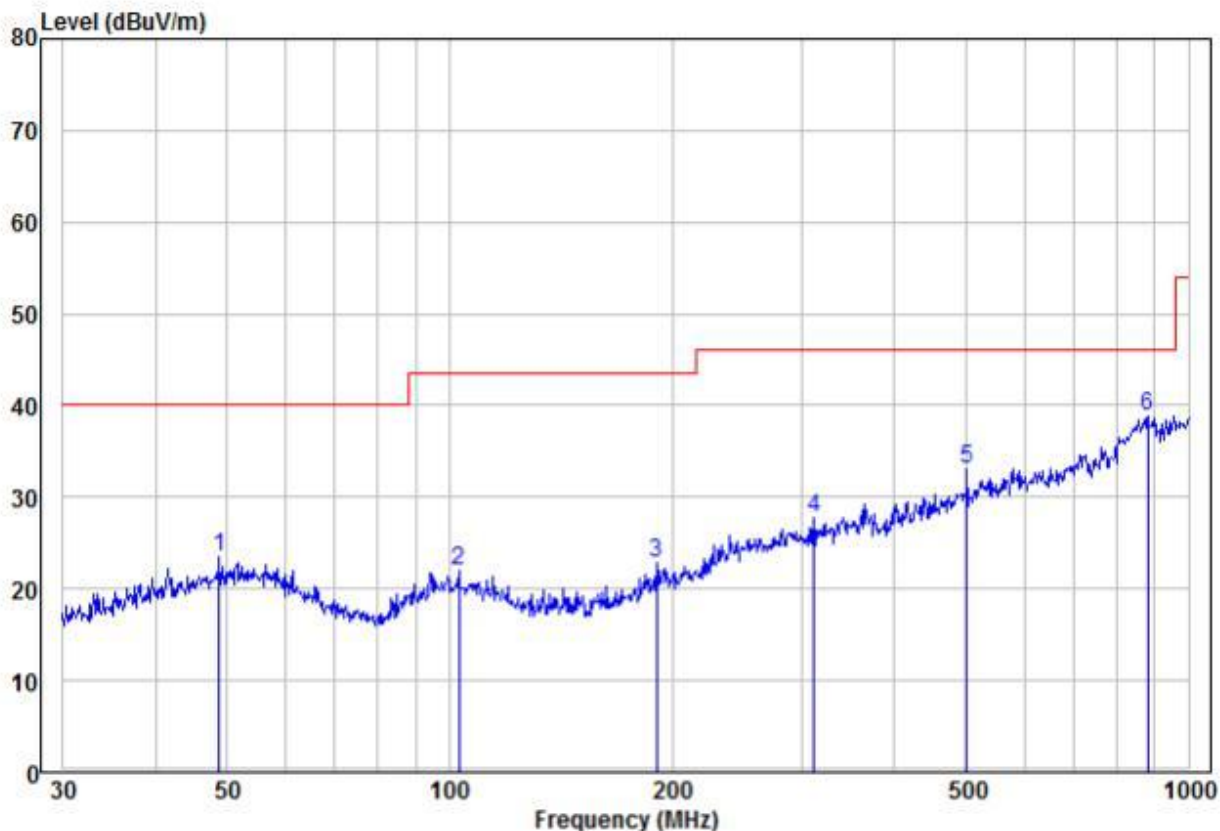
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Factor= Antenna Factor + Cable Factor – Preamplifier Factor,

Level = Read Level + Factor,

Over Limit=Level-Limit Line.

Horizontal



	Freq	Read	Factor	Level	Limit	Over	Remark	Pol/Phase
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1	48.84	9.95	13.57	23.52	40.00	-16.48	Peak	HORIZONTAL
2	103.08	8.96	12.91	21.87	43.50	-21.63	Peak	HORIZONTAL
3	190.41	10.01	12.79	22.80	43.50	-20.70	Peak	HORIZONTAL
4	311.09	9.77	18.04	27.81	46.00	-18.19	Peak	HORIZONTAL
5	501.18	11.20	21.84	33.04	46.00	-12.96	Peak	HORIZONTAL
6 pp	881.41	9.37	29.52	38.89	46.00	-7.11	Peak	HORIZONTAL

Remark:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Factor= Antenna Factor + Cable Factor – Preamplifier Factor,

Level = Read Level + Factor,

Over Limit=Level-Limit Line.

