

































6dB Bandwidth:



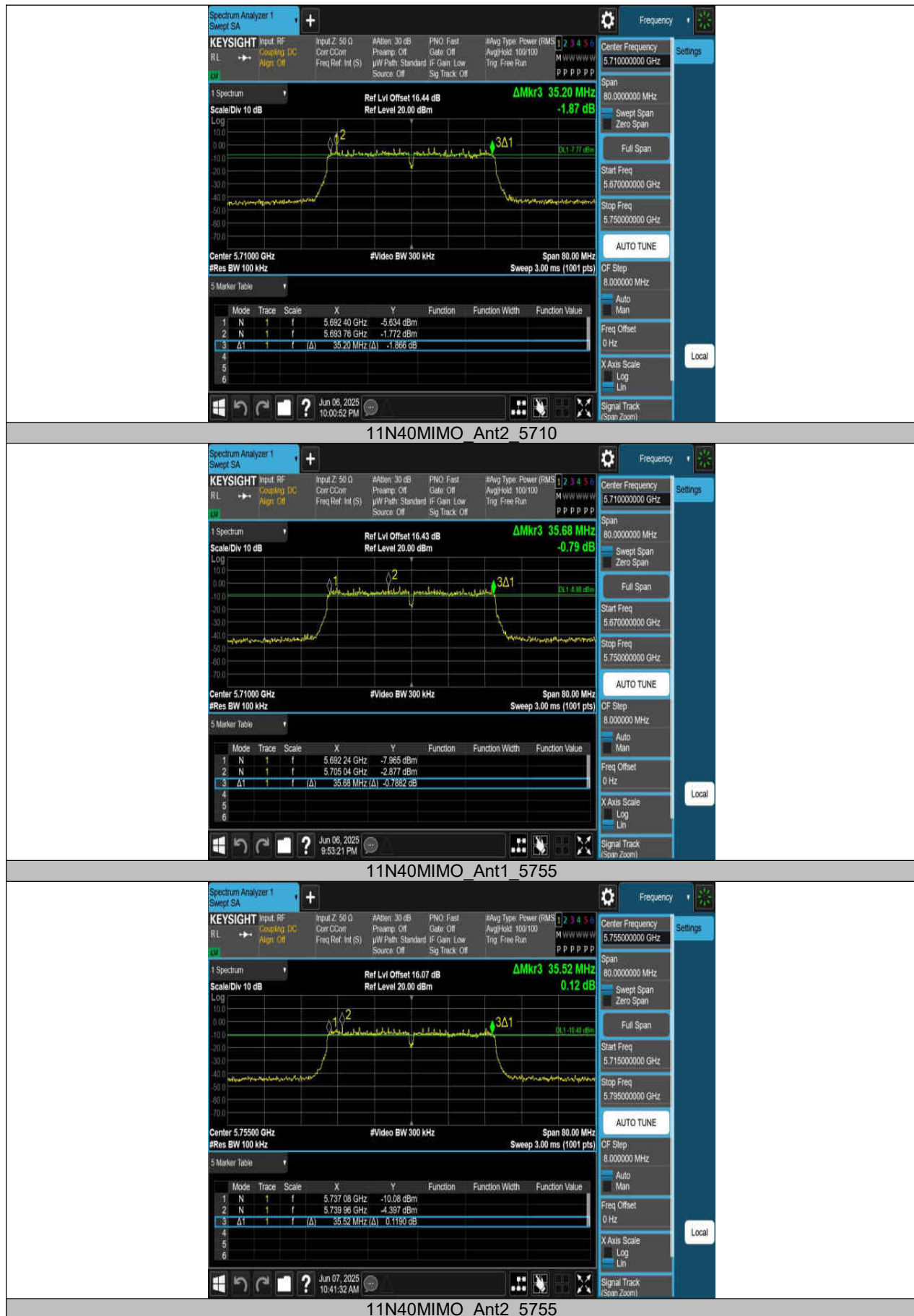


























10. Maximum Output Power

10.1. Block Diagram of Test Setup

Same as section 8.1

10.2. Limits

FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Conducted Output Power	☐ Outdoor Access Point: 1 W (30 dBm)	5150-5250
	☐ Indoor Access Point: 1 W (30 dBm)	
	☐ Fixed Point-To-Point Access Points: 1 W (30 dBm)	
	☒ Client Devices: 250 mW (24 dBm)	
	Shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz.	5250-5350 5470-5725
	Shall not exceed 1 Watt (30 dBm).	5725-5850
Note: For 802.11n and 802.11ac, the EUT incorporates a MIMO function. The Antenna directional gain is 7.98 dBi. The Maximum Output Power limit is the above limits-(7.89-6)		

