7.4. Power Spectral Density Measurement

7.4.1. Test Limit

The maximum permissible power spectral density is 8dBm in any 3 kHz band. And for antenna gain greater than 6dBi the limit shall reduce by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

7.4.2. Test Procedure Used

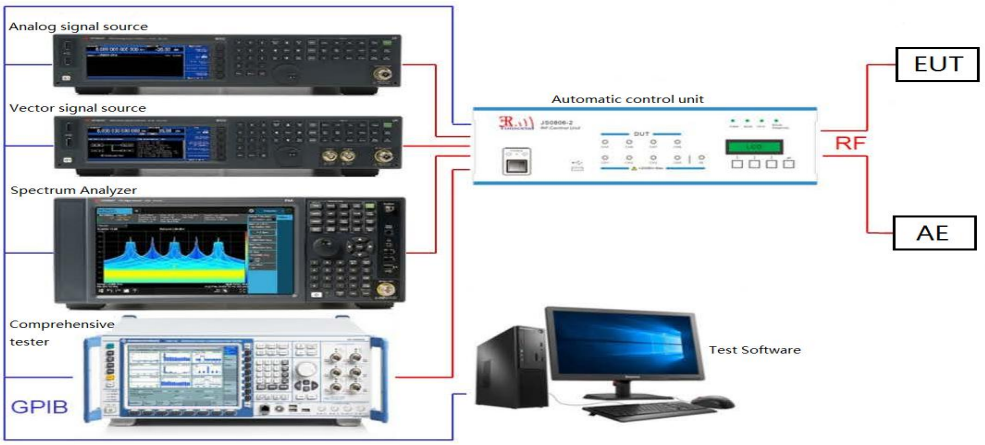
KDB 558074 D01 v05r02 - Section 8.4

ANSI C63.10 – Section 11.10.5

7.4.3. Test Setting

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the OBW.
3. Set the RBW to 3 kHz ≤ RBW ≤ 100 kHz.
4. Set the VBW ≥ [3 × RBW].
5. Detector = power averaging (rms) or sample detector (when rms not available).
6. Ensure that the number of measurement points in the sweep ≥ [2 × span / RBW].
7. Sweep time = auto couple.
8. Do not use sweep triggering; allow sweep to “free run.”
9. Employ trace averaging (rms) mode over a minimum of 100 traces.
10. Use the peak marker function to determine the maximum amplitude level.
11. Add [10 log (1 / D)], where D is the duty cycle measured in step a), to the measured PSD to
12. If measured value exceeds requirement specified by regulatory agency, then reduce RBW (but no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span to meet the minimum measurement point requirement as the RBW is reduced)..

7.4.4. Test Setup



7.4.5. Test Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-9.08	≤8.00	PASS
		2437	-9.69	≤8.00	PASS
		2462	-10.27	≤8.00	PASS
11G	Ant1	2412	-16.29	≤8.00	PASS
		2437	-15.82	≤8.00	PASS
		2462	-16.56	≤8.00	PASS
11N20SISO	Ant1	2412	-16.81	≤8.00	PASS
		2437	-16.49	≤8.00	PASS
		2462	-15.97	≤8.00	PASS
11N40SISO	Ant1	2422	-18.22	≤8.00	PASS
		2437	-17.83	≤8.00	PASS
		2452	-18.70	≤8.00	PASS
11AX20SISO	Ant1	2412	-14.11	≤8.00	PASS
		2437	-16.58	≤8.00	PASS
		2462	-16.48	≤8.00	PASS
11AX40SISO	Ant1	2422	-17.92	≤8.00	PASS
		2437	-18.36	≤8.00	PASS
		2452	-19.04	≤8.00	PASS

