9.5 Spurious RF conducted emissions

Test Method

1. Use the following spectrum analyzer settings:
   Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.
   RBW = 100 kHz, VBW≥RBW, Sweep = auto, Detector function = peak, Trace = max hold
2. Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded.
3. The level displayed must comply with the limit specified in this Section. Submit these plots.
4. Repeat above procedures until all frequencies measured were complete.

Limit

Frequency Range MHz	Limit (dBc)
30-25000	-20

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Spurious RF conducted emissions

Test Mode(MHz)	Antenna	Channel (MHz)	Freq Range (MHz)	RefLevel	Result(dBm)	Limit(dBm)	Verdict
11B	Ant1	2412	Reference	5.32dBm	5.32	---	PASS
			30~1000	30~1000MHz	-66.59	<=-14.68	PASS
			1000~26500	1000~26500MHz	-43.1	<=-14.68	PASS
	Ant2	2412	Reference	5.46dBm	5.46	---	PASS
			30~1000	30~1000MHz	-68.54	<=-14.54	PASS
			1000~26500	1000~26500MHz	-44.16	<=-14.54	PASS
	Ant1	2437	Reference	5.84dBm	5.84	---	PASS
			30~1000	30~1000MHz	-67.78	<=-14.16	PASS
			1000~26500	1000~26500MHz	-50.92	<=-14.16	PASS
	Ant2	2437	Reference	5.60dBm	5.60	---	PASS
			30~1000	30~1000MHz	-67.99	<=-14.4	PASS
			1000~26500	1000~26500MHz	-48.58	<=-14.4	PASS
	Ant1	2462	Reference	5.49dBm	5.49	---	PASS
			30~1000	30~1000MHz	-67.91	<=-14.51	PASS
			1000~26500	1000~26500MHz	-52.21	<=-14.51	PASS
	Ant2	2462	Reference	5.22dBm	5.22	---	PASS
			30~1000	30~1000MHz	-67.59	<=-14.78	PASS
			1000~26500	1000~26500MHz	-47.51	<=-14.78	PASS
11G	Ant1	2412	Reference	5.13dBm	5.13	---	PASS
			30~1000	30~1000MHz	-68.01	<=-14.87	PASS
			1000~26500	1000~26500MHz	-40.26	<=-14.87	PASS
	Ant2	2412	Reference	5.18dBm	5.18	---	PASS
			30~1000	30~1000MHz	-68.03	<=-14.82	PASS
			1000~26500	1000~26500MHz	-40.88	<=-14.82	PASS
	Ant1	2437	Reference	4.68dBm	4.68	---	PASS
			30~1000	30~1000MHz	-67.4	<=-15.32	PASS
			1000~26500	1000~26500MHz	-49.91	<=-15.32	PASS
	Ant2	2437	Reference	4.28dBm	4.28	---	PASS
			30~1000	30~1000MHz	-68.6	<=-15.72	PASS
			1000~26500	1000~26500MHz	-50.7	<=-15.72	PASS
	Ant1	2462	Reference	5.05dBm	5.05	---	PASS
			30~1000	30~1000MHz	-64.21	<=-14.95	PASS
			1000~26500	1000~26500MHz	-51.92	<=-14.95	PASS
	Ant2	2462	Reference	5.08dBm	5.08	---	PASS
			30~1000	30~1000MHz	-68.14	<=-14.92	PASS
			1000~26500	1000~26500MHz	-51.66	<=-14.92	PASS
11N20SISO	Ant1	2412	Reference	5.19dBm	5.19	---	PASS
			30~1000	30~1000MHz	-65.29	<=-14.81	PASS
			1000~26500	1000~26500MHz	-42.61	<=-14.81	PASS
	Ant2	2412	Reference	5.26dBm	5.26	---	PASS
			30~1000	30~1000MHz	-63.95	<=-14.74	PASS
			1000~26500	1000~26500MHz	-41.05	<=-14.74	PASS
	Ant1	2437	Reference	5.30dBm	5.30	---	PASS
			30~1000	30~1000MHz	-68.22	<=-14.7	PASS
			1000~26500	1000~26500MHz	-50.39	<=-14.7	PASS
	Ant2	2437	Reference	5.20dBm	5.20	---	PASS
			30~1000	30~1000MHz	-67.72	<=-14.8	PASS
			1000~26500	1000~26500MHz	-52.34	<=-14.8	PASS
	Ant1	2462	Reference	4.59dBm	4.59	---	PASS
			30~1000	30~1000MHz	-67.99	<=-15.41	PASS
			1000~26500	1000~26500MHz	-51.81	<=-15.41	PASS
	Ant2	2462	Reference	5.04dBm	5.04	---	PASS
			30~1000	30~1000MHz	-65.97	<=-14.96	PASS
			1000~26500	1000~26500MHz	-49.91	<=-14.96	PASS
11N40SISO	Ant1	2422	Reference	2.26dBm	2.26	---	PASS
			30~1000	30~1000MHz	-51.19	<=-17.74	PASS
			1000~26500	1000~26500MHz	-41.39	<=-17.74	PASS
	Ant2	2422	Reference	2.02dBm	2.02	---	PASS
			30~1000	30~1000MHz	-57.13	<=-17.98	PASS
			1000~26500	1000~26500MHz	-38.98	<=-17.98	PASS

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	Ant1	2437	Reference	2.79dBm	2.79	---	PASS
			30~1000	30~1000MHz	-47.35	<=-17.21	PASS
			1000~26500	1000~26500MHz	-47.2	<=-17.21	PASS
	Ant2	2437	Reference	2.32dBm	2.32	---	PASS
			30~1000	30~1000MHz	-57.28	<=-17.68	PASS
			1000~26500	1000~26500MHz	-45.31	<=-17.68	PASS
	Ant1	2452	Reference	2.54dBm	2.54	---	PASS
			30~1000	30~1000MHz	-50.2	<=-17.46	PASS
			1000~26500	1000~26500MHz	-49.19	<=-17.46	PASS
	Ant2	2452	Reference	2.75dBm	2.75	---	PASS
			30~1000	30~1000MHz	-53.53	<=-17.25	PASS
			1000~26500	1000~26500MHz	-38.36	<=-17.25	PASS

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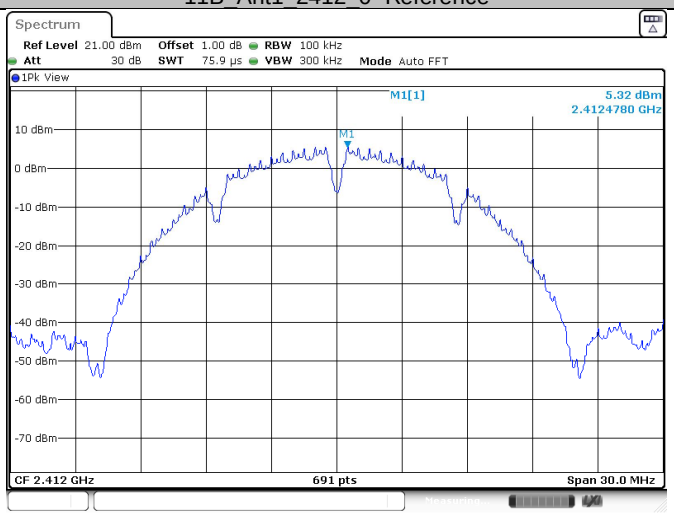

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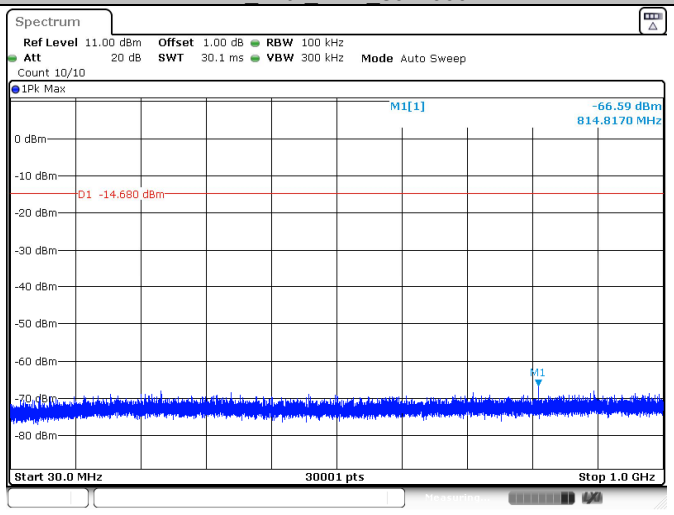

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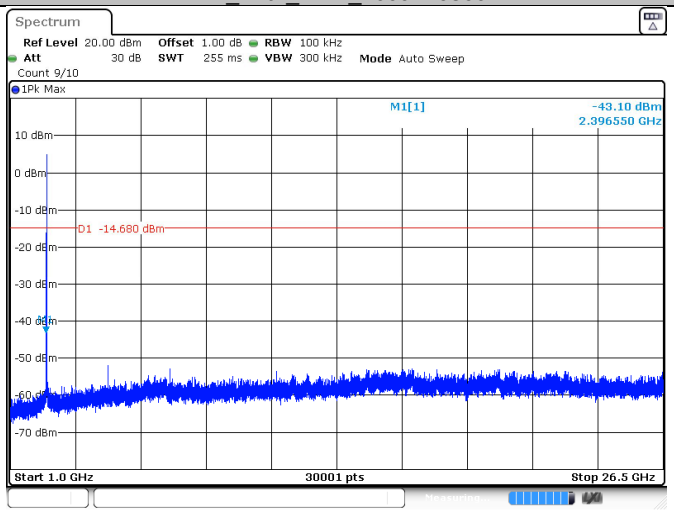

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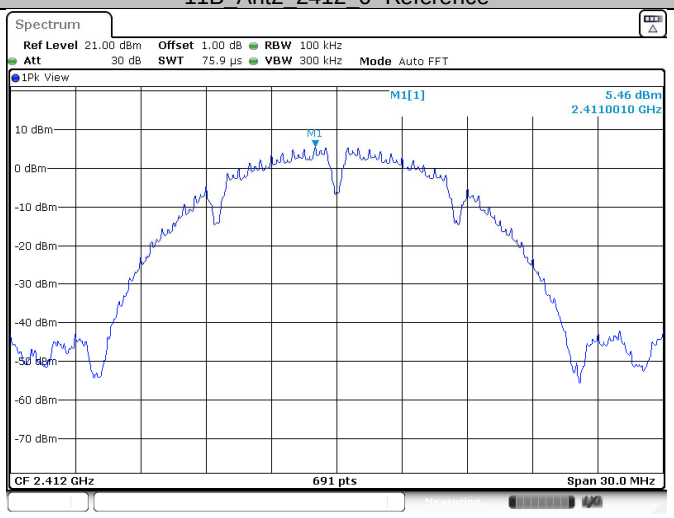

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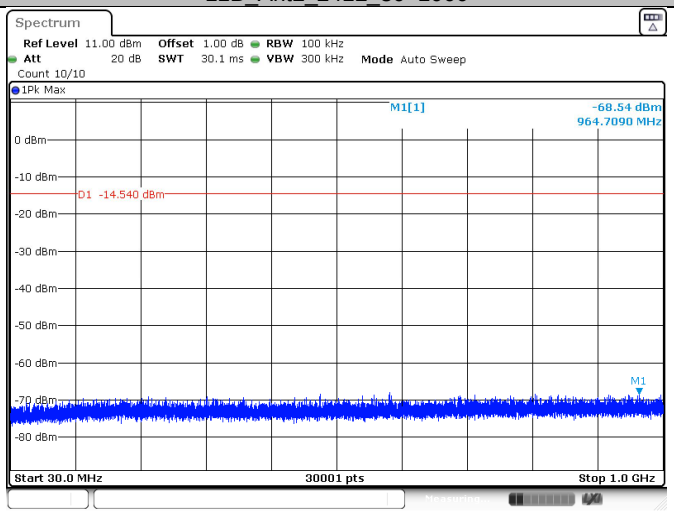

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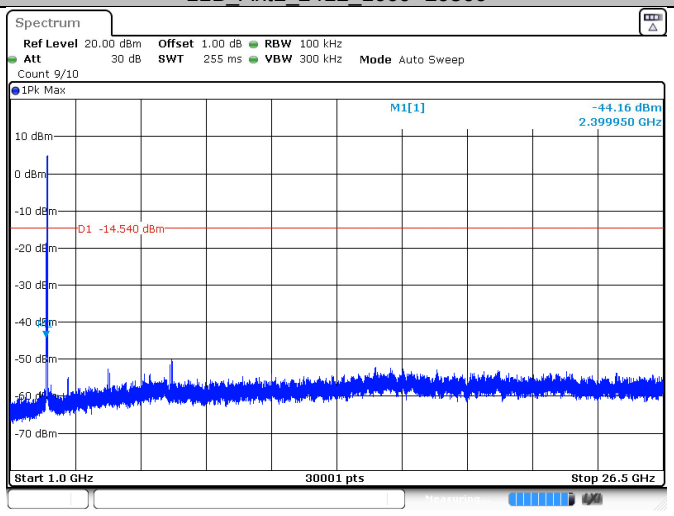

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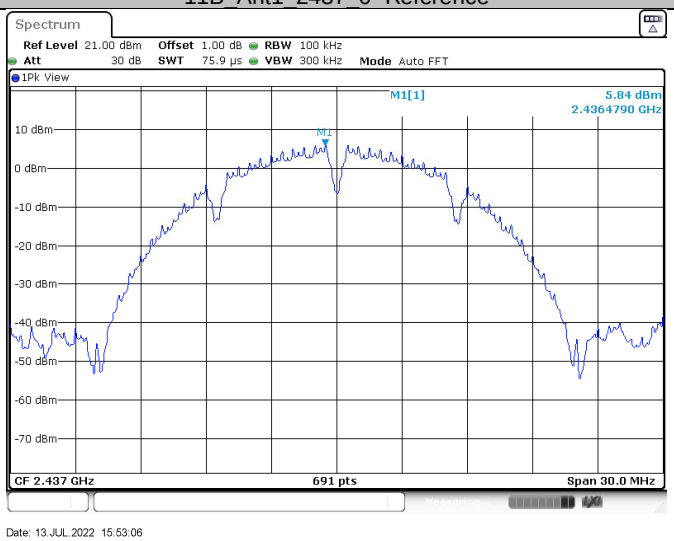

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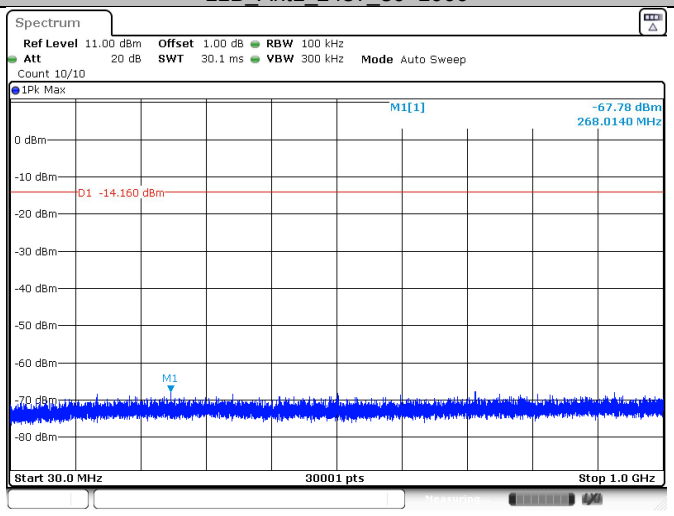

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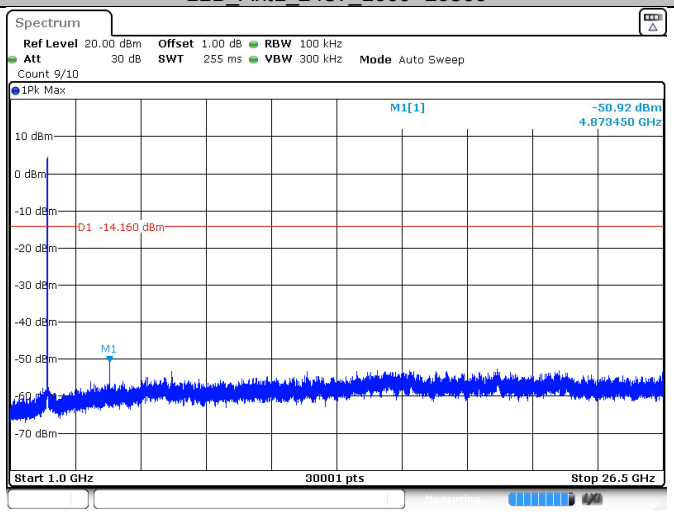