5.10.2 Transmitter emission above 1GHz

Test mode:		802.11b(1Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	54.11	-4.26	49.85	74	-24.15	peak	H	1.5	269
4824.000	36.83	-4.26	32.57	54	-21.43	AVG	H	1.5	85
7236.000	50.53	1.18	51.71	74	-22.29	peak	H	1.5	172
7236.000	38.71	1.18	39.89	54	-14.11	AVG	H	1.5	205
4824.000	54.76	-4.26	50.50	74	-23.50	peak	V	1.5	171
4824.000	38.68	-4.26	34.42	54	-19.58	AVG	V	1.5	186
7236.000	51.68	1.18	52.86	74	-21.14	peak	V	1.5	4
7236.000	35.67	1.18	36.85	54	-17.15	AVG	V	1.5	206

Test mode:		802.11b(1Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	52.76	-4.12	48.64	74	-25.36	peak	H	1.5	337
4874.000	37.86	-4.12	33.74	54	-20.26	AVG	H	1.5	322
7311.000	48.95	1.46	50.41	74	-23.59	peak	H	1.5	133
7311.000	36.05	1.46	37.51	54	-16.49	AVG	H	1.5	173
4874.000	53.91	-4.12	49.79	74	-24.21	peak	V	1.5	259
4874.000	37.30	-4.12	33.18	54	-20.82	AVG	V	1.5	243
7311.000	49.28	1.46	50.74	74	-23.26	peak	V	1.5	177
7311.000	35.12	1.46	36.58	54	-17.42	AVG	V	1.5	232

Test mode:		802.11b(1Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol. H/V	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)			(m)	(Degree)
4924.000	52.39	-4.03	48.36	74	-25.64	peak	H	1.5	245
4924.000	38.35	-4.03	34.32	54	-19.68	AVG	H	1.5	80
7386.000	49.28	1.66	50.94	74	-23.06	peak	H	1.5	222
7386.000	36.43	1.66	38.09	54	-15.91	AVG	H	1.5	183
4924.000	53.83	-4.03	49.80	74	-24.20	peak	V	1.5	232
4924.000	38.50	-4.03	34.47	54	-19.53	AVG	V	1.5	144
7386.000	50.27	1.66	51.93	74	-22.07	peak	V	1.5	257
7386.000	36.52	1.66	38.18	54	-15.82	AVG	V	1.5	122

Remark:

- 1) The 1Mbps of rate of 802.11b is the worst case.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

Test mode:		802.11g(6Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	52.54	-4.26	48.28	74	-25.72	peak	H	1.5	212
4824.000	37.40	-4.26	33.14	54	-20.86	AVG	H	1.5	290
7236.000	50.60	1.18	51.78	74	-22.22	peak	H	1.5	200
7236.000	37.21	1.18	38.39	54	-15.61	AVG	H	1.5	182
4824.000	55.61	-4.26	51.35	74	-22.65	peak	V	1.5	257
4824.000	39.46	-4.26	35.20	54	-18.80	AVG	V	1.5	356
7236.000	52.10	1.18	53.28	74	-20.72	peak	V	1.5	358
7236.000	36.88	1.18	38.06	54	-15.94	AVG	V	1.5	161

Test mode:		802.11g(6Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	53.13	-4.12	49.01	74	-24.99	peak	H	1.5	211
4874.000	36.98	-4.12	32.86	54	-21.14	AVG	H	1.5	123
7311.000	49.81	1.46	51.27	74	-22.73	peak	H	1.5	157
7311.000	36.15	1.46	37.61	54	-16.39	AVG	H	1.5	201
4874.000	54.21	-4.12	50.09	74	-23.91	peak	V	1.5	159
4874.000	36.75	-4.12	32.63	54	-21.37	AVG	V	1.5	239
7311.000	48.80	1.46	50.26	74	-23.74	peak	V	1.5	76
7311.000	35.16	1.46	36.62	54	-17.38	AVG	V	1.5	320

Test mode:		802.11g(6Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol. H/V	Antenna Height (m)	Table Angle (Degree)
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)				
4924.000	51.95	-4.03	47.92	74	-26.08	peak	H	1.5	131
4924.000	37.34	-4.03	33.31	54	-20.69	AVG	H	1.5	272
7386.000	51.05	1.66	52.71	74	-21.29	peak	H	1.5	10
7386.000	36.23	1.66	37.89	54	-16.11	AVG	H	1.5	315
4924.000	54.32	-4.03	50.29	74	-23.71	peak	V	1.5	309
4924.000	37.88	-4.03	33.85	54	-20.15	AVG	V	1.5	144
7386.000	49.29	1.66	50.95	74	-23.05	peak	V	1.5	325
7386.000	36.06	1.66	37.72	54	-16.28	AVG	V	1.5	227