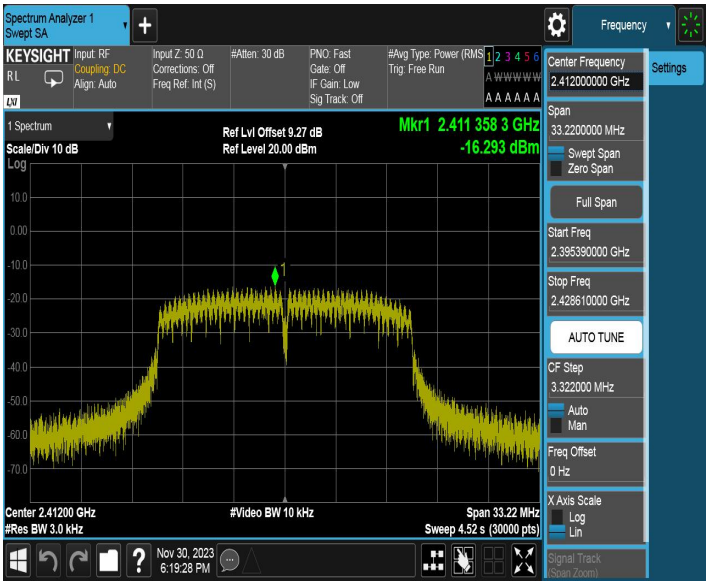
Test Graphs

11B_Ant1_2412

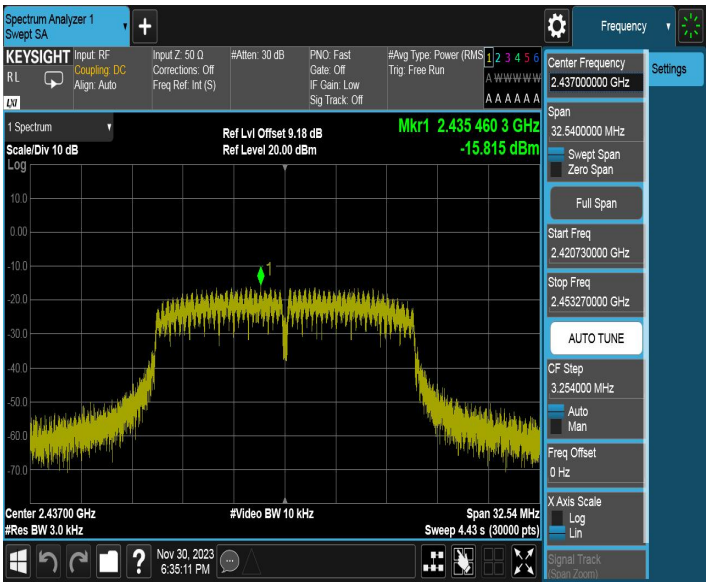
11B_Ant1_2437

11B_Ant1_2462

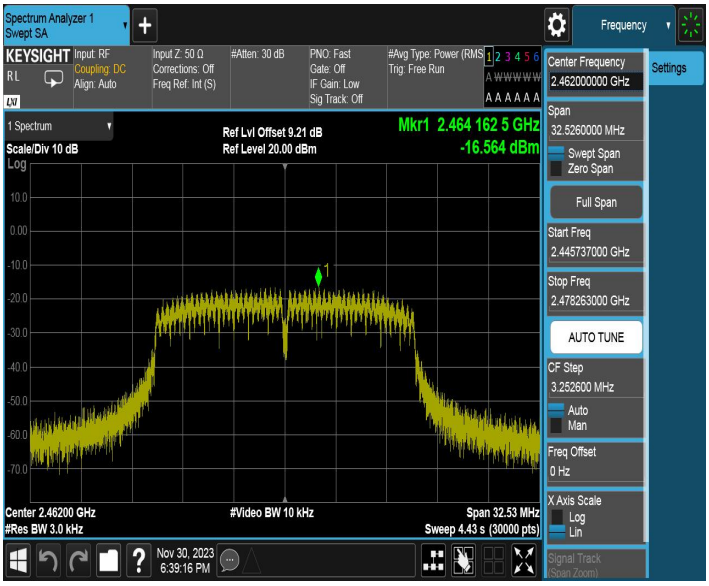
11G_Ant1_2412



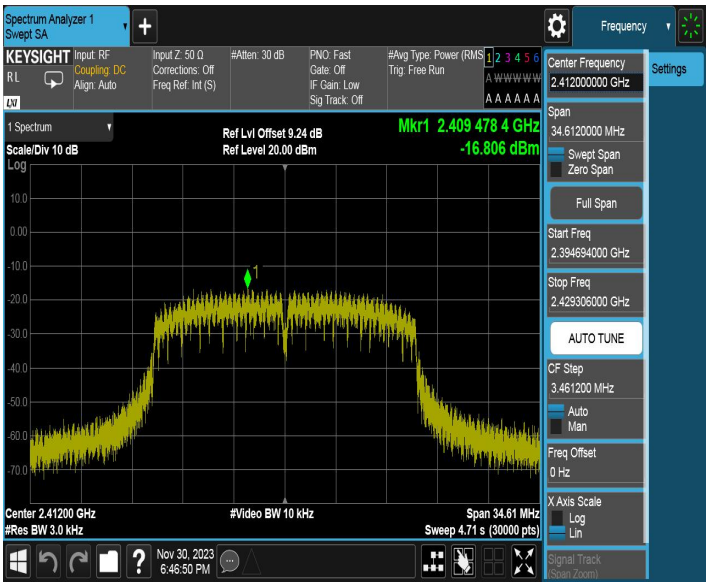
11G_Ant1_2437