ISED RSS-247 ISSUE 2		
Test Item	Limit	Frequency Range (MHz)
Conducted Output Power or e.i.r.p.	The maximum e.i.r.p. shall not exceed 200 mW (23 dBm) or 10 + 10 log ₁₀ B, dBm, whichever power is less. B is the 99 % emission bandwidth in megahertz.	5150-5250
	a. The maximum conducted output power shall not exceed 250 mW (24 dBm) or 11 + 10 log ₁₀ B dBm, whichever is less.	5250-5350
	b. The maximum e.i.r.p. shall not exceed 1.0 W (30 dBm) or 17 + 10 log ₁₀ B dBm, whichever is less. B is the 99 % emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.	5250-5350 5470-5600 5650-5725
	Shall not exceed 1 Watt (30 dBm). The e.i.r.p. shall not exceed 4 W	5725-5850
	Note: For 802.11n and 802.11ac, the EUT incorporates a MIMO function. The Antenna directional gain is 7.98 dBi. The Maximum Output Power limit is the above limits-(7.89-6)	

Note: The above limits are based upon the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

10.3. Test Procedure

- (1) Connect each EUT's antenna output to power meter by RF cable and attenuator
- (2) Add each antenna port's results to get the total output power of EUT.

10.4. Test Result

Test Mode	Ant.	Freq. (MHz)	Channel Power (dBm)	DC Factor (dBm)	Result (dBm)	Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)	Verdict
11A	Ant1	5180	12.32	0.06	12.38	23.98	17.26	22.49	PASS
	Ant2	5180	15.07	0.03	15.10	23.98	19.98	22.50	PASS
	Ant1	5200	14.03	0.23	14.26	23.98	19.14	20.60	PASS
	Ant2	5200	14.73	0.12	14.85	23.98	19.73	22.49	PASS
	Ant1	5240	13.44	0.12	13.56	23.98	18.44	22.48	PASS
	Ant2	5240	14.18	0.12	14.30	23.98	19.18	20.59	PASS
	Ant1	5260	13.70	0.12	13.82	23.88	18.70	22.49	PASS
	Ant2	5260	13.89	0.23	14.12	23.83	19.00	22.49	PASS
	Ant1	5280	13.26	0.12	13.38	23.84	18.26	20.60	PASS
	Ant2	5280	13.59	0.12	13.71	23.88	18.59	26.99	PASS
	Ant1	5320	10.49	0.00	10.49	23.81	15.37	26.99	PASS
	Ant2	5320	12.72	0.03	12.75	23.92	17.63	25.10	PASS
	Ant1	5500	13.05	0.12	13.17	23.91	18.05	26.99	PASS
	Ant2	5500	8.67	0.12	8.79	23.88	13.67	26.99	PASS
	Ant1	5580	14.33	0.12	14.45	23.86	19.33	25.10	PASS
	Ant2	5580	10.74	0.23	10.97	23.92	15.85	26.99	PASS
	Ant1	5700	10.18	0.03	10.21	23.83	15.09	26.99	PASS
	Ant2	5700	11.62	0.00	11.62	23.86	16.50	25.10	PASS
	Ant1	5720_U NII-2C	14.04	0.12	14.16	22.66	19.04	26.99	PASS
	Ant2	5720_U NII-2C	11.02	0.12	11.14	22.62	16.02	26.99	PASS
	Ant1	5720_U NII-3	7.24	0.12	7.36	30.00	12.24	25.10	PASS
	Ant2	5720_U NII-3	4.29	0.12	4.41	30.00	9.29	26.99	PASS
	Ant1	5745	13.94	0.12	14.06	30.00	18.94	26.99	PASS
	Ant2	5745	11.81	0.12	11.93	30.00	16.81	25.10	PASS
	Ant1	5785	13.12	0.12	13.24	30.00	18.12	26.99	PASS
	Ant2	5785	10.65	0.23	10.88	30.00	15.76	26.99	PASS
	Ant1	5825	12.18	0.23	12.41	30.00	17.29	25.10	PASS
	Ant2	5825	10.21	0.12	10.33	30.00	15.21	26.99	PASS
11N20MI MO	Ant1	5180	8.56	0.03	8.59	23.98	13.47	26.99	PASS
	Ant2	5180	8.72	0.03	8.75	23.98	13.63	25.10	PASS
	total	5180	---	---	11.68	22.09	16.56	---	PASS
	Ant1	5200	10.52	0.03	10.55	23.98	15.43	---	PASS
	Ant2	5200	11.38	0.03	11.41	23.98	16.29	---	PASS
	total	5200	---	---	14.01	22.09	18.89	---	PASS
	Ant1	5240	10.44	0.03	10.47	23.98	15.35	---	PASS
	Ant2	5240	10.90	0.00	10.90	23.98	15.78	---	PASS
	total	5240	---	---	13.70	22.09	18.58	---	PASS
	Ant1	5260	10.79	0.03	10.82	23.98	15.70	---	PASS
	Ant2	5260	11.21	0.03	11.24	23.98	16.12	---	PASS
	total	5260	---	---	14.05	22.09	18.93	---	PASS
	Ant1	5280	10.04	0.07	10.11	23.98	14.99	---	PASS
	Ant2	5280	10.57	0.07	10.64	23.98	15.52	---	PASS
	total	5280	---	---	13.39	22.09	18.27	25.60	PASS
	Ant1	5320	10.20	0.00	10.20	23.95	15.08	25.59	PASS
	Ant2	5320	10.52	0.03	10.55	23.98	15.43	23.70	PASS
	total	5320	---	---	13.39	22.09	18.27	25.59	PASS
	Ant1	5500	9.76	0.00	9.76	23.98	14.64	25.60	PASS
	Ant2	5500	8.88	0.07	8.95	23.98	13.83	23.70	PASS
	total	5500	---	---	12.38	22.09	17.26	26.99	PASS
	Ant1	5580	11.12	0.03	11.15	23.98	16.03	26.99	PASS
	Ant2	5580	9.80	0.03	9.83	23.98	14.71	25.10	PASS
	total	5580	---	---	13.55	22.09	18.43	26.99	PASS