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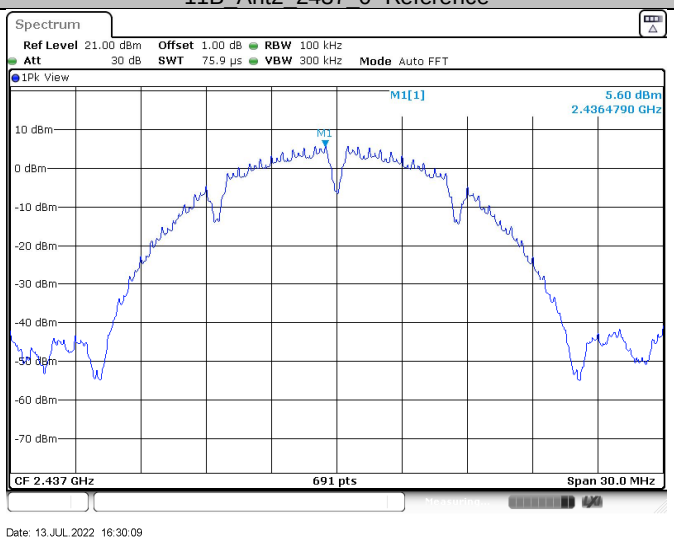

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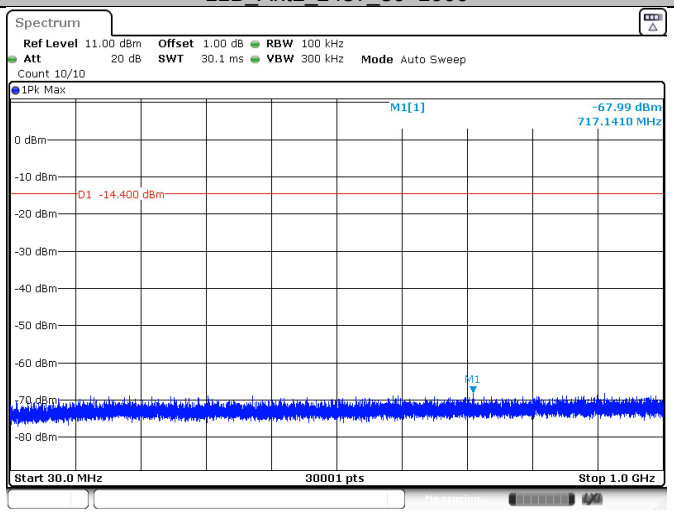

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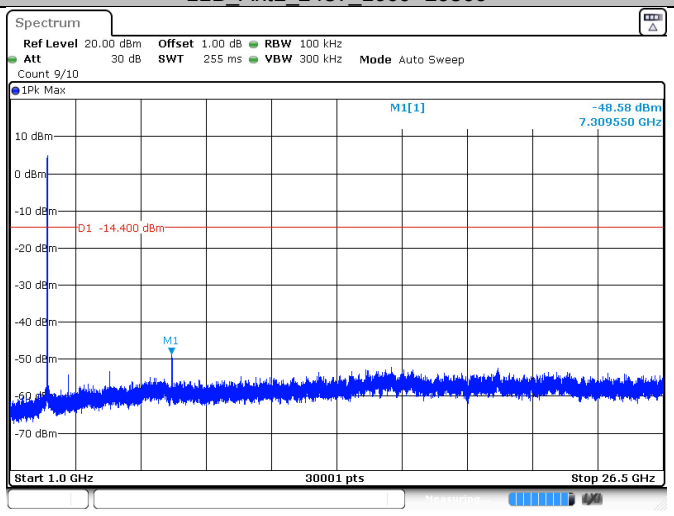

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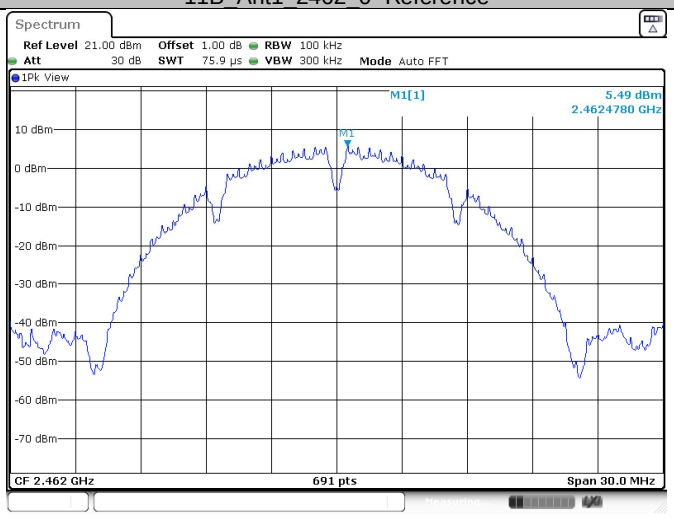

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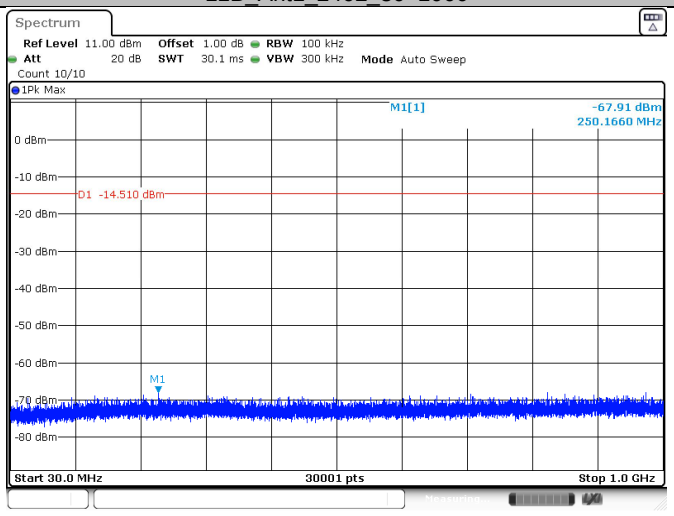

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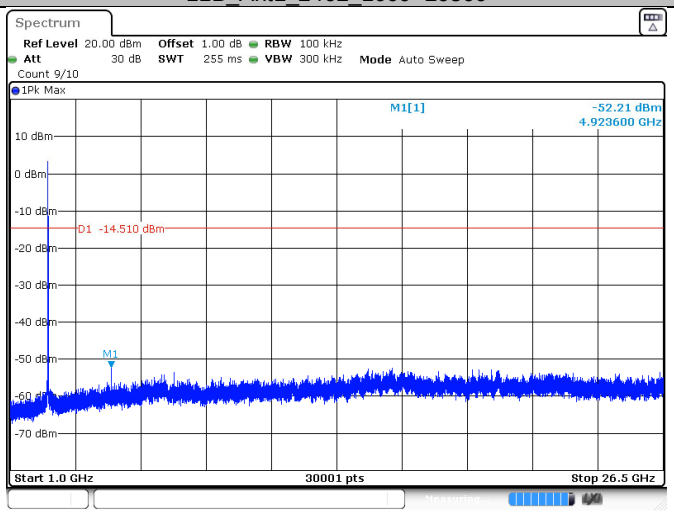

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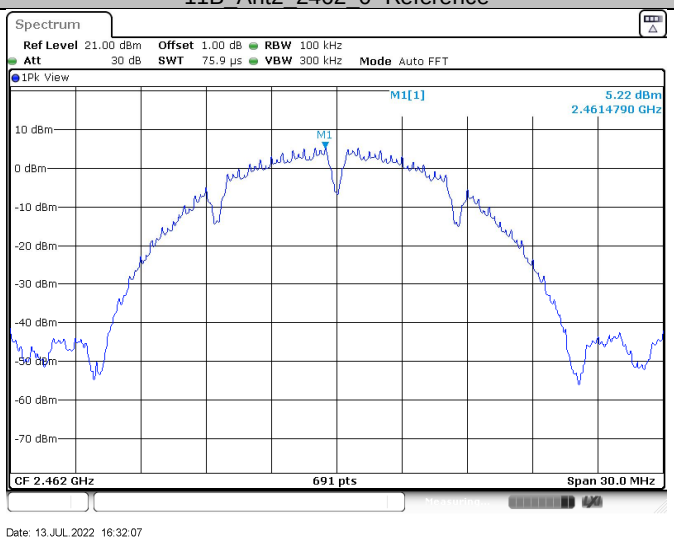
11B_Ant2_2462_0~Reference



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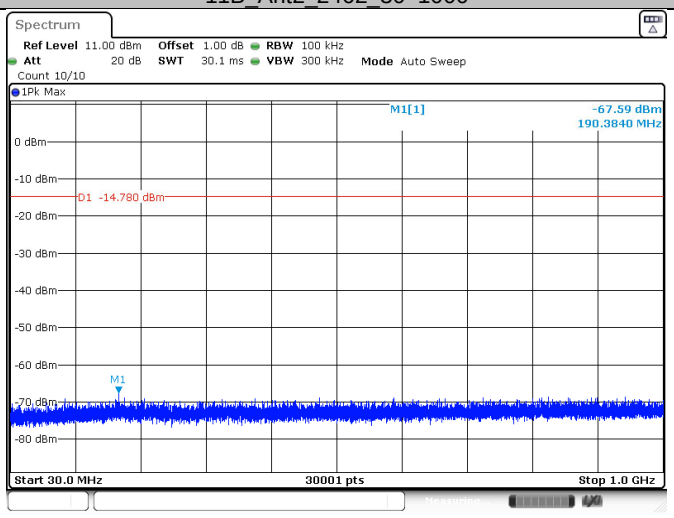

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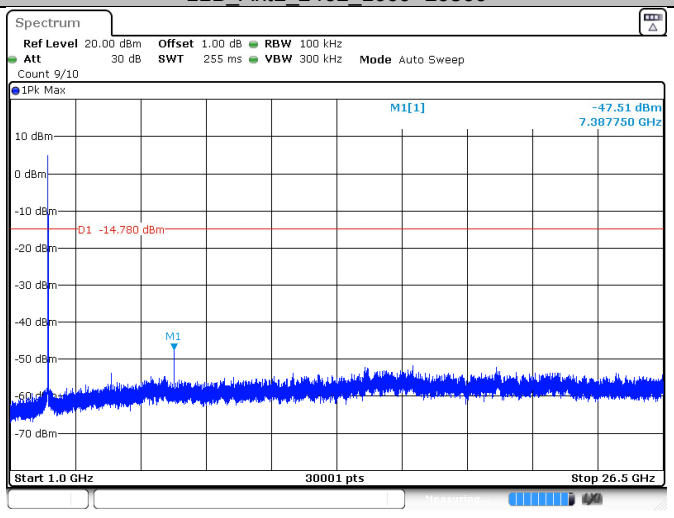

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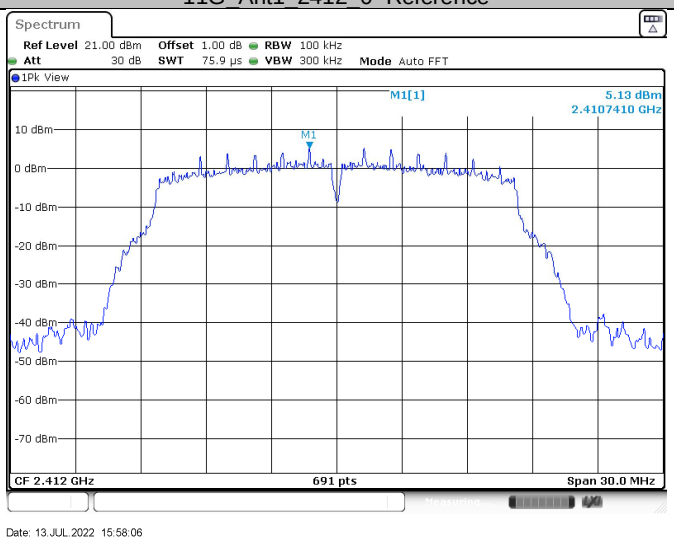
11G_Ant1_2412_0~Reference



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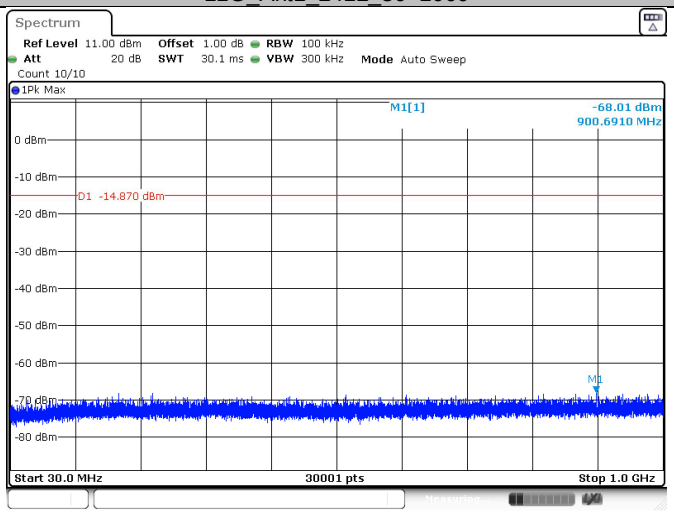

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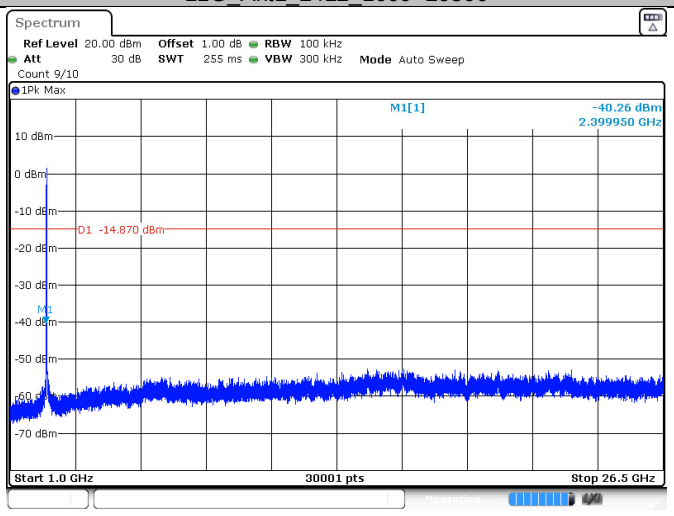

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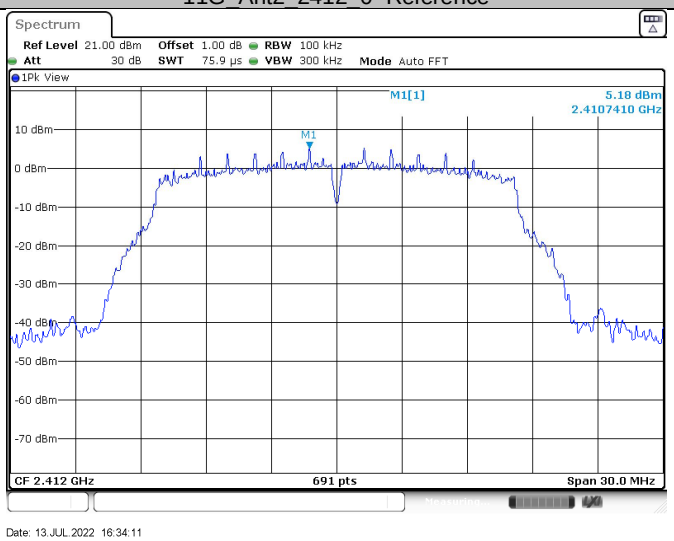
11G_Ant2_2412_0~Reference



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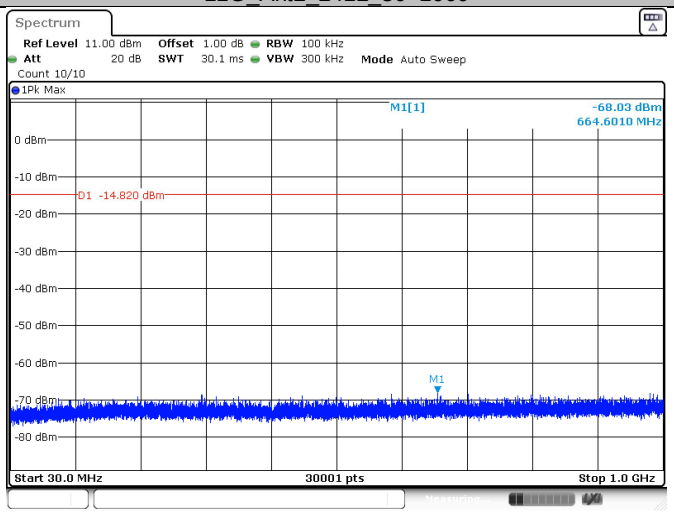

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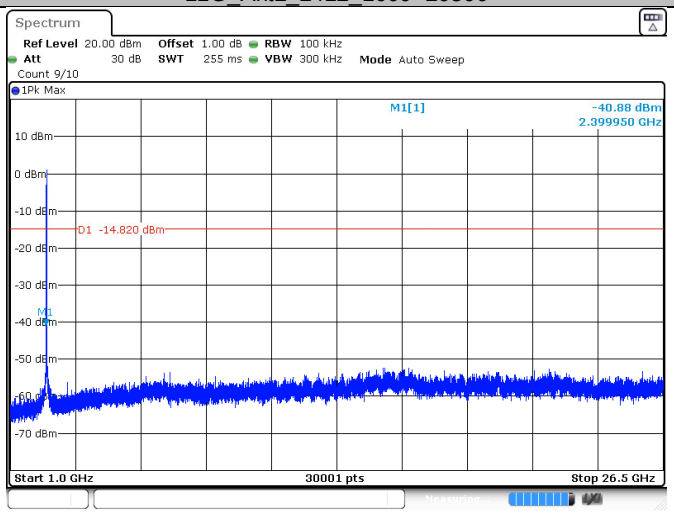