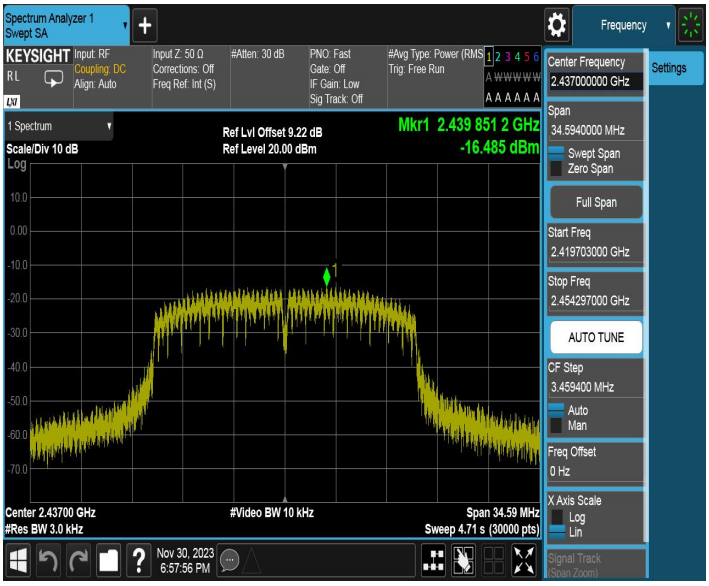
11G_Ant1_2462



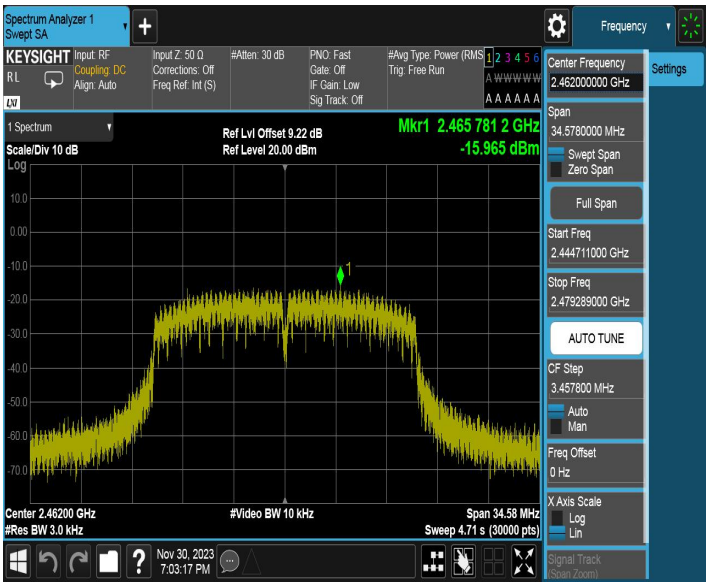
11N20SISO_Ant1_2412



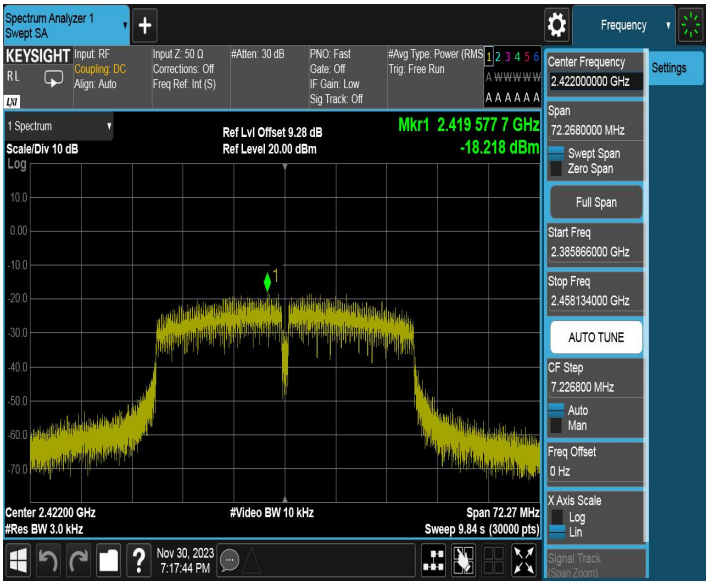
11N20SISO_Ant1_2437



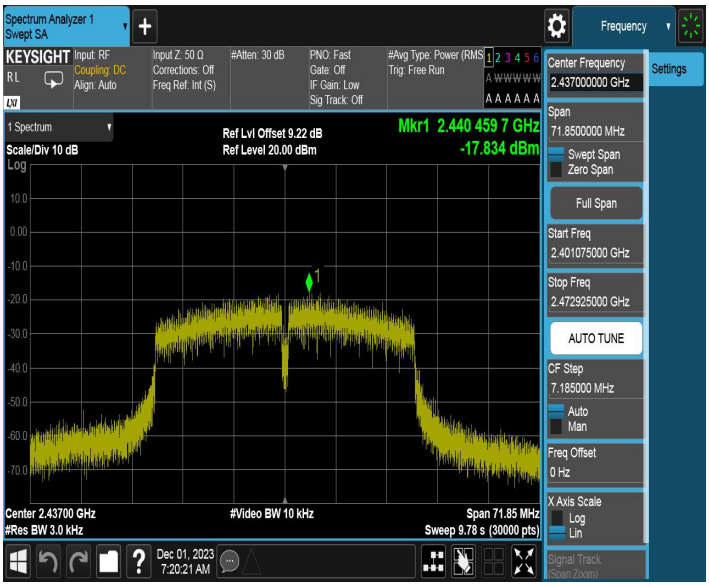
11N20SISO_Ant1_2462