Remark:

- 1) The 6Mbps of rate of 802.11g is the worst case.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

Test mode:		802.11n20(6.5Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	52.63	-4.26	48.37	74	-25.63	peak	H	1.5	10
4824.000	37.43	-4.26	33.17	54	-20.83	AVG	H	1.5	325
7236.000	51.02	1.18	52.20	74	-21.80	peak	H	1.5	222
7236.000	38.17	1.18	39.35	54	-14.65	AVG	H	1.5	6
4824.000	54.77	-4.26	50.51	74	-23.49	peak	V	1.5	213
4824.000	39.20	-4.26	34.94	54	-19.06	AVG	V	1.5	314
7236.000	50.36	1.18	51.54	74	-22.46	peak	V	1.5	142
7236.000	36.11	1.18	37.29	54	-16.71	AVG	V	1.5	7

Test mode:		802.11n20(6.5Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	51.81	-4.12	47.69	74	-26.31	peak	H	1.5	221
4874.000	37.15	-4.12	33.03	54	-20.97	AVG	H	1.5	167
7311.000	49.84	1.46	51.30	74	-22.70	peak	H	1.5	357
7311.000	35.68	1.46	37.14	54	-16.86	AVG	H	1.5	10
4874.000	52.43	-4.12	48.31	74	-25.69	peak	V	1.5	264
4874.000	37.86	-4.12	33.74	54	-20.26	AVG	V	1.5	9
7311.000	48.34	1.46	49.80	74	-24.20	peak	V	1.5	324
7311.000	36.69	1.46	38.15	54	-15.85	AVG	V	1.5	113

Test mode:		802.11n20(6.5Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4924.000	53.20	-4.03	49.17	74	-24.83	peak	H	1.5	98
4924.000	38.81	-4.03	34.78	54	-19.22	AVG	H	1.5	256
7386.000	50.52	1.66	52.18	74	-21.82	peak	H	1.5	24
7386.000	37.67	1.66	39.33	54	-14.67	AVG	H	1.5	253
4924.000	53.62	-4.03	49.59	74	-24.41	peak	V	1.5	48
4924.000	37.29	-4.03	33.26	54	-20.74	AVG	V	1.5	309
7386.000	49.83	1.66	51.49	74	-22.51	peak	V	1.5	219
7386.000	36.45	1.66	38.11	54	-15.89	AVG	V	1.5	177

Remark:

- 1) The MCS0 of rate of 802.11n20 is the worst case.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

Test mode:		802.11n40(13.5Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	53.80	-4.26	49.54	74	-24.46	peak	H	1.5	295
4824.000	36.92	-4.26	32.66	54	-21.34	AVG	H	1.5	43
7236.000	51.52	1.18	52.70	74	-21.30	peak	H	1.5	128
7236.000	37.41	1.18	38.59	54	-15.41	AVG	H	1.5	98
4824.000	55.96	-4.26	51.70	74	-22.30	peak	V	1.5	322
4824.000	38.93	-4.26	34.67	54	-19.33	AVG	V	1.5	0
7236.000	50.69	1.18	51.87	74	-22.13	peak	V	1.5	175
7236.000	35.96	1.18	37.14	54	-16.86	AVG	V	1.5	71

Test mode:		802.11n40(13.5Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	52.28	-4.12	48.16	74	-25.84	peak	H	1.5	218
4874.000	37.64	-4.12	33.52	54	-20.48	AVG	H	1.5	339
7311.000	49.97	1.46	51.43	74	-22.57	peak	H	1.5	87
7311.000	36.09	1.46	37.55	54	-16.45	AVG	H	1.5	251
4874.000	52.69	-4.12	48.57	74	-25.43	peak	V	1.5	98
4874.000	36.28	-4.12	32.16	54	-21.84	AVG	V	1.5	227
7311.000	48.82	1.46	50.28	74	-23.72	peak	V	1.5	326
7311.000	36.24	1.46	37.70	54	-16.30	AVG	V	1.5	321

