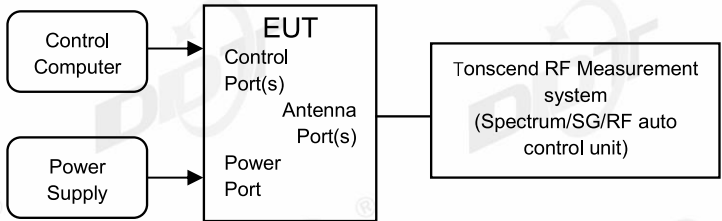


7. Power Spectral Density

7.1. Block diagram of test setup



7.2. Limits

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

7.3. Test procedure

- (1) The test according to ANSI C63.10-2013 clause 11.10.5.
- (2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results.
- (3) Set the EUT as maximum power setting and enable the EUT transmit continuously.
- (4) Use the following spectrum analyzer settings for Power Spectral Density measurement:

Center frequency	DTS Channel center frequency
RBW:	$3\text{ kHz} \leq \text{RBW} \leq 100\text{ kHz}$
VBW:	$\geq 3\text{RBW}$
Span	1.5 times the DTS bandwidth
Detector Mode:	RMS
Sweep time:	auto
Trace mode	max hold
Trace	Employ trace averaging (rms) mode over a minimum of 100 traces.
- (5) Add $[10 \log (1 / D)]$, where D is the duty cycle measured in step a), to the measured PSD to compute the average PSD during the actual transmission time.
- (6) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

7.4. Test result

Test Engineer:	Haofeng	Test Site:	RF Measurement System 4#
Ambient Condition:	23.8℃, 40.6%RH	Test Date:	2025.01.04~2025.01.11/2025.02.24~2025.02.25
Test Power Supply:	AC 230V/50Hz	Sample Number:	S24111416-014

Test Mode	Antenna	Frequency [MHz]	Result [dBm/3-100kHz]	Limit [dBm/3kHz]	Verdict
11B	Ant1	2412	-13.16	≤8.00	PASS
	Ant2	2412	-10.16	≤8.00	PASS
	Ant1	2437	-10.88	≤8.00	PASS
	Ant2	2437	-11.16	≤8.00	PASS
	Ant1	2462	-10.16	≤8.00	PASS
	Ant2	2462	-10.31	≤8.00	PASS
11G	Ant1	2412	-14.61	≤8.00	PASS
	Ant2	2412	-13.76	≤8.00	PASS
	Ant1	2437	-15.30	≤8.00	PASS
	Ant2	2437	-14.30	≤8.00	PASS
	Ant1	2462	-14.74	≤8.00	PASS
	Ant2	2462	-14.42	≤8.00	PASS
11N20MIMO	Ant1	2412	-17.50	≤8.00	PASS
	Ant2	2412	-17.00	≤8.00	PASS
	total	2412	-14.23	≤8.00	PASS
	Ant1	2437	-17.73	≤8.00	PASS
	Ant2	2437	-16.85	≤8.00	PASS
	total	2437	-14.26	≤8.00	PASS
	Ant1	2462	-17.80	≤8.00	PASS
	Ant2	2462	-17.00	≤8.00	PASS
	total	2462	-14.37	≤8.00	PASS
11N40MIMO	Ant1	2422	-20.84	≤8.00	PASS
	Ant2	2422	-20.00	≤8.00	PASS
	total	2422	-17.39	≤8.00	PASS
	Ant1	2437	-20.56	≤8.00	PASS
	Ant2	2437	-20.09	≤8.00	PASS
	total	2437	-17.31	≤8.00	PASS
	Ant1	2452	-20.97	≤8.00	PASS

	Ant2	2452	-20.43	≤8.00	PASS
	total	2452	-17.68	≤8.00	PASS
11AX20MIMO	Ant1	2412	-19.91	≤8.00	PASS
	Ant2	2412	-19.13	≤8.00	PASS
	total	2412	-16.49	≤8.00	PASS
	Ant1	2437	-19.65	≤8.00	PASS
	Ant2	2437	-19.46	≤8.00	PASS
	total	2437	-16.54	≤8.00	PASS
	Ant1	2462	-19.63	≤8.00	PASS
	Ant2	2462	-18.49	≤8.00	PASS
	total	2462	-16.01	≤8.00	PASS
11AX40MIMO	Ant1	2422	-26.44	≤8.00	PASS
	Ant2	2422	-25.19	≤8.00	PASS
	total	2422	-22.76	≤8.00	PASS
	Ant1	2437	-26.66	≤8.00	PASS
	Ant2	2437	-25.30	≤8.00	PASS
	total	2437	-22.92	≤8.00	PASS
	Ant1	2452	-26.58	≤8.00	PASS
	Ant2	2452	-25.80	≤8.00	PASS
	total	2452	-23.16	≤8.00	PASS