	Ant1	5700	7.95	0.00	7.95	23.98	12.83	26.99	PASS
	Ant2	5700	7.71	0.03	7.74	23.94	12.62	25.10	PASS
	total	5700	---	---	10.86	22.09	15.74	26.99	PASS
	Ant1	5720_U NII-2C	10.46	0.00	10.46	22.75	15.34	26.99	PASS
	Ant2	5720_U NII-2C	10.10	0.00	10.10	22.74	14.98	25.10	PASS
	total	5720_U NII-2C	---	---	13.29	22.09	18.17	26.99	PASS
	Ant1	5720_U NII-3	3.96	0.00	3.96	30.00	8.84	26.99	PASS
	Ant2	5720_U NII-3	3.72	0.00	3.72	30.00	8.60	25.10	PASS
	total	5720_U NII-3	---	---	6.85	28.11	11.73	26.99	PASS
	Ant1	5745	10.56	0.02	10.58	30.00	15.46	26.99	PASS
	Ant2	5745	10.80	0.00	10.80	30.00	15.68	25.10	PASS
	total	5745	---	---	13.70	28.11	18.58	26.99	PASS
	Ant1	5785	10.01	0.03	10.04	30.00	14.92	26.99	PASS
	Ant2	5785	10.24	0.07	10.31	30.00	15.19	25.10	PASS
	total	5785	---	---	13.19	28.11	18.07	---	PASS
	Ant1	5825	9.17	0.07	9.24	30.00	14.12	---	PASS
	Ant2	5825	9.45	0.00	9.45	30.00	14.33	---	PASS
	total	5825	---	---	12.36	28.11	17.24	---	PASS
11N40MI MO	Ant1	5190	10.92	0.07	10.99	23.98	15.87	---	PASS
	Ant2	5190	11.02	0.07	11.09	23.98	15.97	---	PASS
	total	5190	---	---	14.05	22.09	18.93	---	PASS
	Ant1	5230	10.43	0.13	10.56	23.98	15.44	---	PASS
	Ant2	5230	10.92	0.07	10.99	23.98	15.87	---	PASS
	total	5230	---	---	13.79	22.09	18.67	22.49	PASS
	Ant1	5270	10.38	0.07	10.45	23.98	15.33	22.49	PASS
	Ant2	5270	10.88	0.07	10.95	23.98	15.83	20.60	PASS
	total	5270	---	---	13.72	22.09	18.60	22.51	PASS
	Ant1	5310	9.78	0.07	9.85	23.98	14.73	22.48	PASS
	Ant2	5310	10.29	0.07	10.36	23.98	15.24	20.59	PASS
	total	5310	---	---	13.12	22.09	18.00	22.49	PASS
	Ant1	5510	10.13	0.07	10.20	23.98	15.08	22.49	PASS
	Ant2	5510	9.12	0.13	9.25	23.98	14.13	20.60	PASS
	total	5510	---	---	12.76	22.09	17.64	26.99	PASS
	Ant1	5550	10.95	0.07	11.02	23.98	15.90	26.99	PASS
	Ant2	5550	9.55	0.07	9.62	23.98	14.50	25.10	PASS
	total	5550	---	---	13.39	22.09	18.27	26.99	PASS
	Ant1	5670	11.19	0.07	11.26	23.98	16.14	26.99	PASS
	Ant2	5670	10.29	0.07	10.36	23.98	15.24	25.10	PASS
	total	5670	---	---	13.84	22.09	18.72	26.99	PASS
	Ant1	5710_U NII-2C	11.22	0.07	11.29	23.98	16.17	26.99	PASS
	Ant2	5710_U NII-2C	10.71	0.07	10.78	23.98	15.66	25.10	PASS
	total	5710_U NII-2C	---	---	14.05	22.09	18.93	26.99	PASS
	Ant1	5710_U NII-3	1.03	0.07	1.10	30.00	5.98	26.99	PASS
	Ant2	5710_U NII-3	0.61	0.07	0.68	30.00	5.56	25.10	PASS
	total	5710_U NII-3	---	---	3.91	28.11	8.79	26.99	PASS
	Ant1	5755	10.13	0.07	10.20	30.00	15.08	26.99	PASS
	Ant2	5755	7.42	0.07	7.49	30.00	12.37	25.10	PASS
	total	5755	---	---	12.06	28.11	16.94	26.99	PASS
	Ant1	5795	9.47	0.07	9.54	30.00	14.42	26.99	PASS