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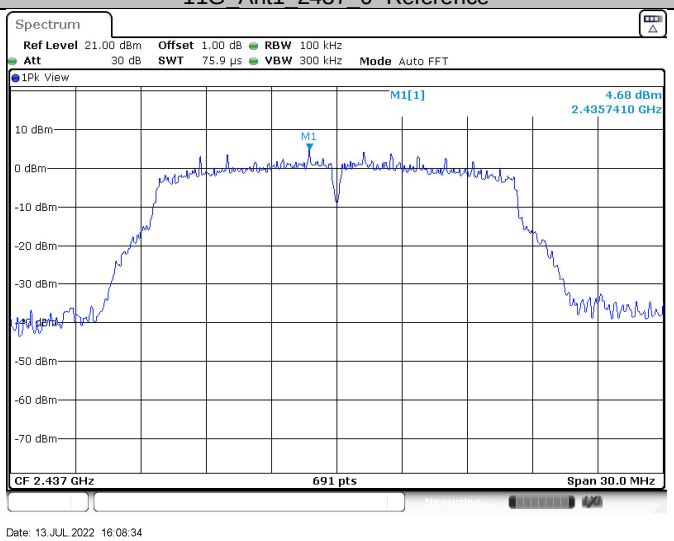

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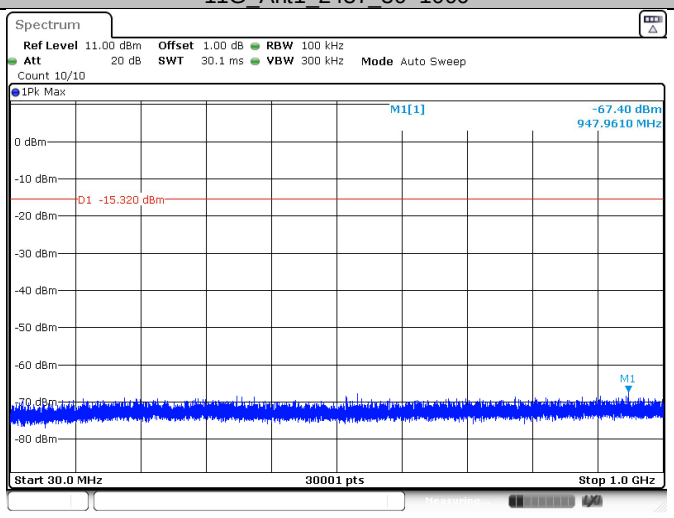

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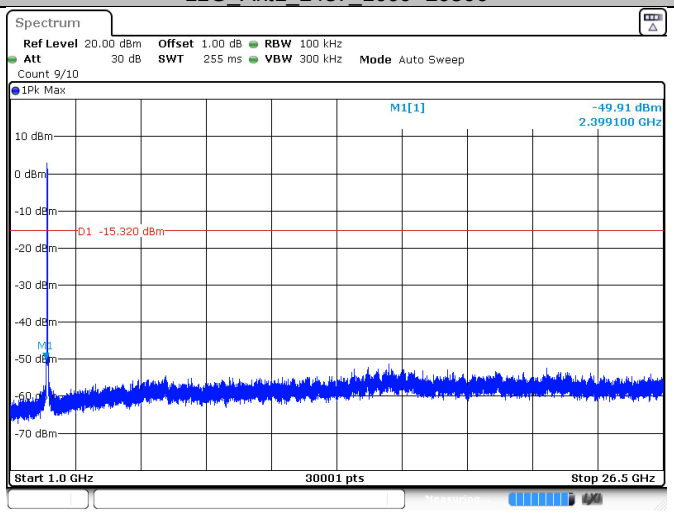

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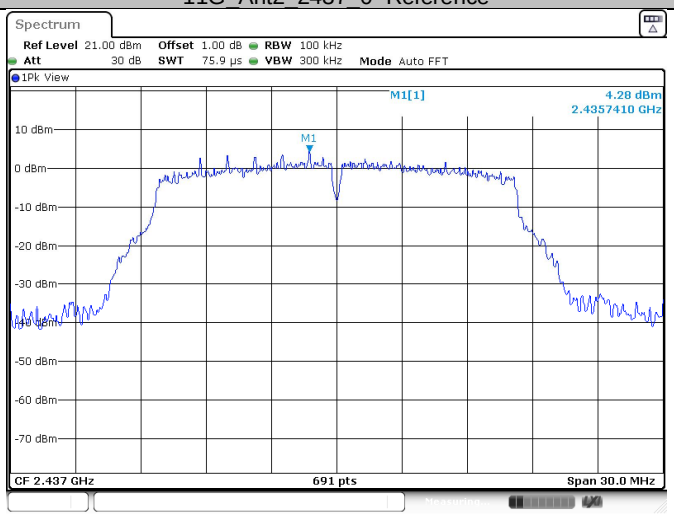

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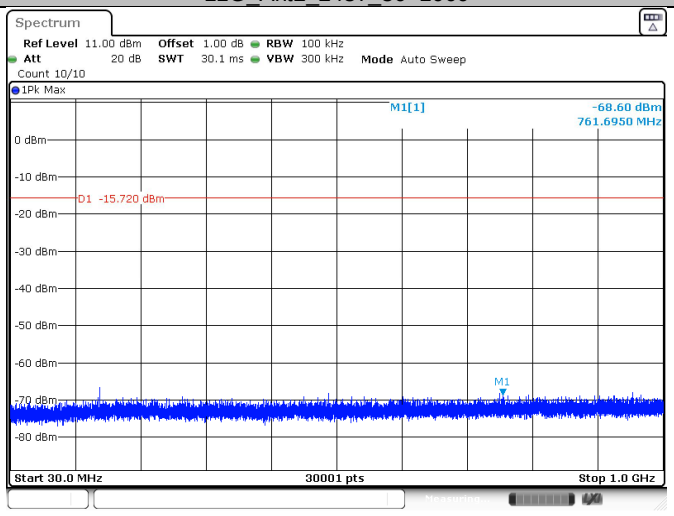

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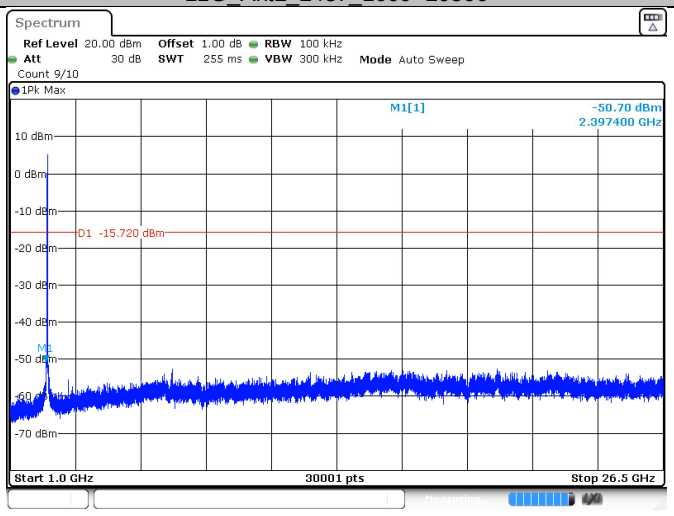

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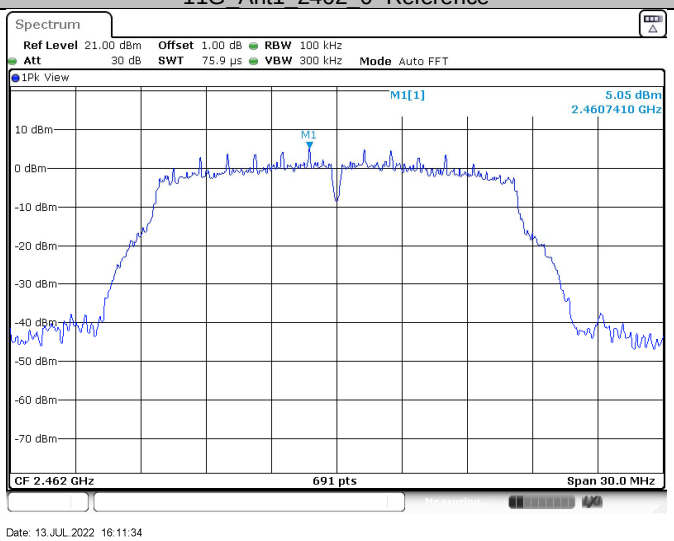
11G_Ant1_2462_0~Reference



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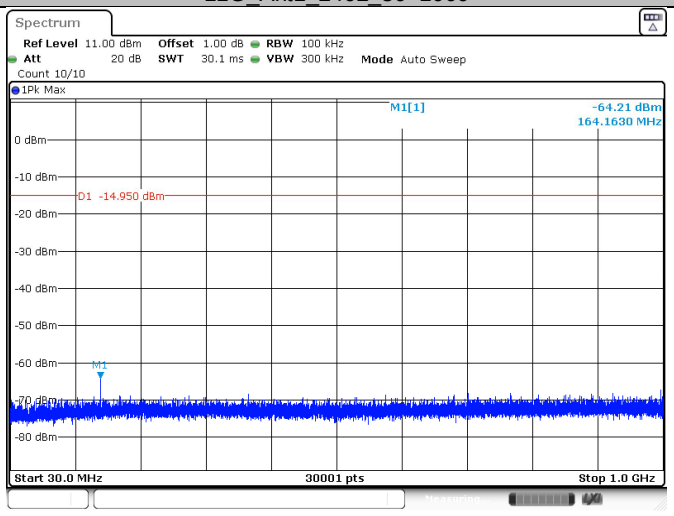

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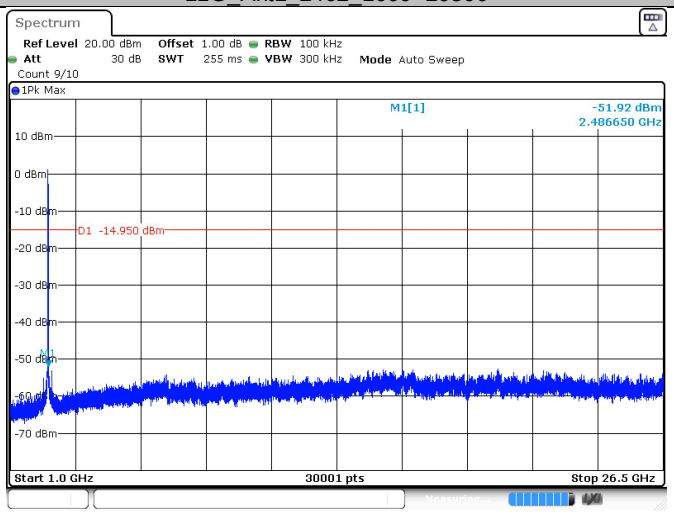

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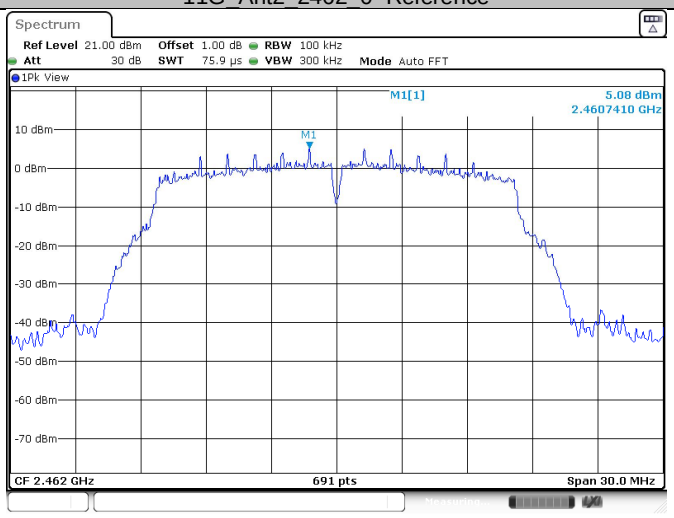

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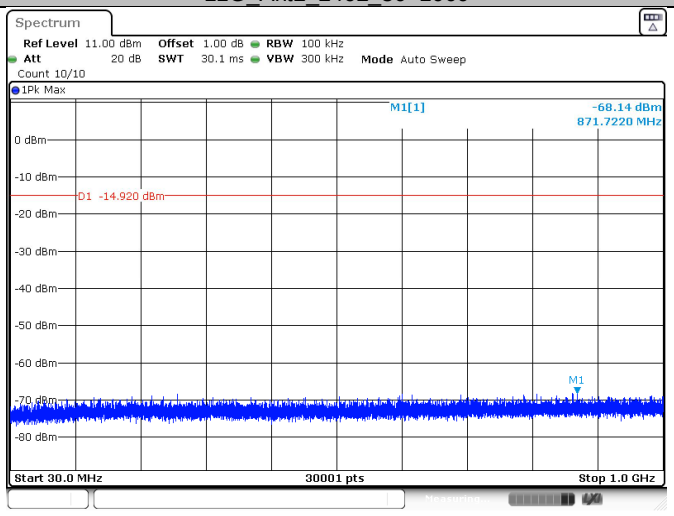

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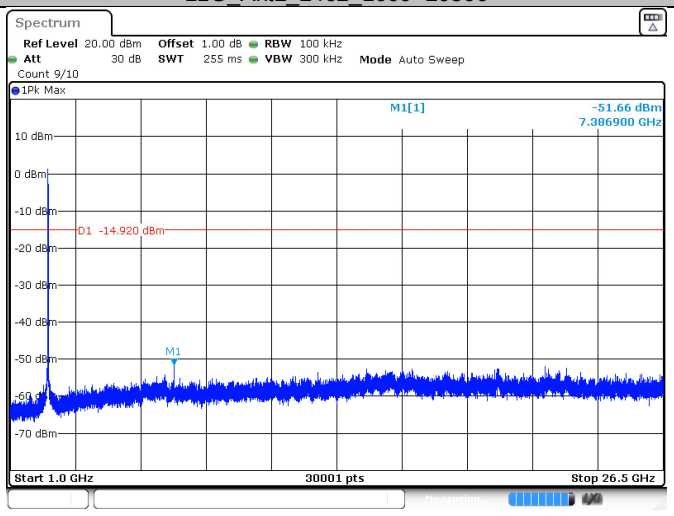

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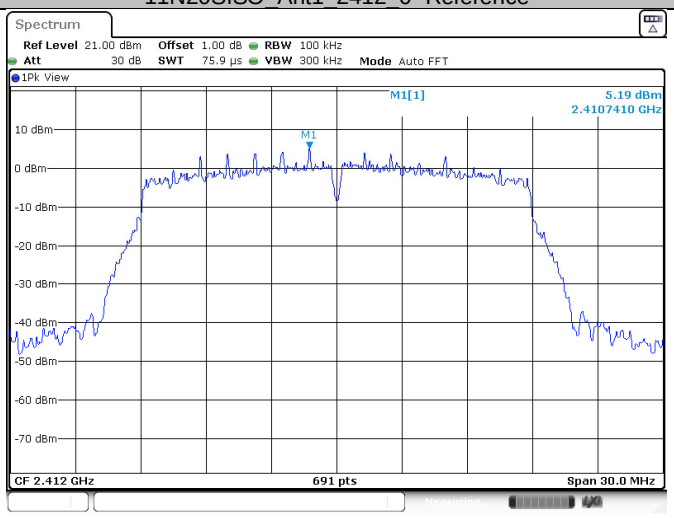

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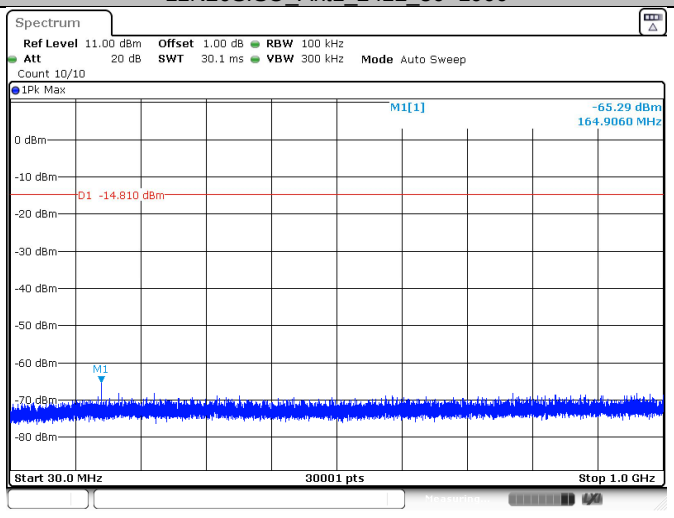