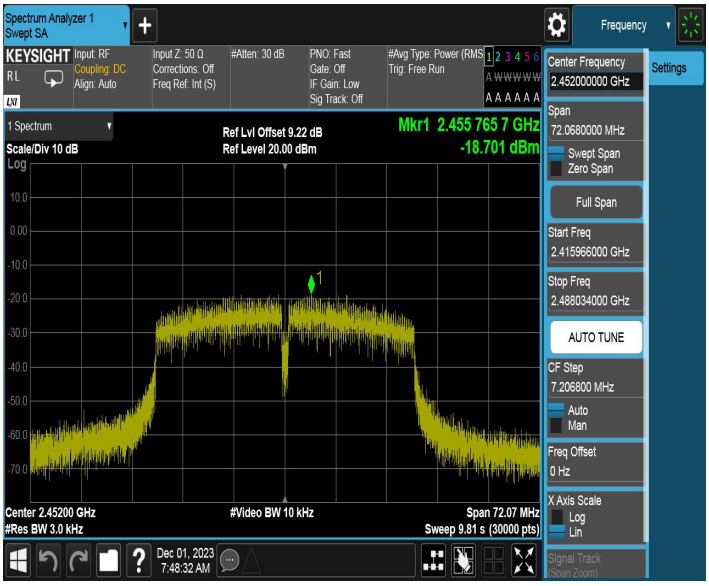
11N40SISO_Ant1_2422



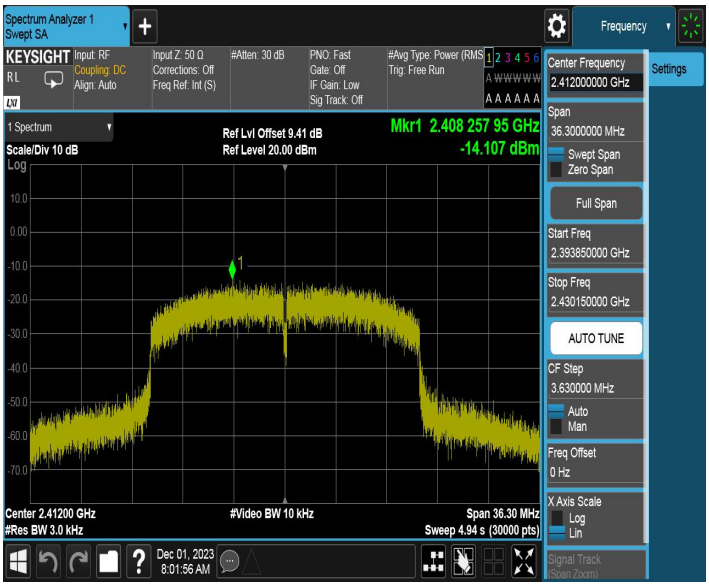
11N40SISO_Ant1_2437



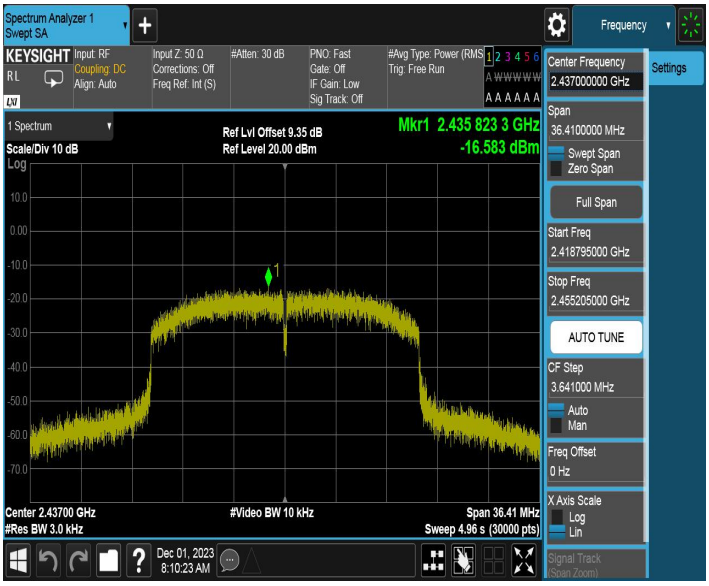
11N40SISO_Ant1_2452



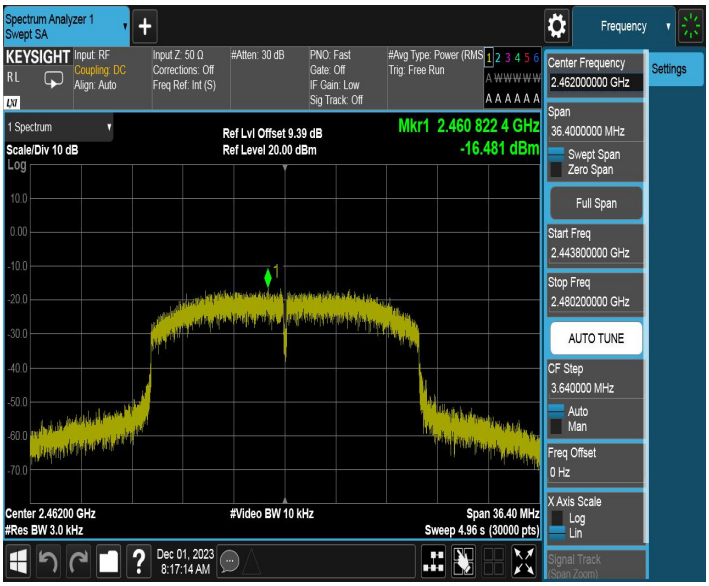