Test mode:		802.11n40(13.5Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4924.000	51.56	-4.03	47.53	74	-26.47	peak	H	1.5	81
4924.000	36.99	-4.03	32.96	54	-21.04	AVG	H	1.5	273
7386.000	49.45	1.66	51.11	74	-22.89	peak	H	1.5	248
7386.000	36.62	1.66	38.28	54	-15.72	AVG	H	1.5	127
4924.000	54.12	-4.03	50.09	74	-23.91	peak	V	1.5	299
4924.000	38.28	-4.03	34.25	54	-19.75	AVG	V	1.5	264
7386.000	51.12	1.66	52.78	74	-21.22	peak	V	1.5	25
7386.000	36.72	1.66	38.38	54	-15.62	AVG	V	1.5	202

Remark:

- 1) The MCS0 of rate of 802.11n40 is the worst case.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

5.11 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205		
Test Method:	ANSI C63.10 2013		
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)		
Limit:	Frequency	Limit (dBuV/m @3m)	Remark
	30MHz-88MHz	40.0	Quasi-peak Value
	88MHz-216MHz	43.5	Quasi-peak Value
	216MHz-960MHz	46.0	Quasi-peak Value
	960MHz-1GHz	54.0	Quasi-peak Value
	Above 1GHz	54.0	Average Value
		74.0	Peak Value

Test Setup:

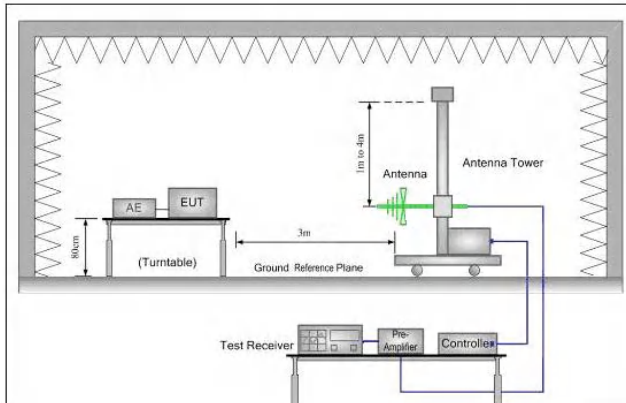


Figure 1. 30MHz to 1GHz

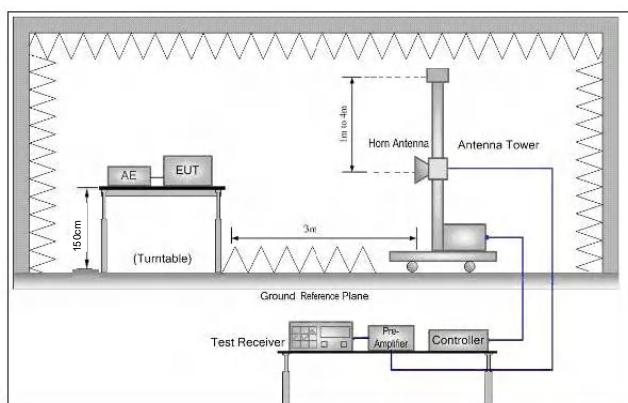


Figure 2. Above 1 GHz

Test Procedure:

- 1) Below 1G: The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
 - 2) Above 1G: The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- Note: For the radiated emission test above 1GHz:
- Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
 - The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
 - For each suspected emission, the EUT was arranged to its worst case and

	then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case . i. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates. Transmitting mode.
Final Test Mode:	Pretest the EUT at Transmitting mode, found the Transmitting mode which it is worse case. Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20); 13.5Mbps of rate is the worst case of 802.11n(HT40). Only the worst case is recorded in the report.
Test Results:	Pass

Test data:

Worse case mode:		802.11b(1Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
2390.000	58.83	-9.2	49.63	74	-24.37	peak	H	1.5	0
2390.000	44.76	-9.2	35.56	54	-18.44	AVG	H	1.5	306
2400.000	60.21	-9.39	50.82	74	-23.18	peak	H	1.5	32
2400.000	46.01	-9.39	36.62	54	-17.38	AVG	H	1.5	101
2390.000	59.20	-9.2	50.00	74	-24.00	peak	V	1.5	341
2390.000	44.03	-9.2	34.83	54	-19.17	AVG	V	1.5	252
2400.000	60.23	-9.39	50.84	74	-23.16	peak	V	1.5	353
2400.000	46.40	-9.39	37.01	54	-16.99	AVG	V	1.5	118