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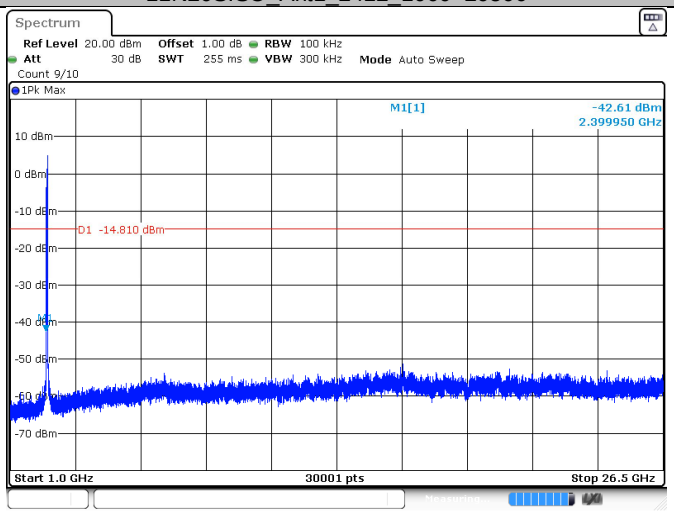

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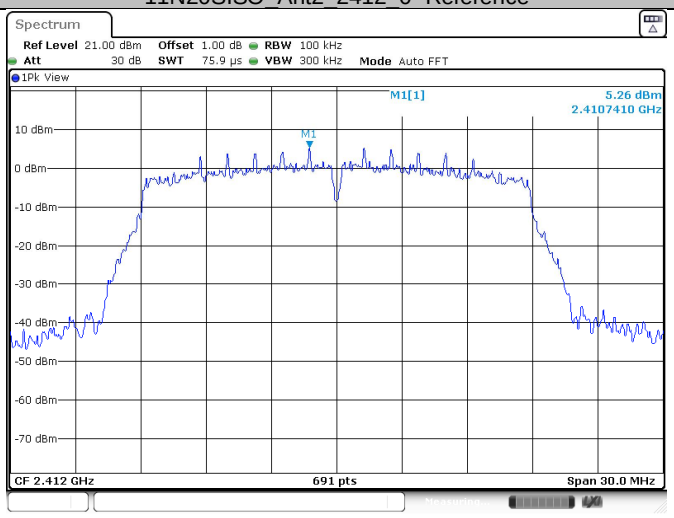

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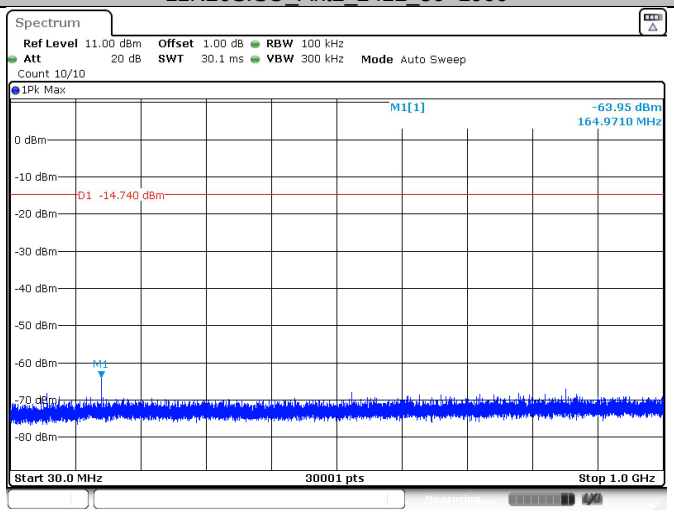

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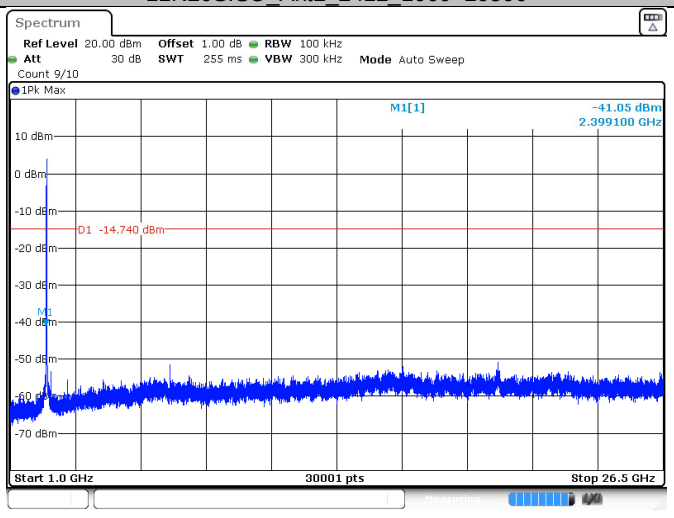

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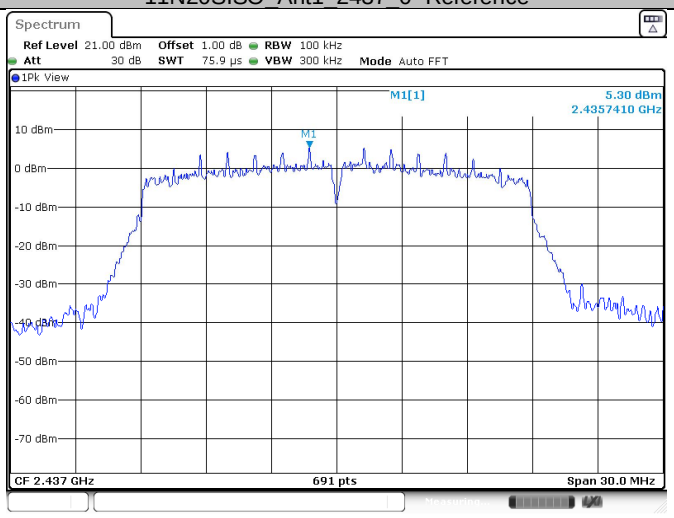

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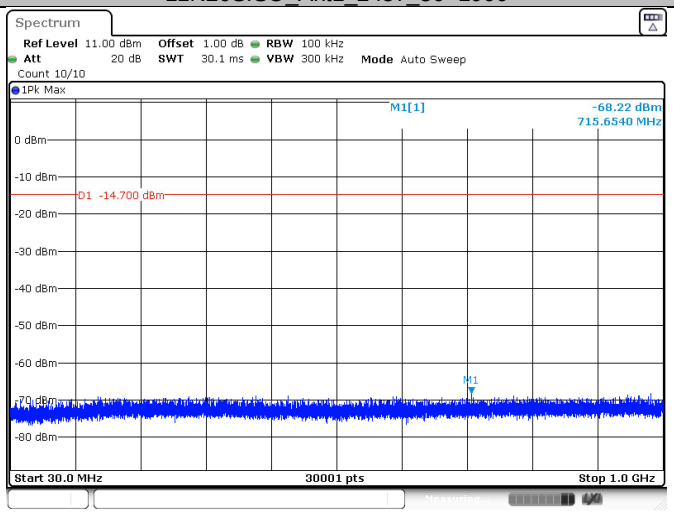

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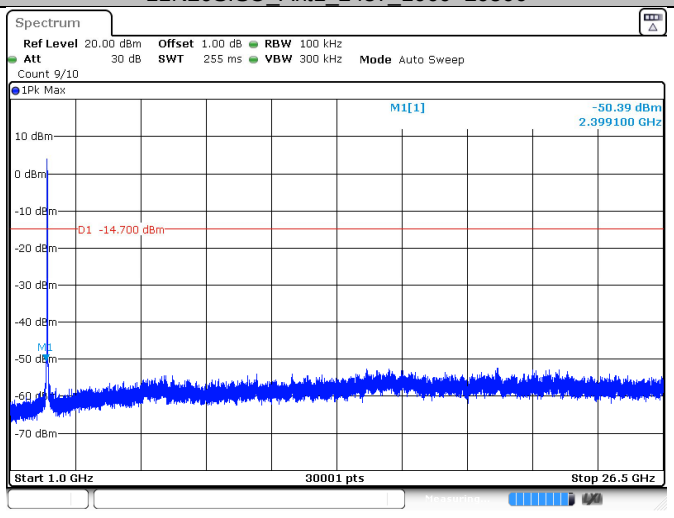

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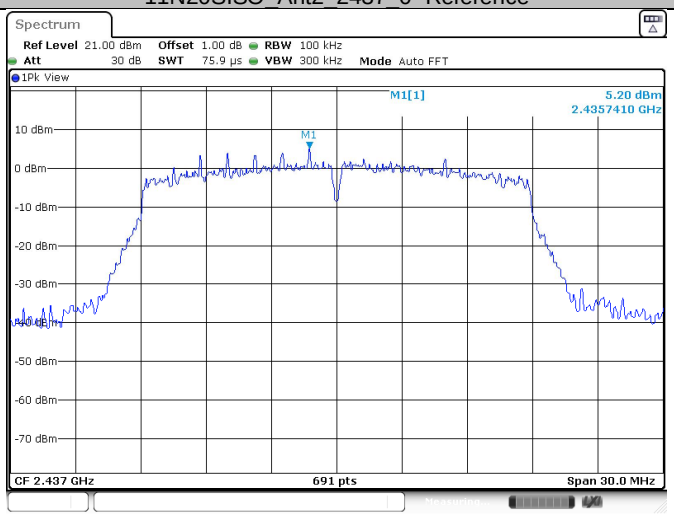

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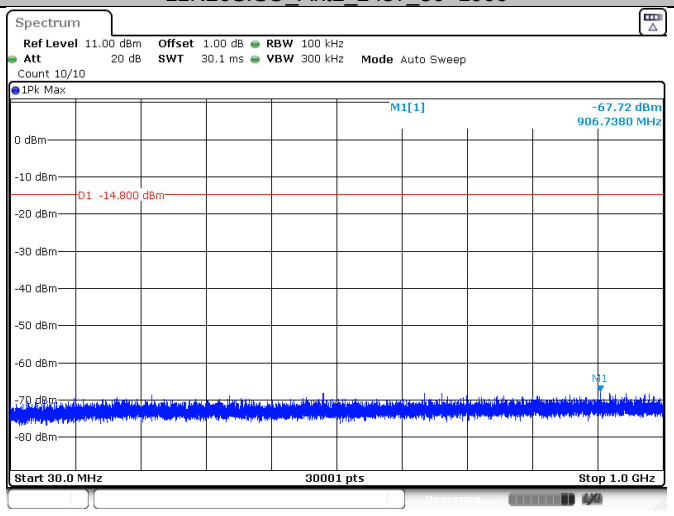

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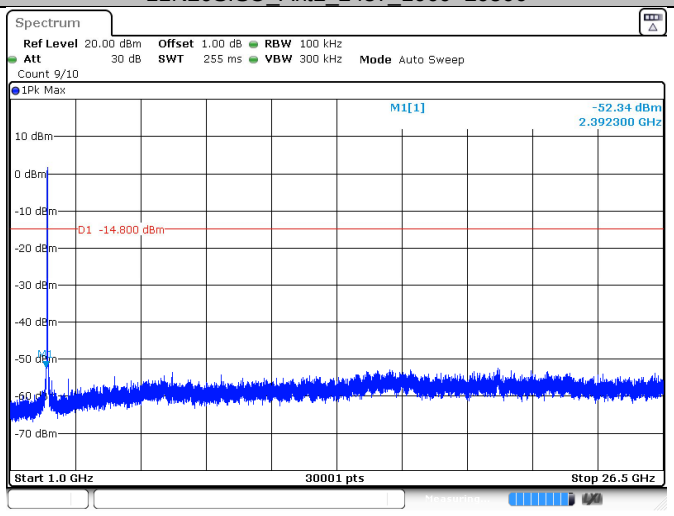

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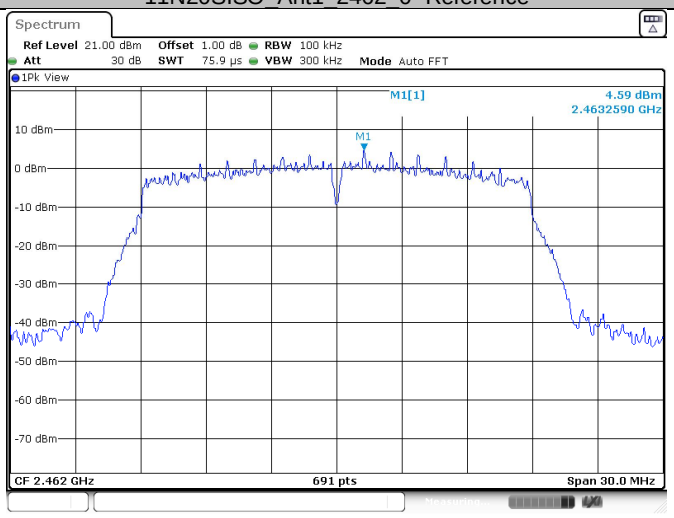

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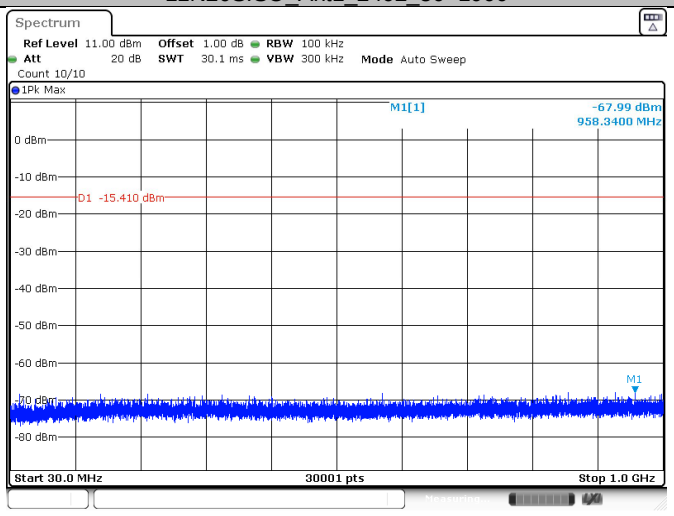

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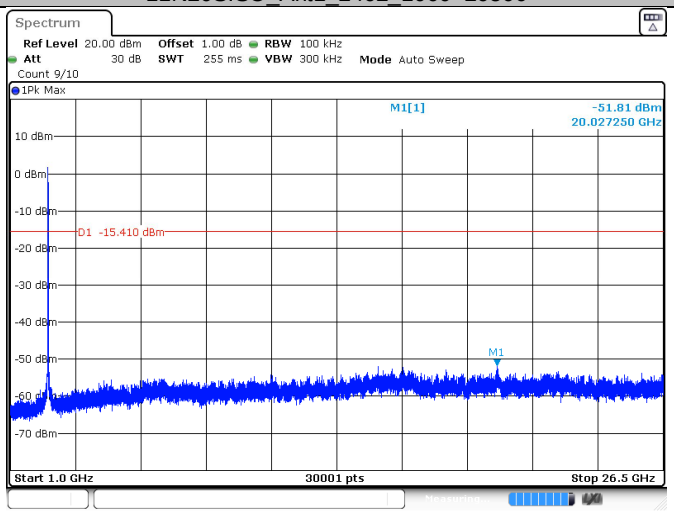

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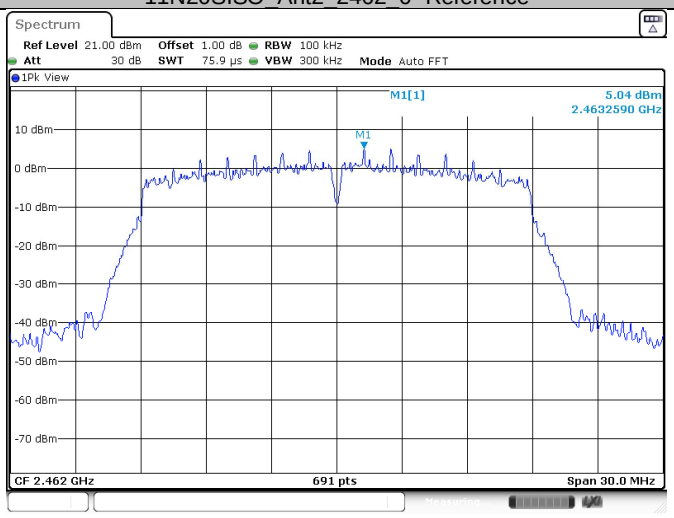

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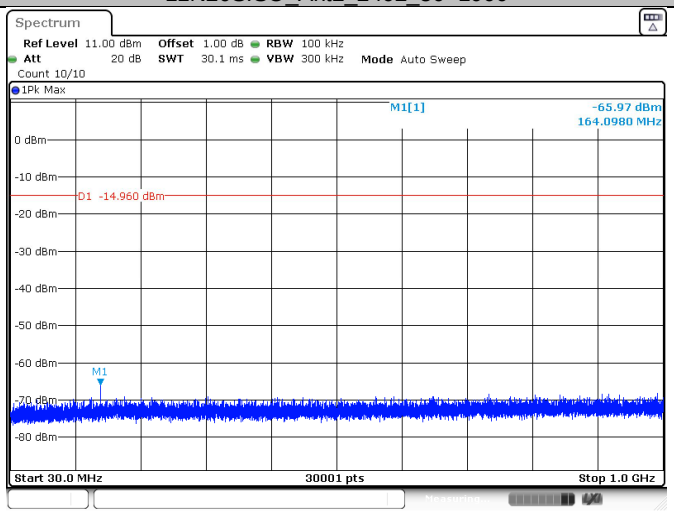