11AX20SISO_Ant1_2412



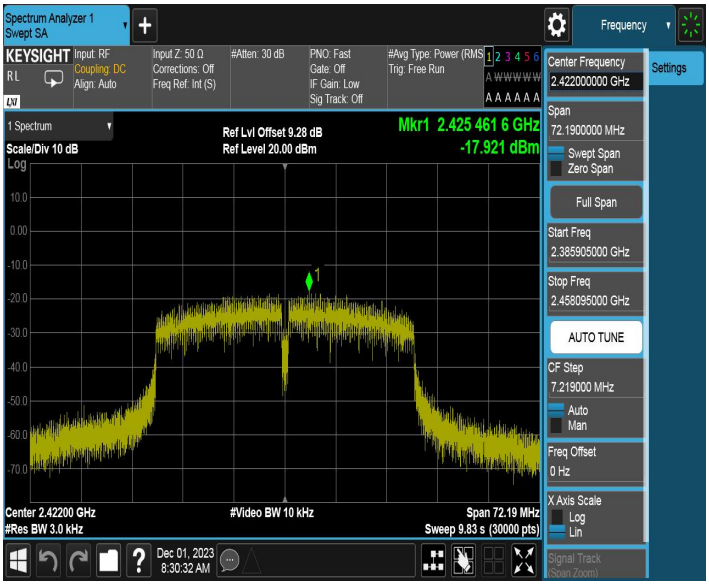
11AX20SISO_Ant1_2437



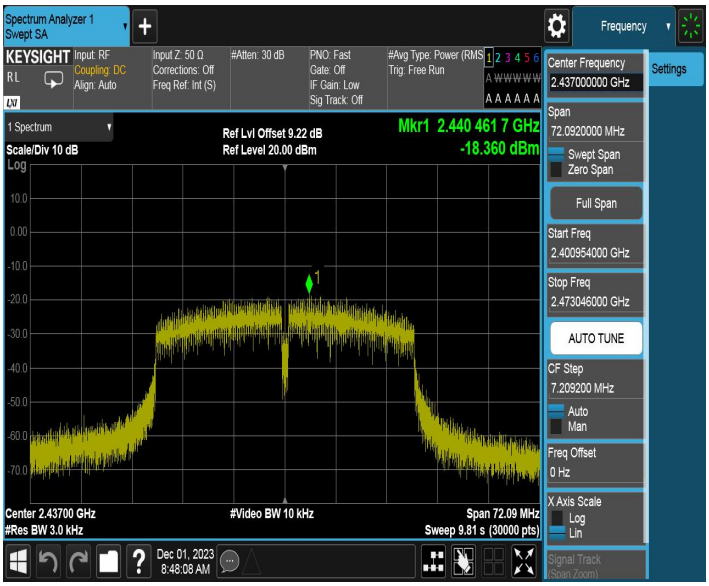
11AX20SISO_Ant1_2462



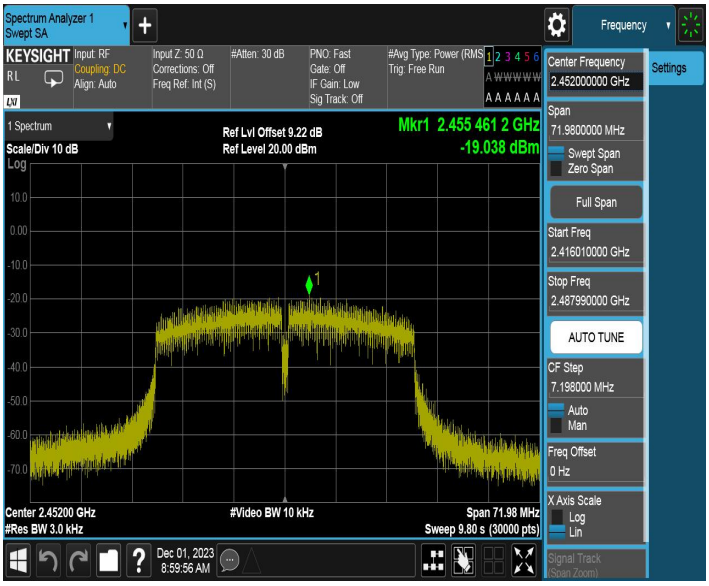
11AX40SISO_Ant1_2422



11AX40SISO_Ant1_2437



11AX40SISO_Ant1_2452



7.5. Conducted Band Edge and Out-of-Band Emissions

7.5.1. Test Limit

The limit for out-of-band spurious emissions at the band edge is 30dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100 kHz bandwidth per the PSD procedure.