Worse case mode:		802.11b(1Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
2483.500	57.63	-9.29	48.34	74	-25.66	peak	H	1.5	209
2483.500	43.88	-9.29	34.59	54	-19.41	AVG	H	1.5	244
2483.500	58.08	-9.29	48.79	74	-25.21	peak	V	1.5	348
2483.500	45.75	-9.29	36.46	54	-17.54	AVG	V	1.5	209

Worse case mode:		802.11g(6Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
2390.000	58.96	-9.2	49.76	74	-24.24	peak	H	1.5	147
2390.000	44.65	-9.2	35.45	54	-18.55	AVG	H	1.5	181
2400.000	59.80	-9.39	50.41	74	-23.59	peak	H	1.5	22
2400.000	46.79	-9.39	37.40	54	-16.60	AVG	H	1.5	58
2390.000	58.54	-9.2	49.34	74	-24.66	peak	V	1.5	169
2390.000	44.12	-9.2	34.92	54	-19.08	AVG	V	1.5	184
2400.000	60.08	-9.39	50.69	74	-23.31	peak	V	1.5	328
2400.000	46.87	-9.39	37.48	54	-16.52	AVG	V	1.5	288

Worse case mode:		802.11g(6Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
2483.500	57.87	-9.29	48.58	74	-25.42	peak	H	1.5	110
2483.500	43.65	-9.29	34.36	54	-19.64	AVG	H	1.5	159
2483.500	57.94	-9.29	48.65	74	-25.35	peak	V	1.5	151
2483.500	45.47	-9.29	36.18	54	-17.82	AVG	V	1.5	280

Worse case mode:		802.11n(HT20)(6.5Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2390.000	58.51	-9.2	49.31	74	-24.69	peak	H	1.5	219
2390.000	44.11	-9.2	34.91	54	-19.09	AVG	H	1.5	345
2400.000	59.59	-9.39	50.20	74	-23.80	peak	H	1.5	21
2400.000	46.50	-9.39	37.11	54	-16.89	AVG	H	1.5	108
2390.000	59.13	-9.2	49.93	74	-24.07	peak	V	1.5	356
2390.000	44.35	-9.2	35.15	54	-18.85	AVG	V	1.5	214
2400.000	59.73	-9.39	50.34	74	-23.66	peak	V	1.5	125
2400.000	46.38	-9.39	36.99	54	-17.01	AVG	V	1.5	8

Worse case mode:		802.11n(HT20)(6.5Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2483.500	57.84	-9.29	48.55	74	-25.45	peak	H	1.5	186
2483.500	44.03	-9.29	34.74	54	-19.26	AVG	H	1.5	195
2483.500	58.28	-9.29	48.99	74	-25.01	peak	V	1.5	219
2483.500	46.03	-9.29	36.74	54	-17.26	AVG	V	1.5	6

Worse case mode:		802.11n(HT40)(13.5Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2390.000	58.27	-9.2	49.07	74	-24.93	peak	H	1.5	269
2390.000	44.41	-9.2	35.21	54	-18.79	AVG	H	1.5	352
2400.000	60.18	-9.39	50.79	74	-23.21	peak	H	1.5	56
2400.000	46.15	-9.39	36.76	54	-17.24	AVG	H	1.5	181
2390.000	59.06	-9.2	49.86	74	-24.14	peak	V	1.5	167
2390.000	44.32	-9.2	35.12	54	-18.88	AVG	V	1.5	22
2400	59.54	-9.39	50.15	74	-23.85	peak	V	1.5	270
2400	46.11	-9.39	36.72	54	-17.28	AVG	V	1.5	146

Worse case mode:		802.11n(HT40)(13.5Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2483.500	57.98	-9.29	48.69	74	-25.31	peak	H	1.5	313
2483.500	44.43	-9.29	35.14	54	-18.86	AVG	H	1.5	76
2483.500	57.44	-9.29	48.15	74	-25.85	peak	V	1.5	242
2483.500	46.13	-9.29	36.84	54	-17.16	AVG	V	1.5	105

Note:

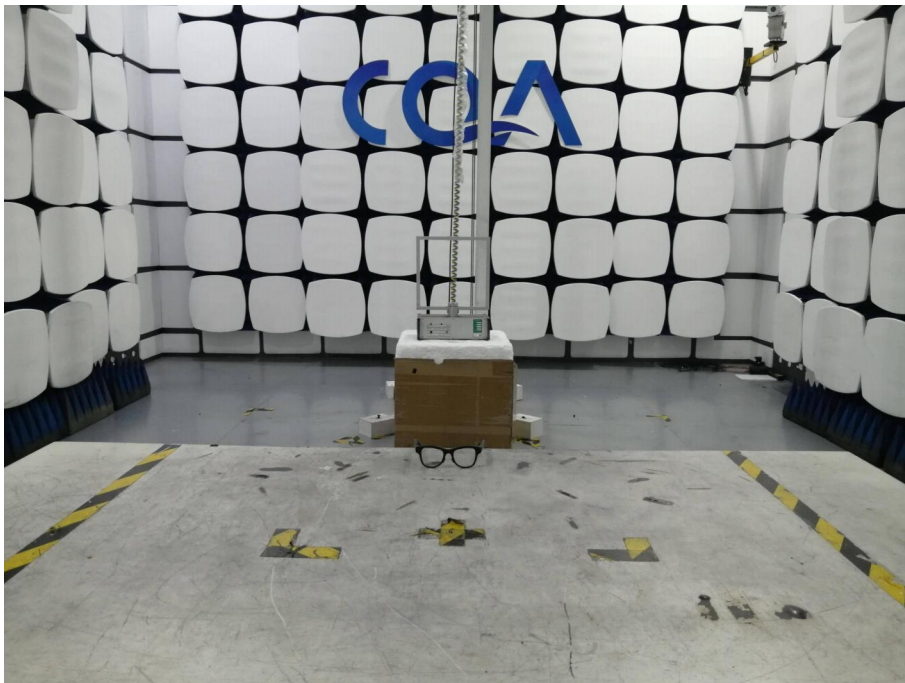
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

6 Photographs - EUT Test Setup

6.1 Radiated Spurious Emission

9kHz~30MHz:



30MHz~1GHz:



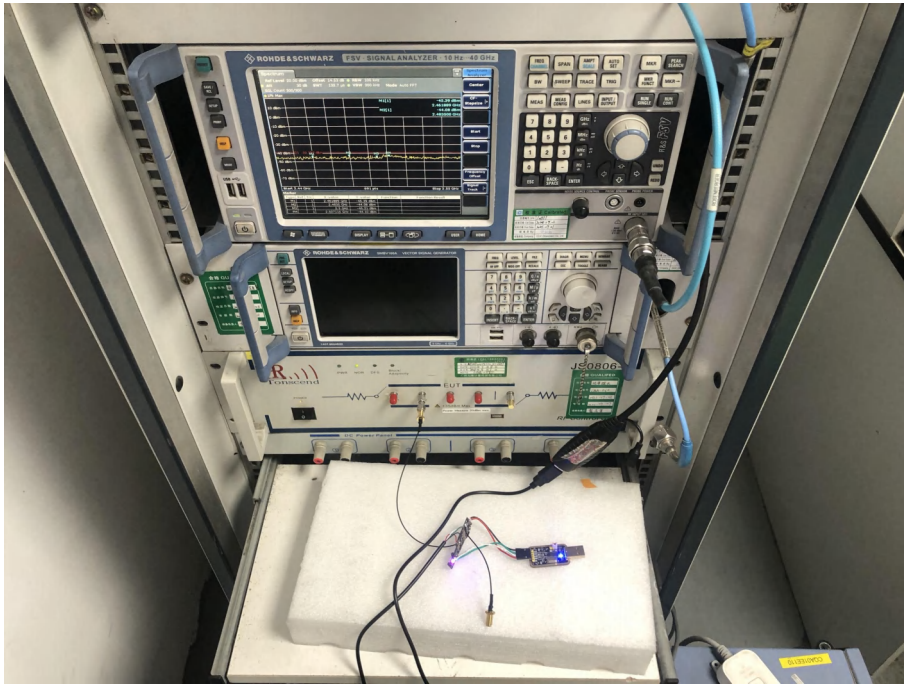
Above 1GHz:



6.2 Conducted Emission



6.3 RF Conducted measurement



7 Photographs - EUT Constructional Details

Refer to PHOTOGRAPHS OF EUT for CQASZ20250801810E-01.

*** END OF REPORT ***