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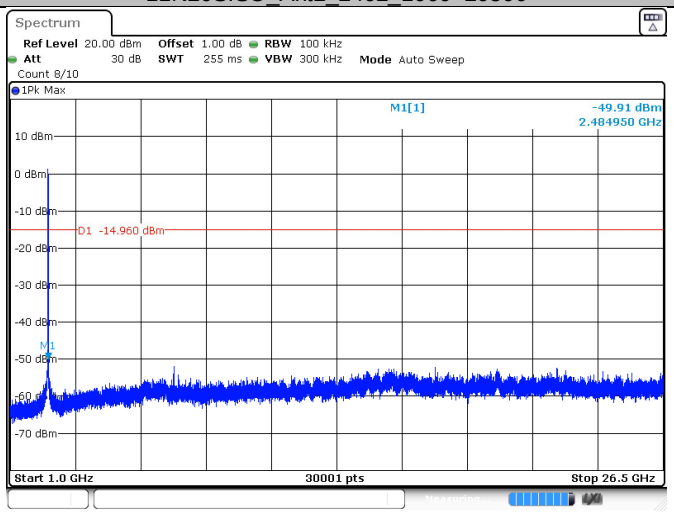

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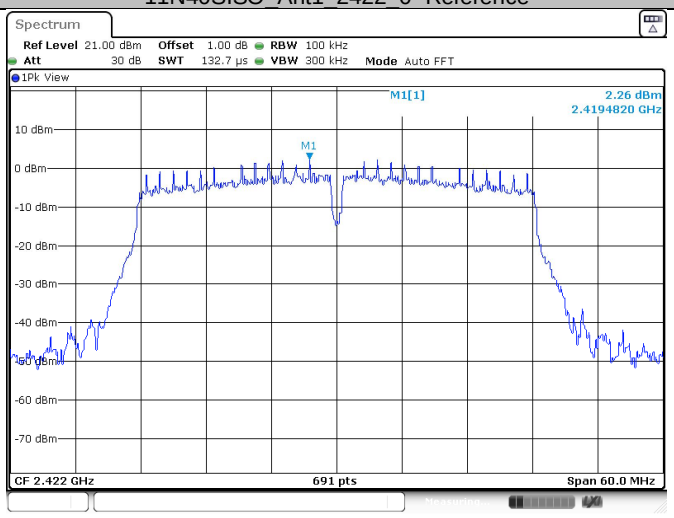

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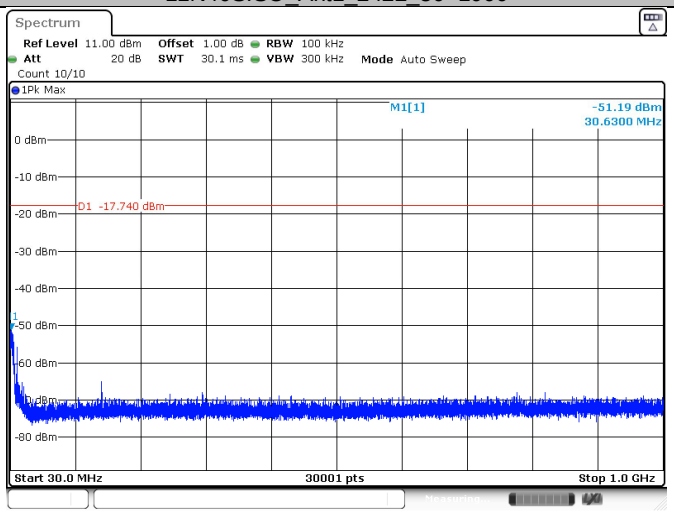

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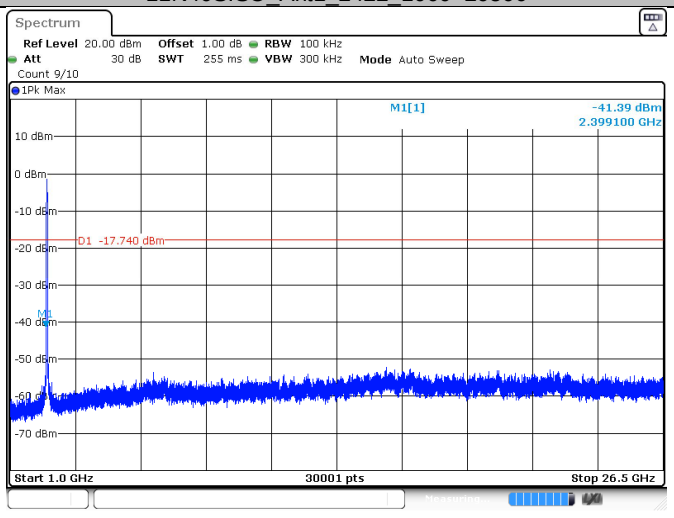

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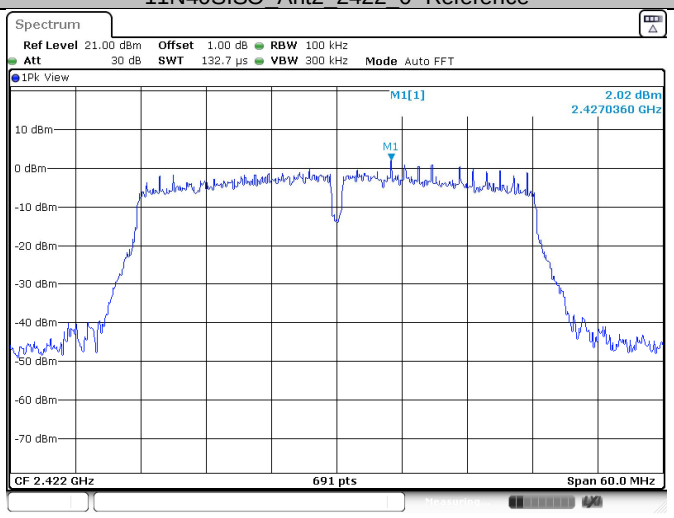

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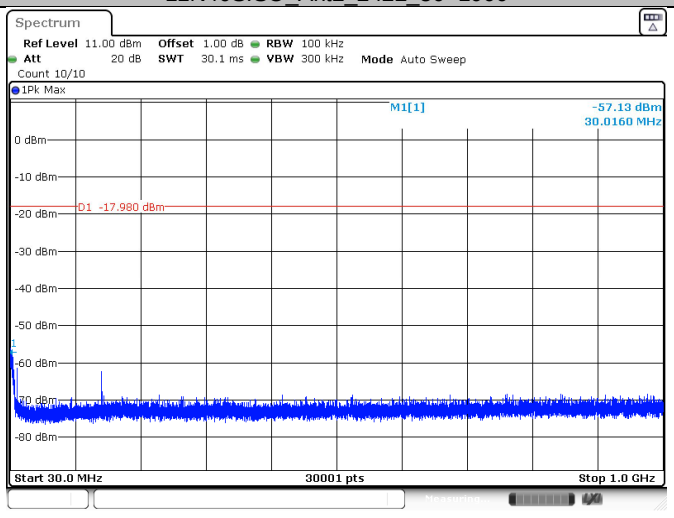

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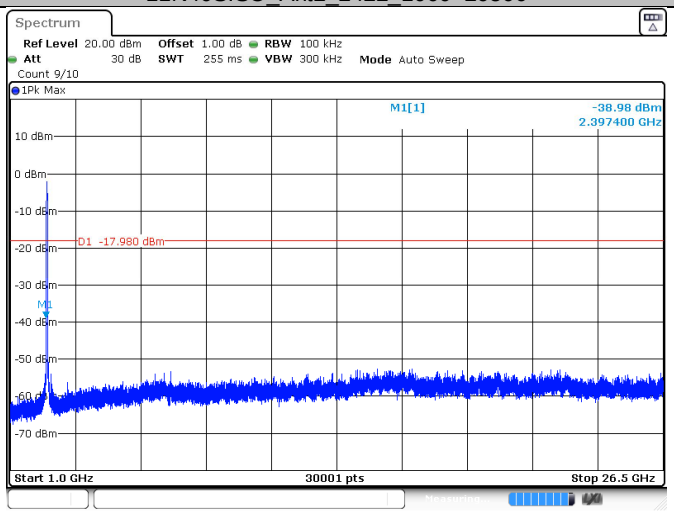

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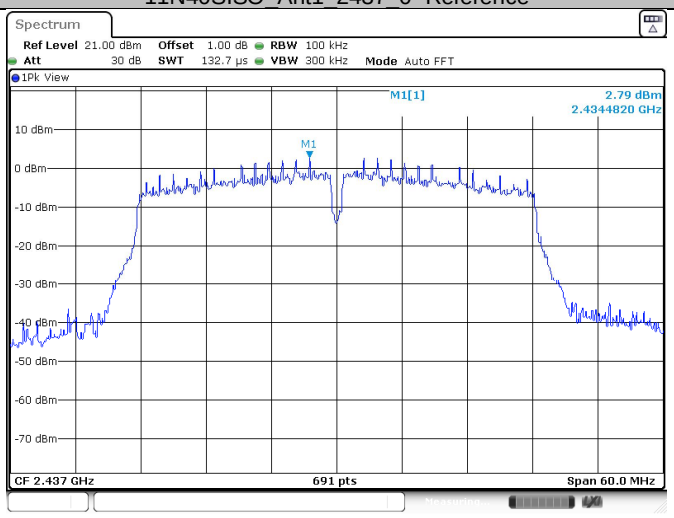

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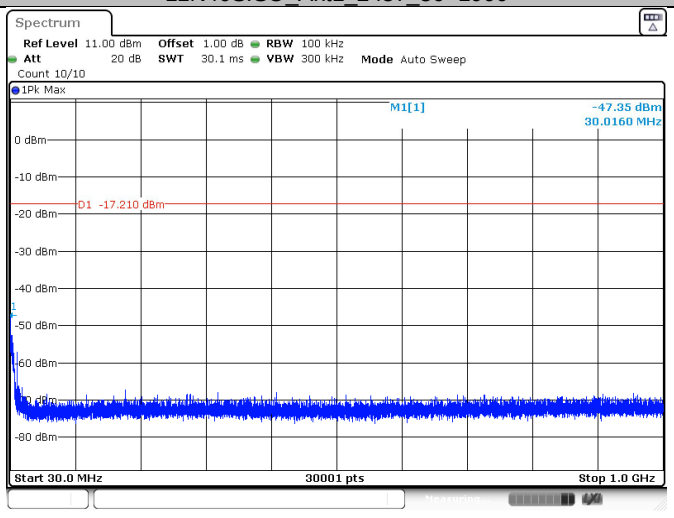

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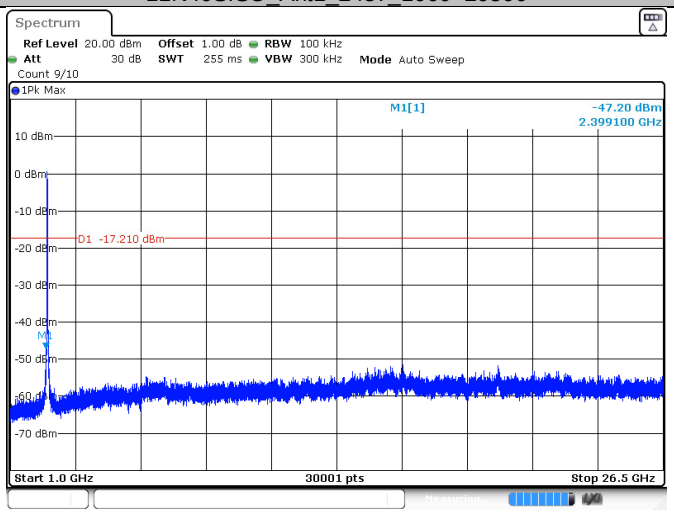

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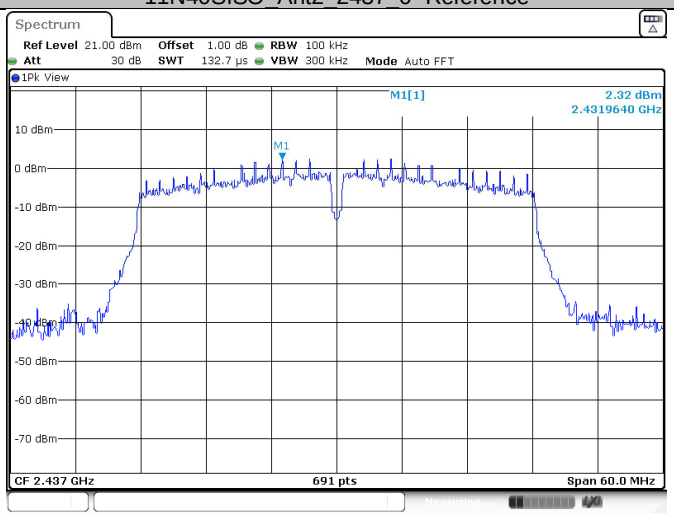

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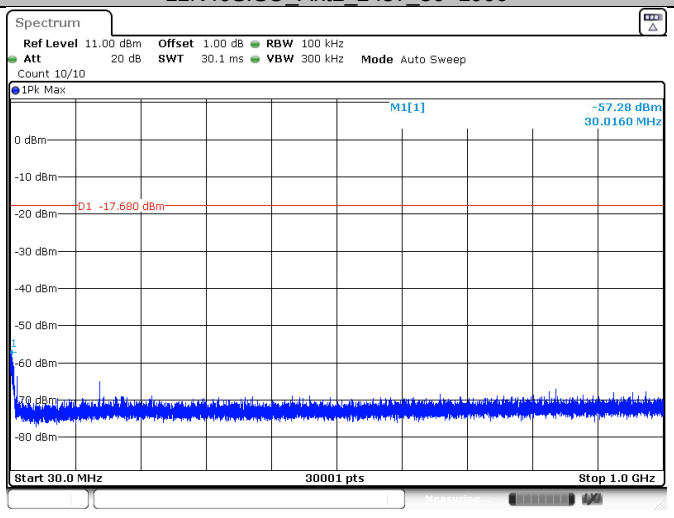

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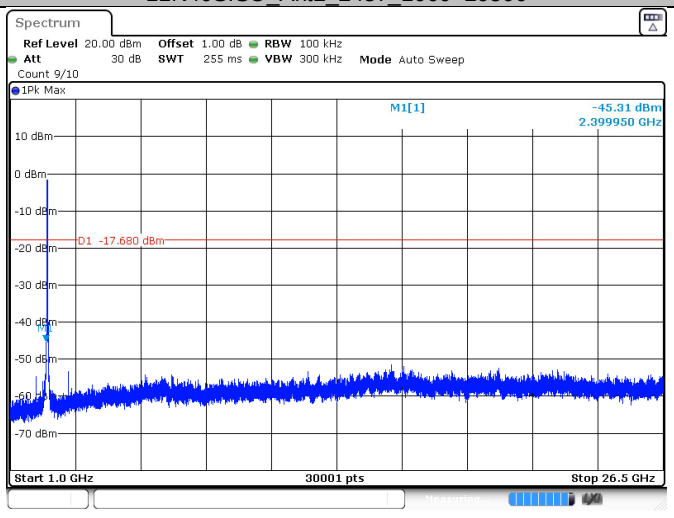

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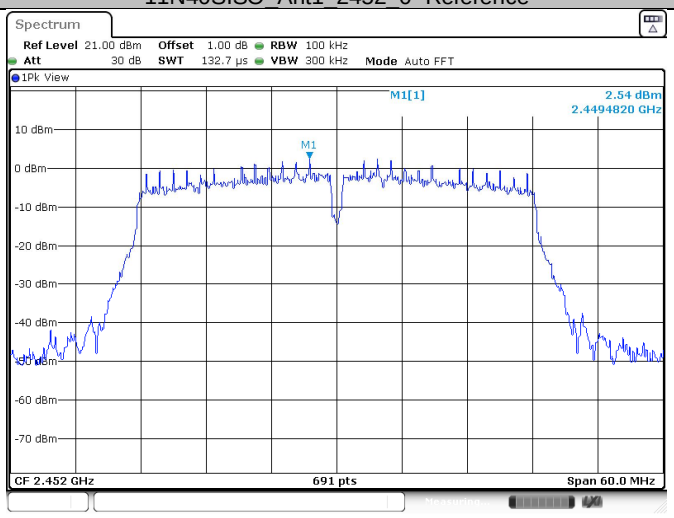