7.5.2. Test Procedure Used

KDB 558074 D01 v05r02 - Section 8.5 & Section 8.6

ANSI C63.10 – Section 11.11&11.12

7.5.3. Test Settitng

(a) Set the center frequency and span to encompass frequency range to be measured

(b) RBW = 100kHz

(c) VBW = 300kHz

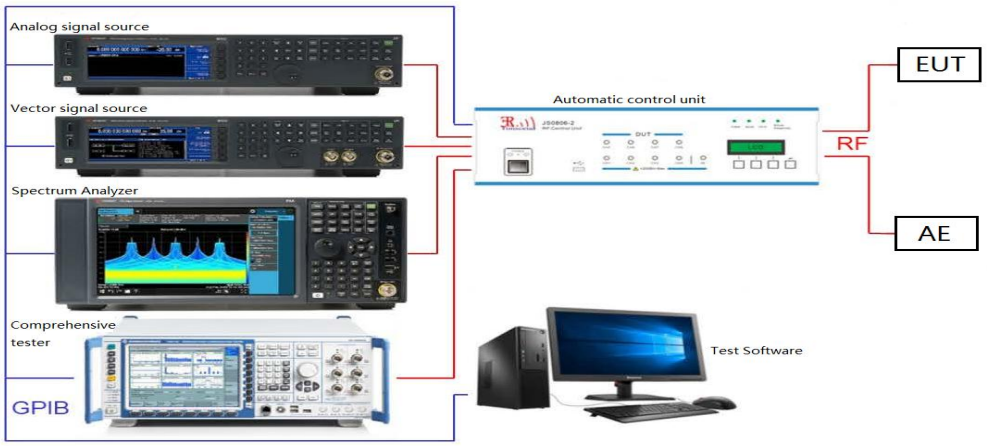
(d) Detector = RMS

(e) Trace mode = max hold

(f) Sweep time = auto couple

(g) The trace was allowed to stabilize

7.5.4. Test Setup



7.5.5. Test Result

Test Mode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	10.19	10.19	---	PASS
			30~1000	10.19	-53.71	≤-9.81	PASS
			1000~26500	10.19	-45.32	≤-9.81	PASS
		2437	Reference	9.45	9.45	---	PASS
			30~1000	9.45	-60.93	≤-10.55	PASS
			1000~26500	9.45	-42.23	≤-10.55	PASS
		2462	Reference	9.13	9.13	---	PASS
			30~1000	9.13	-57.14	≤-10.87	PASS
			1000~26500	9.13	-39.82	≤-10.87	PASS
11G	Ant1	2412	Reference	4.61	4.61	---	PASS
			30~1000	4.61	-61.18	≤-15.39	PASS
			1000~26500	4.61	-52.57	≤-15.39	PASS
		2437	Reference	4.65	4.65	---	PASS
			30~1000	4.65	-60.83	≤-15.35	PASS
			1000~26500	4.65	-51.88	≤-15.35	PASS
		2462	Reference	4.12	4.12	---	PASS
			30~1000	4.12	-60.04	≤-15.88	PASS
			1000~26500	4.12	-50.89	≤-15.88	PASS
11N20SISO	Ant1	2412	Reference	4.24	4.24	---	PASS
			30~1000	4.24	-60.92	≤-15.76	PASS
			1000~26500	4.24	-52.4	≤-15.76	PASS
		2437	Reference	5.14	5.14	---	PASS
			30~1000	5.14	-60.57	≤-14.86	PASS
			1000~26500	5.14	-49.73	≤-14.86	PASS
		2462	Reference	3.96	3.96	---	PASS
			30~1000	3.96	-61.2	≤-16.04	PASS
			1000~26500	3.96	-52.04	≤-16.04	PASS
11N40SISO	Ant1	2422	Reference	1.59	1.59	---	PASS
			30~1000	1.59	-60.33	≤-18.41	PASS
			1000~26500	1.59	-51.77	≤-18.41	PASS
		2437	Reference	1.54	1.54	---	PASS
			30~1000	1.54	-60.51	≤-18.46	PASS
			1000~26500	1.54	-52.37	≤-18.46	PASS