Test Mode	Antenna	Frequency [MHz]	Ru Size	Ru Index	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
11AX20MIMO	Ant1	2412	26Tone	RU0	-12.08	≤8.00	PASS
				RU4	-12.21	≤8.00	PASS
				RU8	-11.91	≤8.00	PASS
			52Tone	RU37	-14.73	≤8.00	PASS
				RU39	-15.06	≤8.00	PASS
				RU40	-15.24	≤8.00	PASS
			106Tone	RU53	-16.45	≤8.00	PASS
				RU54	-15.98	≤8.00	PASS
	Ant2	2412	26Tone	RU0	-11.79	≤8.00	PASS
				RU4	-11.03	≤8.00	PASS
				RU8	-11.61	≤8.00	PASS
			52Tone	RU37	-13.39	≤8.00	PASS
				RU39	-14.72	≤8.00	PASS
				RU40	-14.38	≤8.00	PASS

			106Tone	RU53	-16.25	≤8.00	PASS
				RU54	-15.17	≤8.00	PASS
	total	2412	26Tone	RU0	-8.92	≤8.00	PASS
				RU4	-8.57	≤8.00	PASS
				RU8	-8.75	≤8.00	PASS
			52Tone	RU37	-11.00	≤8.00	PASS
				RU39	-11.88	≤8.00	PASS
				RU40	-11.78	≤8.00	PASS
			106Tone	RU53	-13.34	≤8.00	PASS
				RU54	-12.55	≤8.00	PASS
	Ant1	2437	26Tone	RU0	-12.72	≤8.00	PASS
				RU4	-12.41	≤8.00	PASS
				RU8	-12.55	≤8.00	PASS
			52Tone	RU37	-15.48	≤8.00	PASS
				RU39	-15.88	≤8.00	PASS
				RU40	-13.73	≤8.00	PASS
			106Tone	RU53	-16.91	≤8.00	PASS
				RU54	-16.05	≤8.00	PASS
	Ant2	2437	26Tone	RU0	-12.02	≤8.00	PASS
				RU4	-11.85	≤8.00	PASS
				RU8	-12.51	≤8.00	PASS
			52Tone	RU37	-14.56	≤8.00	PASS
				RU39	-14.15	≤8.00	PASS
				RU40	-14.89	≤8.00	PASS
			106Tone	RU53	-17.23	≤8.00	PASS
				RU54	-16.03	≤8.00	PASS
	total	2437	26Tone	RU0	-9.35	≤8.00	PASS
				RU4	-9.11	≤8.00	PASS
				RU8	-9.52	≤8.00	PASS
			52Tone	RU37	-11.99	≤8.00	PASS
				RU39	-11.92	≤8.00	PASS
				RU40	-11.26	≤8.00	PASS
			106Tone	RU53	-14.06	≤8.00	PASS
				RU54	-13.03	≤8.00	PASS
	Ant1	2462	26Tone	RU0	-13.58	≤8.00	PASS
				RU4	-12.68	≤8.00	PASS
				RU8	-13.00	≤8.00	PASS
			52Tone	RU37	-15.59	≤8.00	PASS
				RU39	-15.44	≤8.00	PASS

			106Tone	RU40	-14.56	≤8.00	PASS
				RU53	-17.38	≤8.00	PASS
				RU54	-16.31	≤8.00	PASS
	Ant2	2462	26Tone	RU0	-11.30	≤8.00	PASS
				RU4	-11.43	≤8.00	PASS
				RU8	-11.27	≤8.00	PASS
		52Tone		RU37	-15.29	≤8.00	PASS
				RU39	-15.19	≤8.00	PASS
				RU40	-14.02	≤8.00	PASS
		106Tone		RU53	-16.11	≤8.00	PASS
				RU54	-15.89	≤8.00	PASS
	total	2462	26Tone	RU0	-9.28	≤8.00	PASS
				RU4	-9.00	≤8.00	PASS
				RU8	-9.04	≤8.00	PASS
		52Tone		RU37	-12.43	≤8.00	PASS
				RU39	-12.30	≤8.00	PASS
				RU40	-11.27	≤8.00	PASS
		106Tone		RU53	-13.69	≤8.00	PASS
				RU54	-13.08	≤8.00	PASS
11AX40MIMO	Ant1	2422	242Tone	RU61	-18.11	≤8.00	PASS
				RU62	-17.86	≤8.00	PASS
	Ant2	2422	242Tone	RU61	-16.57	≤8.00	PASS
				RU62	-16.52	≤8.00	PASS
	total	2422	242Tone	RU61	-14.26	≤8.00	PASS
				RU62	-14.13	≤8.00	PASS
	Ant1	2437	242Tone	RU61	-18.30	≤8.00	PASS
				RU62	-18.53	≤8.00	PASS
	Ant2	2437	242Tone	RU61	-16.86	≤8.00	PASS
				RU62	-15.46	≤8.00	PASS
	total	2437	242Tone	RU61	-14.51	≤8.00	PASS
				RU62	-13.72	≤8.00	PASS
	Ant1	2452	242Tone	RU61	-18.82	≤8.00	PASS
				RU62	-18.51	≤8.00	PASS
	Ant2	2452	242Tone	RU61	-17.80	≤8.00	PASS
				RU62	-16.66	≤8.00	PASS
	total	2452	242Tone	RU61	-15.27	≤8.00	PASS
				RU62	-14.48	≤8.00	PASS

Note: The Duty Cycle Factor is compensated in the graph.

7.5. Test graphs