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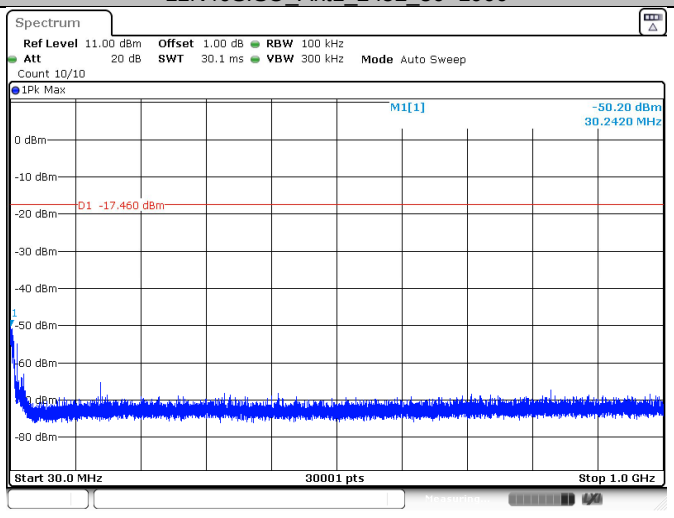

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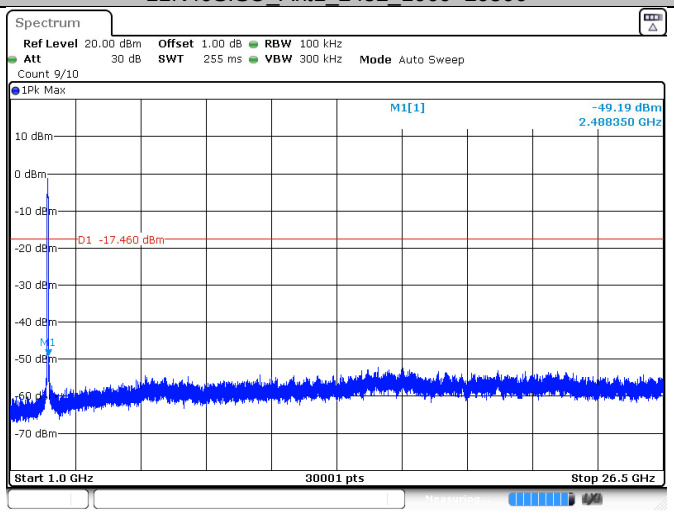

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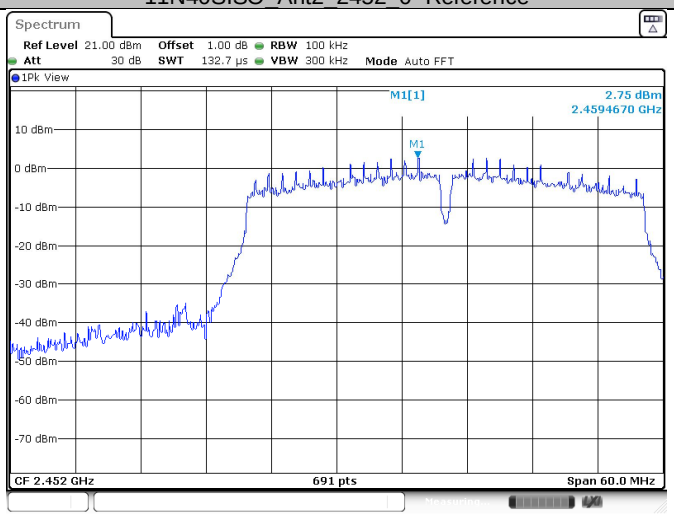

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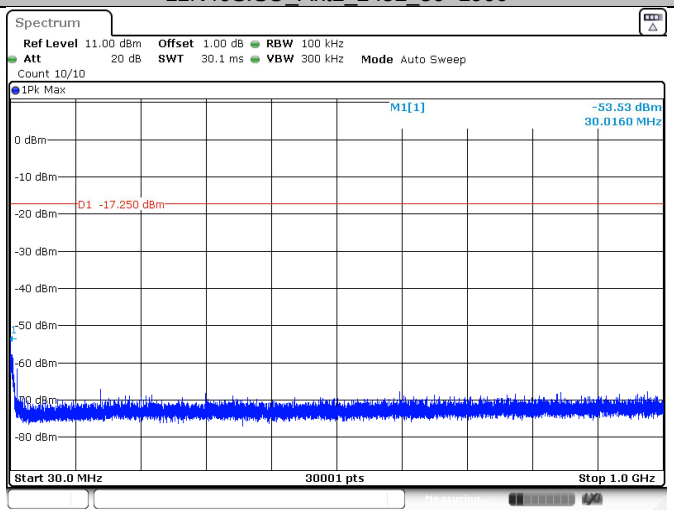

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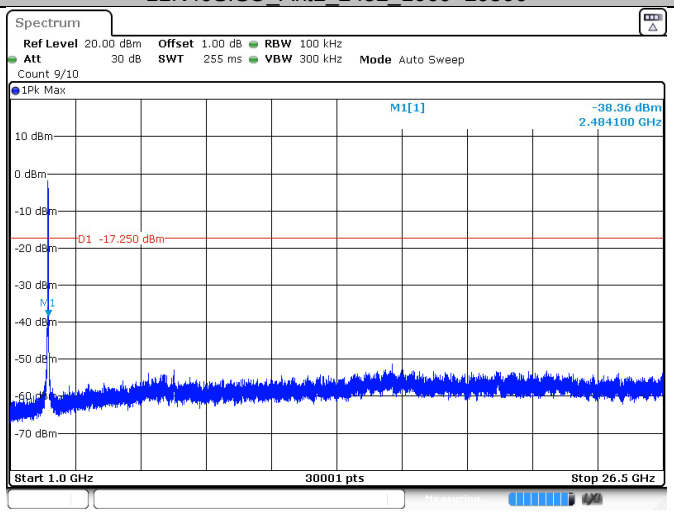

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9.6 Band edge testing

Test Method

1 Use the following spectrum analyzer settings:
Span = wide enough to capture the peak level of the in-band emission and all spurious
RBW = 100 kHz, VBW≥RBW, Sweep = auto, Detector function = peak, Trace = max hold
2 Allow the trace to stabilize, use the peak and delta measurement to record the result.
3 The level displayed must comply with the limit specified in this Section. .
4 Repeat the test at the hopping off and hopping on mode, submit all the plots.

Limit:

In any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 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, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in RSS-Gen scetion8.9, must also comply with the radiated emission limits specified in RSS-Gen scetion8.10.

Frequency Range MHz	Limit (dBc)
30-25000	-20

Test result

TestMode	Antenna	ChName	Channel(MHz)	RefLevel(dBm)	Result(dBm)	Limit(dBm)	Verdict
11B	Ant1	Low	2412	5.39	-40.15	<=-14.61	PASS
	Ant2	Low	2412	5.36	-41.92	<=-14.64	PASS
	Ant1	High	2462	5.39	-56.32	<=-14.61	PASS
	Ant2	High	2462	5.18	-56.21	<=-14.82	PASS
11G	Ant1	Low	2412	4.34	-38.72	<=-15.66	PASS
	Ant2	Low	2412	4.92	-38.86	<=-15.08	PASS
	Ant1	High	2462	5.05	-49.87	<=-14.95	PASS
	Ant2	High	2462	4.60	-47.21	<=-15.4	PASS

TestMode	Antenna	ChName	Channel(MHz)	RefLevel(dBm)	Result(dBm)	Limit(dBm)	Verdict
11N20SISO	Ant1	Low	2412	2.13	-41.36	<=-17.87	PASS
	Ant2	Low	2412	4.47	-39.6	<=-15.53	PASS
	Ant1	High	2462	5.09	-48.35	<=-14.91	PASS
	Ant2	High	2462	3.29	-48.81	<=-16.71	PASS
11N40SISO	Ant1	Low	2422	2.47	-39.09	<=-17.53	PASS
	Ant2	Low	2422	1.56	-40.23	<=-18.44	PASS
	Ant1	High	2452	2.15	-46.13	<=-17.85	PASS
	Ant2	High	2452	2.75	-35.72	<=-17.25	PASS

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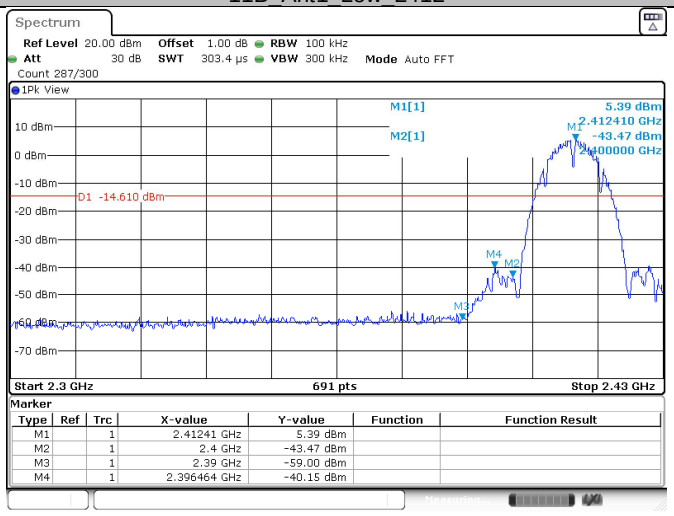
11B_Ant1_Low_2412



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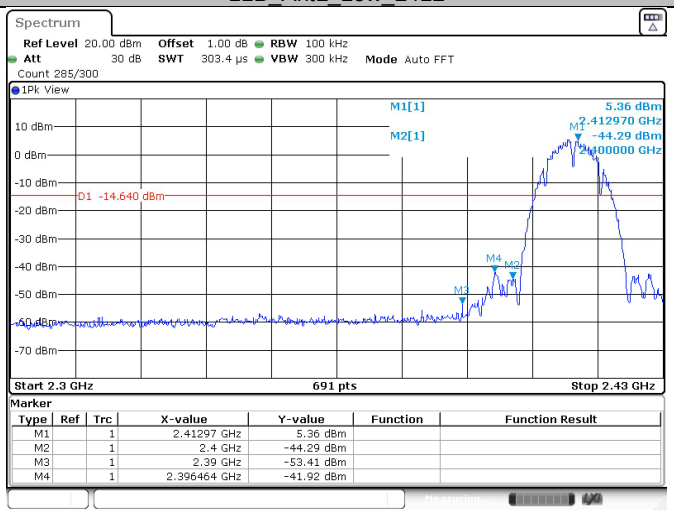

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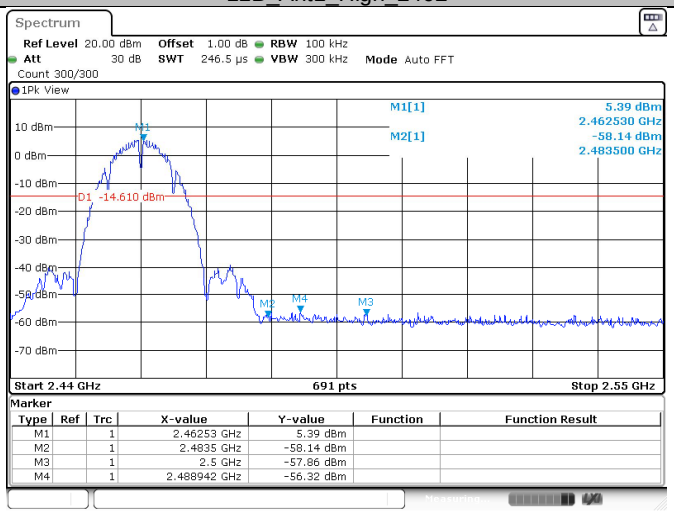

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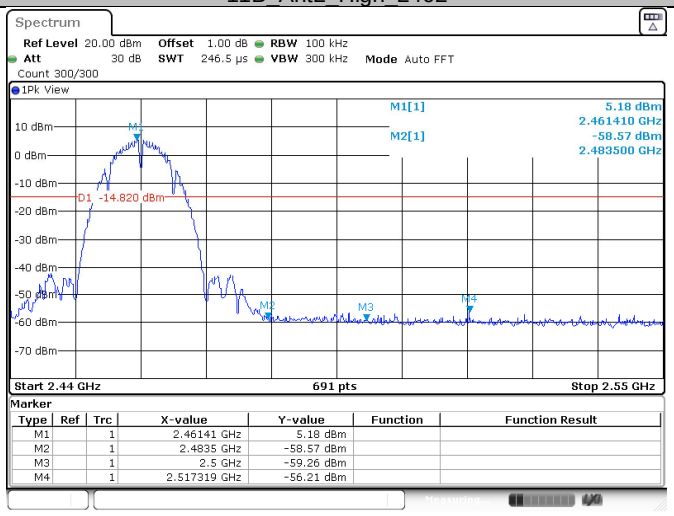
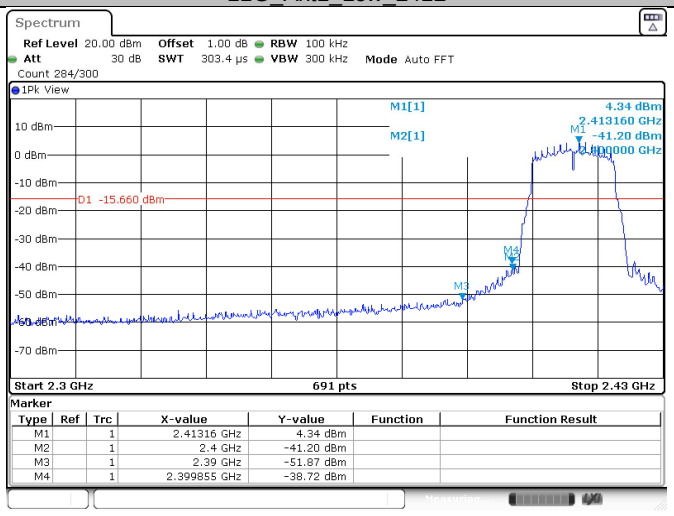
11B_Ant2_High_2462



Date: 13.JUL.2022 16:32:01

11G_Ant1_Low_2412



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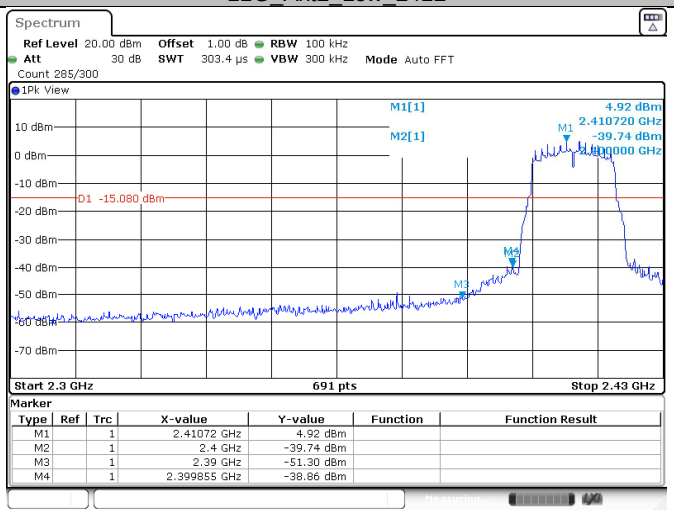

Date: 13.JUL.2022 16:34:05

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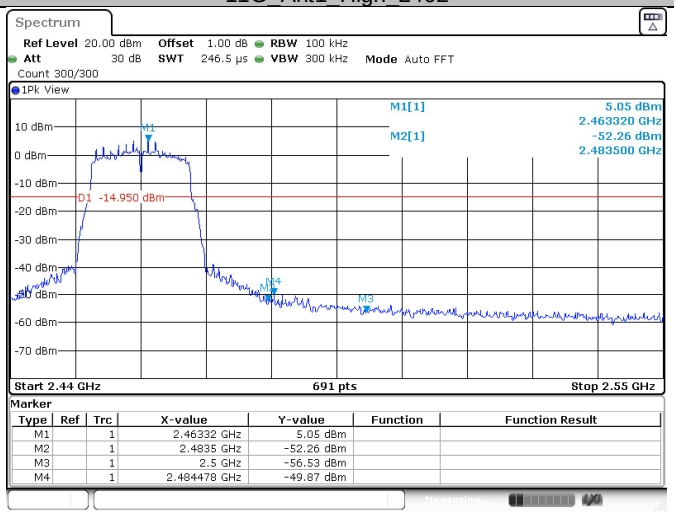
11G_Ant1_High_2462



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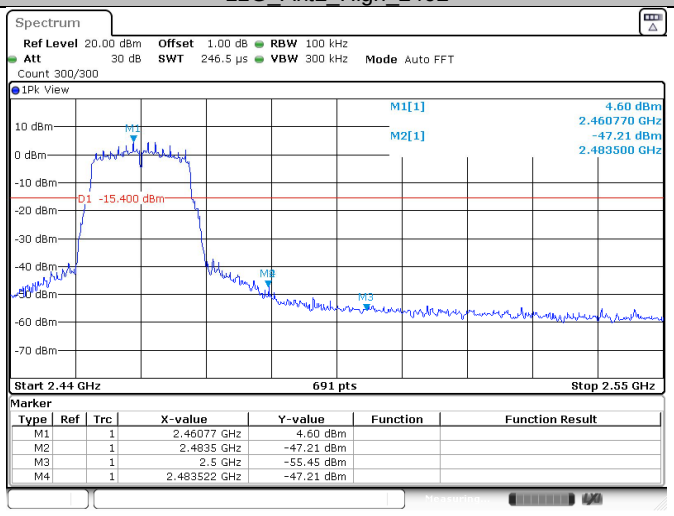
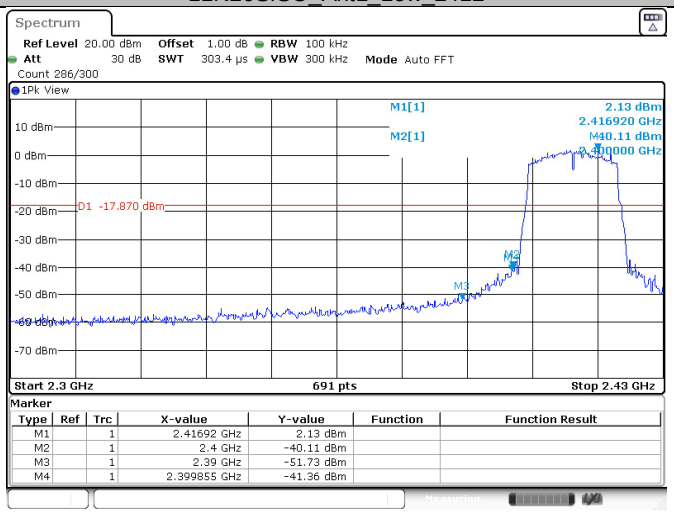


Date: 13.JUL.2022 16:38:23

11N20SISO_Ant1_Low_2412



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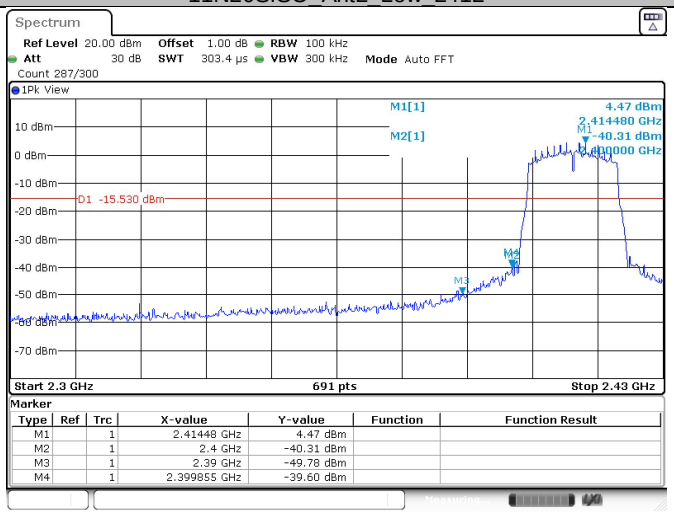
11N20SISO_Ant2_Low_2412



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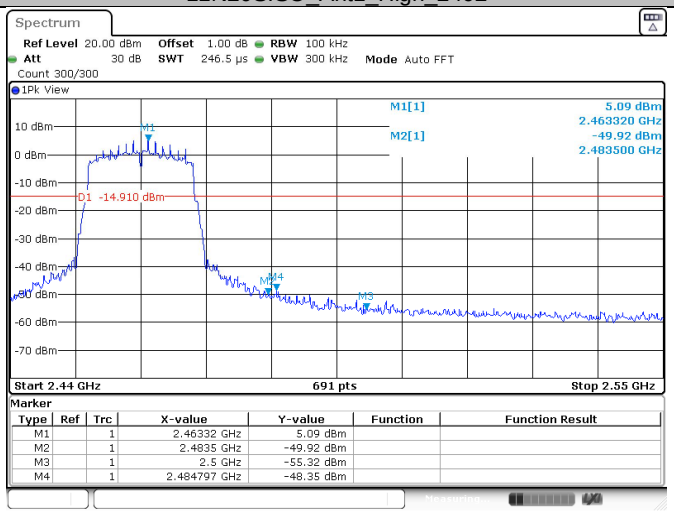

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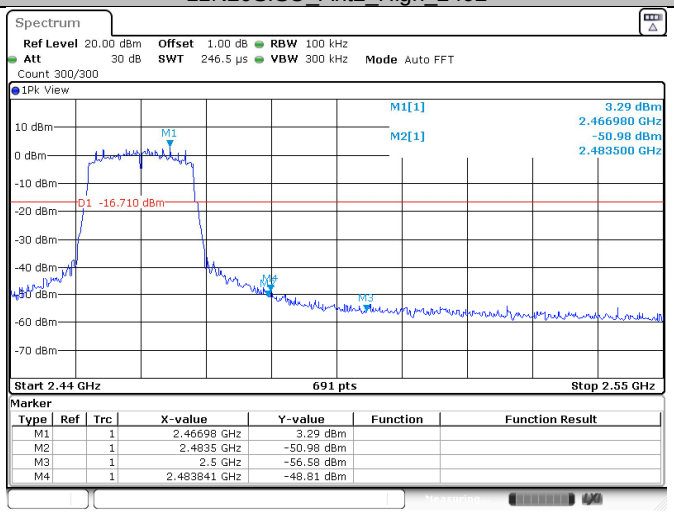

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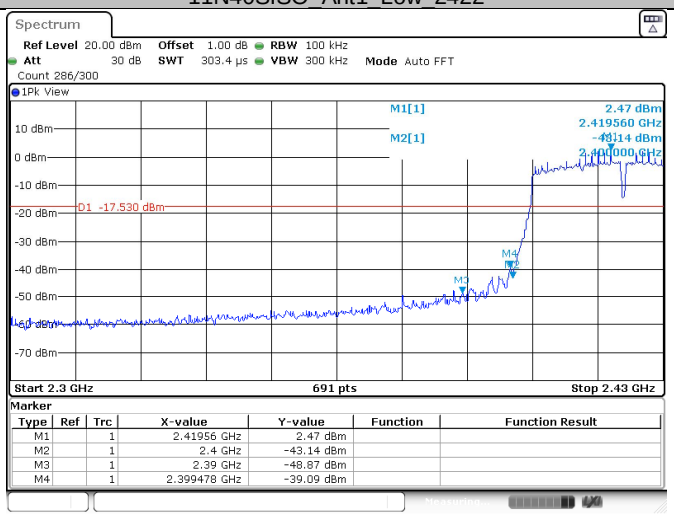
11N40SISO_Ant1_Low_2422



Date: 13.JUL.2022 16:20:34

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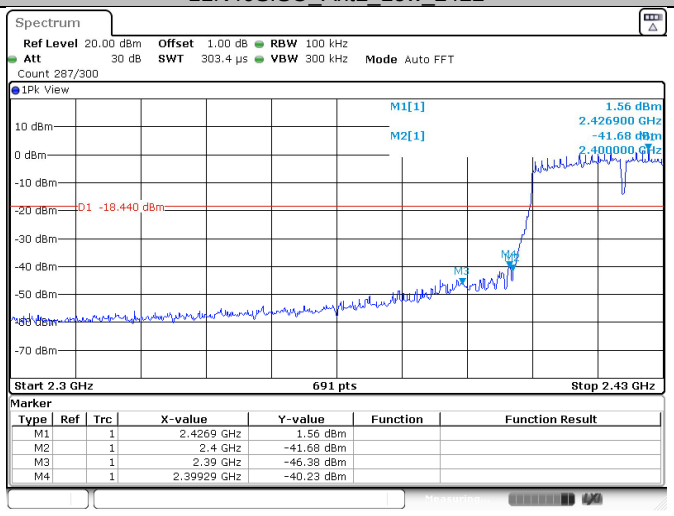

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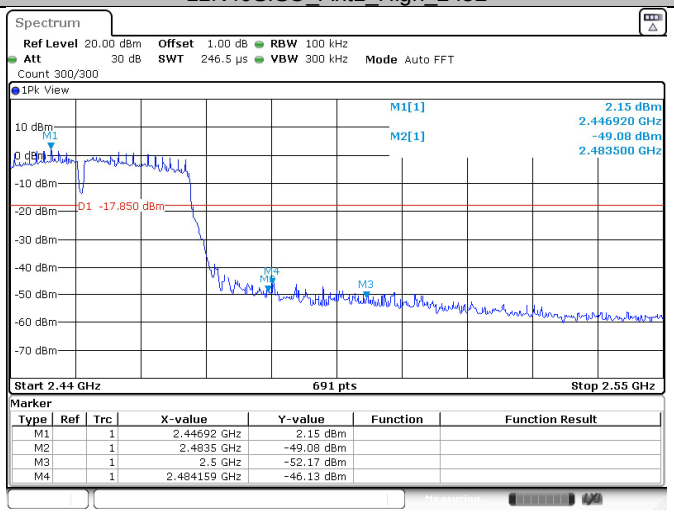

Date: 13.JUL.2022 16:25:38

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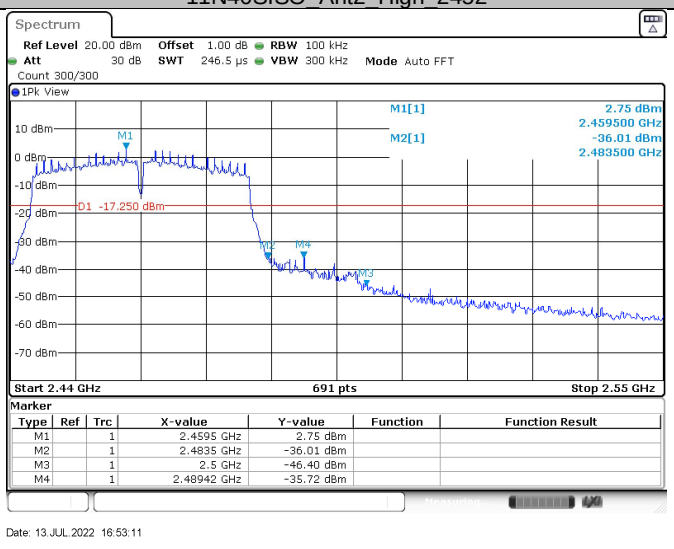
11N40SISO_Ant2_High_2452



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9.7 Radiated spurious emissions for transmitter

Test Method

1: The EUT was place on a turn table which is 1.5m above ground plane for above 1GHz and 0.8m above ground for below 1GHz at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

2: The EUT was set 3 meters away from the interference – receiving antenna, which was mounted on the top of a variable – height antenna tower.

3: The height of antenna 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.

4: 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.

5: Use the following spectrum analyzer settings According to C63.10:

For Below 1GHz

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious RBW = 100 KHz to 120KHz, VBW≥RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

For Peak unwanted emissions Above 1GHz:

Span = wide enough to capture the peak level of the in-band emission and all spurious RBW = 1MHz, VBW≥RBW for peak measurement ,Sweep = auto, Detector function = peak, Trace = max hold.

Procedures for average unwanted emissions measurements above 1000 MHz

a) RBW = 1 MHz.

b) VBW \ [3 × RBW].

c) Detector = RMS (power averaging), if [span / (# of points in sweep)] \ RBW / 2. Satisfying this condition can require increasing the number of points in the sweep or reducing the span. If the condition is not satisfied, then the detector mode shall be set to peak.

d) Averaging type = power (i.e., rms) (As an alternative, the detector and averaging type may be set for linear voltage averaging. Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.)

e) Sweep time = auto.

f) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, then the number of traces shall be increased by a factor of 1 / D,where D is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific emission is demonstrated to be continuous—i.e., 100% duty cycle—then rather than turning ON and OFF with the transmit cycle, at least 100 traces shall be averaged.)

g) If tests are performed with the EUT transmitting at a duty cycle less than 98%, then a correction factor shall be added to the measurement results prior to comparing with the emission limit, to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:

1) If power averaging (rms) mode was used in the preceding step e), then the correction factor is [10 log (1 / D)], where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 3 dB shall be added to the measured emission levels.

2) If linear voltage averaging mode was used in the preceding step e), then the correction

factor is [20 log (1 / D)], where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB shall be added to the measured emission levels.
3) If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission.

Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 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, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under RSS 247 section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

Frequency MHz	Field Strength uV/m	Field Strength dBµV/m	Detector
30-88	100	40	QP
88-216	150	43.5	QP
216-960	200	46	QP
960-1000	500	54	QP
Above 1000	500	54	AV
Above 1000	5000	74	PK

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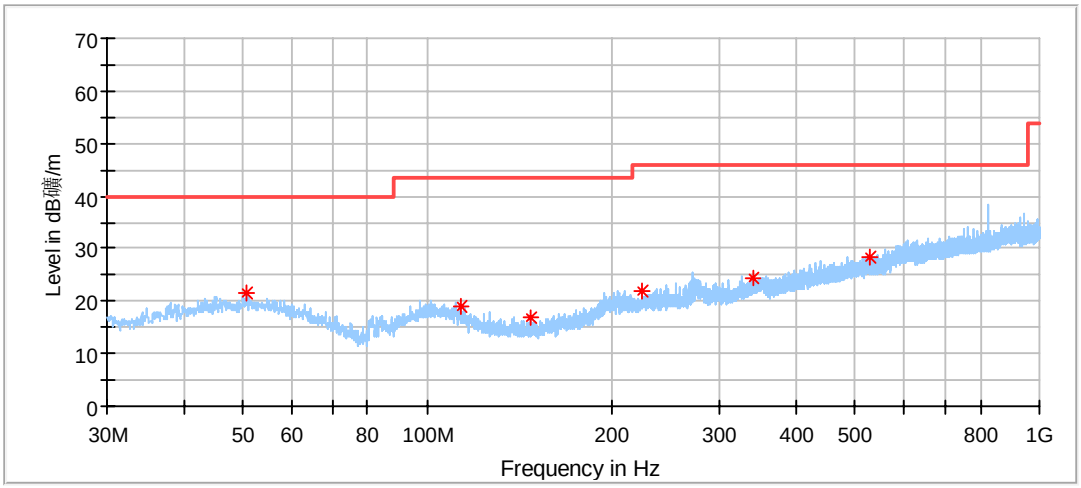
Radiated spurious emissions for transmitter

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

Below 1G:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
50.801111	21.36	40.00	18.64	100.0	H	231.0	20.56
113.689444	19.10	43.50	24.40	100.0	H	102.0	17.63
147.316111	16.88	43.50	26.62	100.0	H	249.0	14.93
224.916111	21.96	46.00	24.04	200.0	H	293.0	18.98
340.669444	24.36	46.00	21.64	200.0	H	303.0	22.44
528.580000	28.49	46.00	17.51	200.0	H	165.0	25.73

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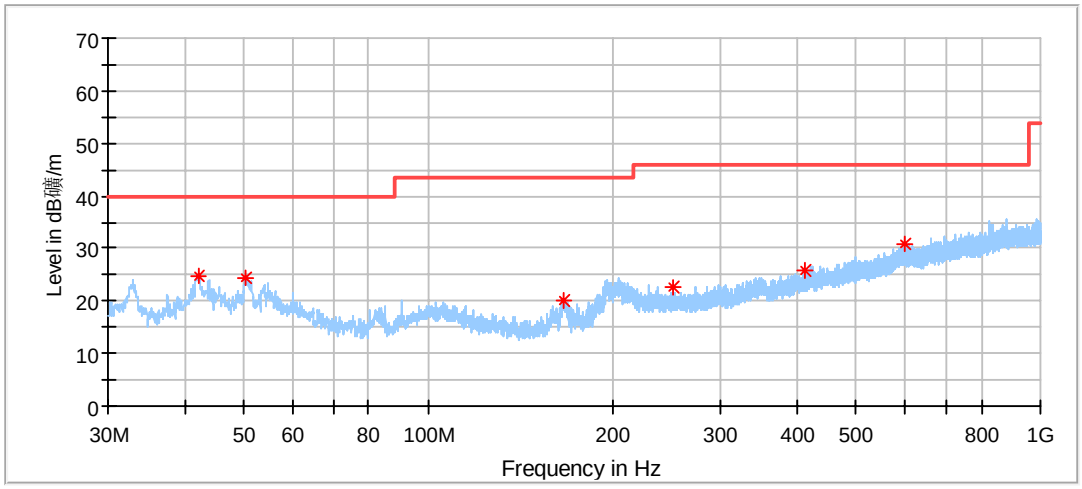

Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
42.286667	24.94	40.00	15.06	100.0	V	3.0	19.88
50.262222	24.36	40.00	15.64	100.0	V	33.0	20.61
166.931667	20.03	43.50	23.47	100.0	V	113.0	15.95
250.513333	22.78	46.00	23.22	100.0	V	332.0	19.98
411.964444	25.93	46.00	20.07	100.0	V	0.0	23.77
598.473889	30.81	46.00	15.19	100.0	V	33.0	27.63

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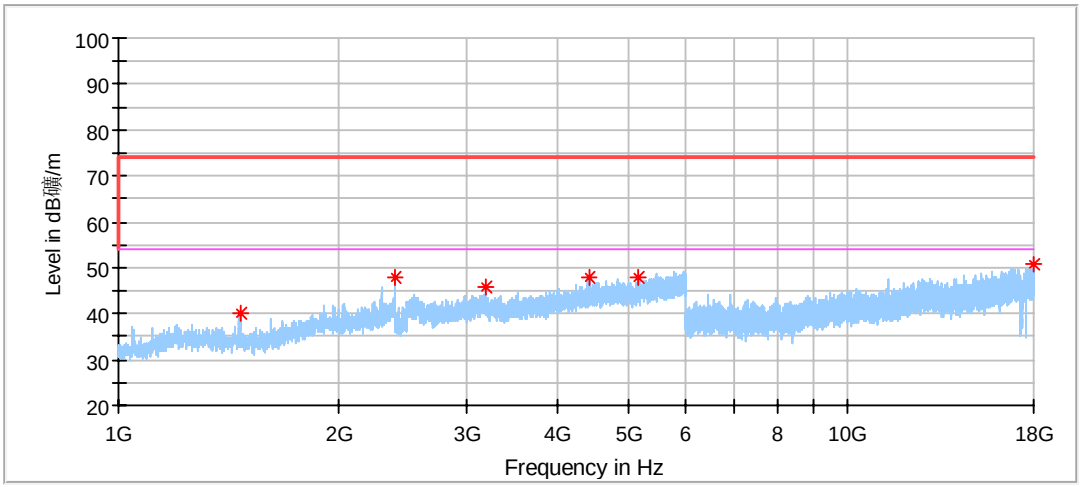
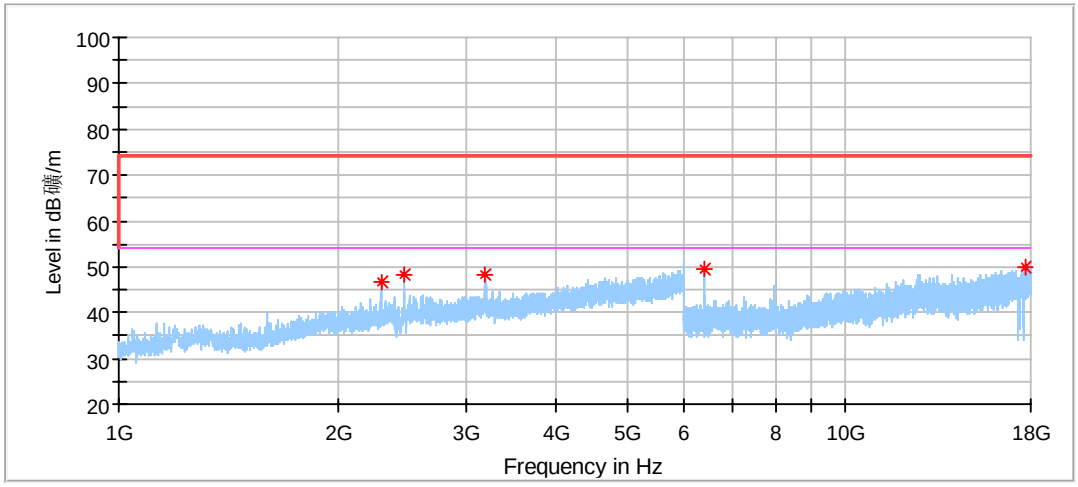
Above 1G:

802.11B Modulation 2412MHz Test Result



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1469.500000	40.00	74.00	34.00	150.0	H	252.0	-8.74
2394.000000	47.97	74.00	26.03	150.0	H	288.0	-2.67
3186.500000	45.87	74.00	28.13	150.0	H	259.0	-0.34
4421.000000	47.94	74.00	26.06	150.0	H	150.0	2.89
5158.500000	47.79	74.00	26.21	150.0	H	8.0	4.88
17976.500000	50.71	74.00	23.29	150.0	H	330.0	22.25



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2293.500000	46.82	74.00	27.18	150.0	V	128.0	-2.98
2470.000000	48.34	74.00	25.66	150.0	V	105.0	-2.37
3198.500000	48.25	74.00	25.75	150.0	V	228.0	-0.39
6389.000000	49.36	74.00	24.64	150.0	V	272.0	8.67
17696.000000	50.08	74.00	23.92	150.0	V	180.0	22.11

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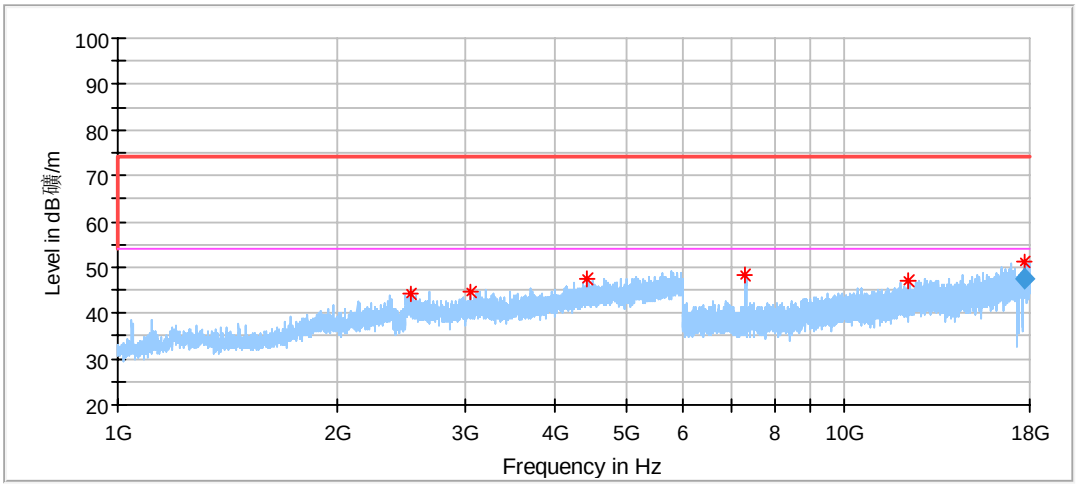
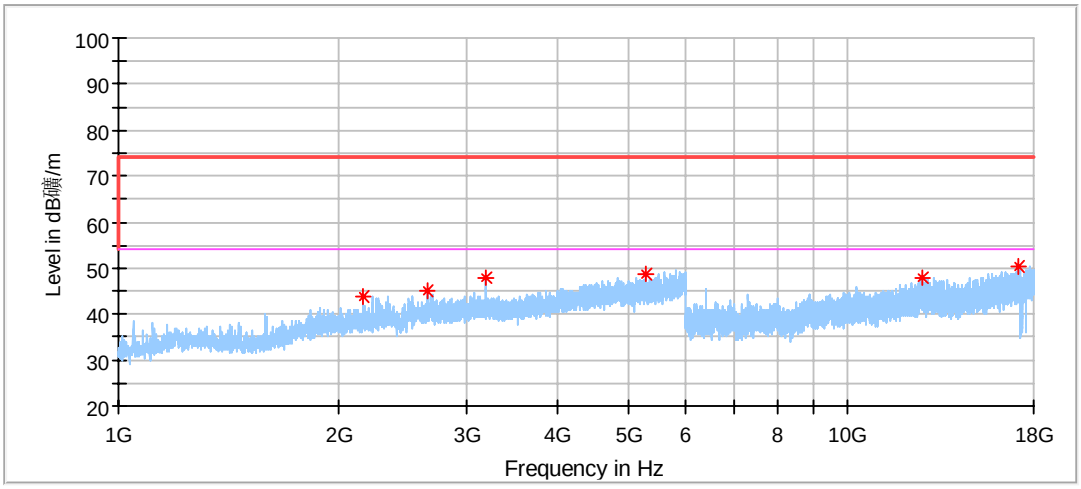
802.11B Modulation 2437MHz Test Result



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2527.500000	44.36	74.00	29.64	150.0	H	310.0	-2.20
3065.000000	44.47	74.00	29.53	150.0	H	41.0	-0.42
4431.500000	47.46	74.00	26.54	150.0	H	337.0	2.87
7309.500000	48.21	74.00	25.79	150.0	H	305.0	8.86
12230.500000	47.27	74.00	26.73	150.0	H	331.0	14.96
17641.500000	51.14	74.00	22.86	150.0	H	278.0	22.08
Frequency (MHz)	**Average (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**	**Height (cm)**	**Pol**	**Azimuth (deg)**	**Corr. (dB/m)**
17641.500000	47.65	54.00	6.35	150.0	H	278.0	22.08



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2163.500000	43.63	74.00	30.37	150.0	V	228.0	-3.69
2650.000000	45.16	74.00	28.84	150.0	V	236.0	-1.86
3188.500000	47.71	74.00	26.29	150.0	V	291.0	-0.35
5278.500000	48.83	74.00	25.17	150.0	V	291.0	4.91
12684.500000	47.71	74.00	26.29	150.0	V	107.0	16.26
17142.500000	50.28	74.00	23.72	150.0	V	58.0	22.23

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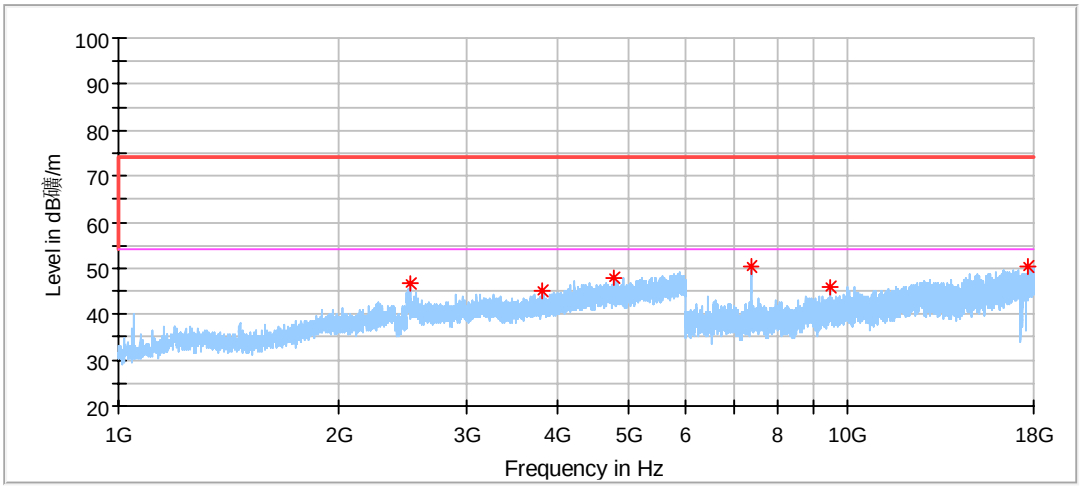
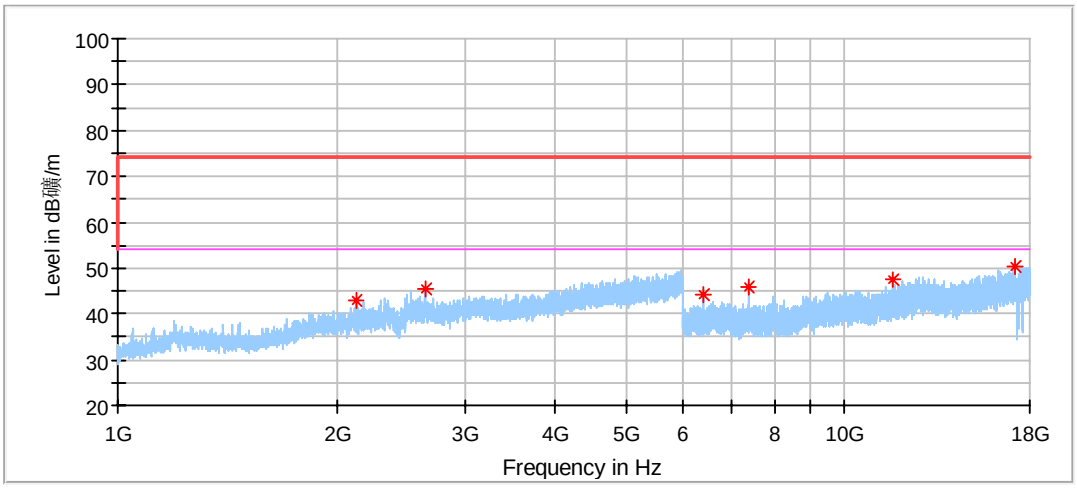
802.11B Modulation 2462MHz Test Result



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2513.000000	46.63	74.00	27.37	150.0	H	284.0	-2.28
3821.000000	45.15	74.00	28.85	150.0	H	177.0	0.69
4773.000000	48.05	74.00	25.95	150.0	H	78.0	3.72
7385.000000	50.20	74.00	23.80	150.0	H	303.0	8.84
9452.000000	45.66	74.00	28.34	150.0	H	330.0	12.78
17695.000000	50.23	74.00	23.77	150.0	H	303.0	22.11



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2133.500000	43.03	74.00	30.97	150.0	V	133.0	-3.88
2644.500000	45.35	74.00	28.65	150.0	V	244.0	-1.88
6393.000000	44.18	74.00	29.82	150.0	V	223.0	8.64
7385.000000	45.74	74.00	28.26	150.0	V	269.0	8.84
11663.500000	47.36	74.00	26.64	150.0	V	200.0	14.01
17145.000000	50.19	74.00	23.81	150.0	V	79.0	22.23

Remark:

(1) The report only shows the worst test data.

(2) Data of measurement within frequency range18-26GHz are the noise floor or attenuated more than 20dB below the permissible limits or the field strength is too small to be measured, so test data does not present in this report;

(3) Level=Reading Level + Correction Factor
Above 1GHz: Corrector factor = Antenna Factor + Cable Loss- Amplifier Gain
Below 1GHz: Corrector factor = Antenna Factor + Cable Loss
(The Reading Level is recorded by software which is not shown in the sheet)

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10 Test Equipment List

Conducted Emission Test

Description	Manufacturer	Model no.	Equipment ID	Serial no.	cal interval (year)	cal. due date
EMI Test Receiver	Rohde & Schwarz	ESR 3	68-4-74-14-001	101782	1	2023-5-27
LISN	Rohde & Schwarz	ENV4200	68-4-87-14-001	100249	1	2023-5-27
LISN	Rohde & Schwarz	ENV432	68-4-87-16-001	101318	1	2023-5-27
LISN	Rohde & Schwarz	ENV216	68-4-87-14-002	100326	1	2023-5-27
ISN	Rohde & Schwarz	ENY81	68-4-87-14-003	100177	1	2023-5-27
ISN	Rohde & Schwarz	ENY81-CA6	68-4-87-14-004	101664	1	2023-5-27
High Voltage Probe	Schwarzbeck	TK9420(VT9420)	68-4-27-14-001	9420-584	1	2023-5-27
RF Current Probe	Rohde & Schwarz	EZ-17	68-4-27-14-002	100816	1	2023-5-31
Attenuator	Shanghai Huaxiang	TS2-26-3	68-4-81-16-003	080928189	1	2023-5-27
Test software	Rohde & Schwarz	EMC32	68-4-90-14-003-A10	Version9.15.00	N/A	N/A
Shielding Room	TDK	CSR #1	68-4-90-19-004	----	3	2022-11-07

Radiated Emission Test

Description	Manufacturer	Model no.	Equipment ID	Serial no.	cal interval (year)	cal. due date
EMI Test Receiver	Rohde & Schwarz	ESR 26	68-4-74-14-002	101269	1	2023-5-28
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9162	68-4-80-19-003	284	1	2023-1-17
Wave Guide Antenna	ETS	3117	68-4-80-19-001	00218954	1	2023-5-9
Pre-amplifier	Rohde & Schwarz	SCU 18F	68-4-29-19-001	100745	1	2023-5-28
Pre-amplifier	Rohde & Schwarz	SCU 18F	68-4-29-19-002	100746	1	2023-5-28
Sideband Horn Antenna	Q-PAR	QWH-SL-18-40-K-SG	68-4-80-14-008	12827	1	2023-7-12
Pre-amplifier	Rohde & Schwarz	SCU 40A	68-4-29-14-002	100432	1	2023-7-27
Attenuator	Mini-circuits	UNAT-6+	68-4-81-21-002	15542	1	2023-5-27
3m Semi-anechoic chamber	TDK	SAC-3 #2	68-4-90-19-006	----	2	2023-5-28
Test software	Rohde & Schwarz	EMC32	68-4-90-19-006-A01	Version10.35.02	N/A	N/A

RF conducted test

Description	Manufacturer	Model no.	Equipment ID	Serial no.	cal interval (year)	cal. due date
Signal Analyzer	Rohde & Schwarz	FSV40	68-4-74-14-004	101030	1	2023-5-27
RF Switch Module	Rohde & Schwarz	OSP120/OSP-B157	68-4-93-14-003	101226/100851	1	2023-5-27
Power Splitter	Weinschel	1580	68-4-85-14-001	SC319	1	2023-5-28
Test software	Tonscend	System for BT/WIFI	68-4-74-14-006-A13	Version 2.6.77.0518	N/A	N/A
Shielding Room	TDK	TS8997	68-4-90-19-003	----	3	2022-11-07

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11 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty	
Test Items	Extended Uncertainty
Uncertainty for Conducted Emission 150kHz-30MHz (for test using AMN ENV432 or ENV4200)	3.62dB
Uncertainty for Radiated Spurious Emission 25MHz-1000MHz	Horizontal: 4.70dB; Vertical: 4.67dB;
Uncertainty for Radiated Spurious Emission 1000MHz-40000MHz	Horizontal: 4.65dB; Vertical: 4.64dB;
Uncertainty for Conducted RF test with TS 8997	RF Power Conducted: 1.31dB Frequency test involved: 0.6×10^{-7} or 1%

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