	Ant2	5795	6.23	0.07	6.30	30.00	11.18	25.10	PASS
	total	5795	---	---	11.23	28.11	16.11	26.99	PASS
11AC20M IMO	Ant1	5180	8.59	0.03	8.62	23.98	13.50	26.99	PASS
	Ant2	5180	8.73	0.03	8.76	23.98	13.64	25.10	PASS
	total	5180	---	---	11.70	22.09	16.58	---	PASS
	Ant1	5200	11.01	0.03	11.04	23.98	15.92	---	PASS
	Ant2	5200	11.03	0.03	11.06	23.98	15.94	---	PASS
	total	5200	---	---	14.06	22.09	18.94	---	PASS
	Ant1	5240	10.52	0.03	10.55	23.98	15.43	---	PASS
	Ant2	5240	10.60	0.03	10.63	23.98	15.51	---	PASS
	total	5240	---	---	13.60	22.09	18.48	---	PASS
	Ant1	5260	10.88	0.03	10.91	23.98	15.79	---	PASS
	Ant2	5260	10.91	0.03	10.94	23.98	15.82	---	PASS
	total	5260	---	---	13.94	22.09	18.82	---	PASS
	Ant1	5280	10.51	0.03	10.54	23.93	15.42	---	PASS
	Ant2	5280	10.71	0.00	10.71	23.97	15.59	---	PASS
	total	5280	---	---	13.64	22.09	18.52	25.59	PASS
	Ant1	5320	7.31	0.03	7.34	23.96	12.22	25.60	PASS
	Ant2	5320	7.73	0.03	7.76	23.95	12.64	23.70	PASS
	total	5320	---	---	10.57	22.09	15.45	25.59	PASS
	Ant1	5500	10.18	0.00	10.18	23.97	15.06	25.58	PASS
	Ant2	5500	7.76	0.03	7.79	23.98	12.67	23.69	PASS
	total	5500	---	---	12.16	22.09	17.04	26.99	PASS
	Ant1	5580	11.35	0.03	11.38	23.94	16.26	26.99	PASS
	Ant2	5580	7.70	0.07	7.77	23.98	12.65	25.10	PASS
	total	5580	---	---	12.95	22.09	17.83	26.99	PASS
	Ant1	5700	8.88	0.03	8.91	23.98	13.79	26.99	PASS
	Ant2	5700	8.60	0.03	8.63	23.98	13.51	25.10	PASS
	total	5700	---	---	11.78	22.09	16.66	26.99	PASS
	Ant1	5720_U NII-2C	10.87	0.03	10.90	22.78	15.78	26.99	PASS
	Ant2	5720_U NII-2C	7.79	0.03	7.82	22.77	12.70	25.10	PASS
	total	5720_U NII-2C	---	---	12.64	22.09	17.52	26.99	PASS
	Ant1	5720_U NII-3	4.49	0.03	4.52	30.00	9.40	26.99	PASS
	Ant2	5720_U NII-3	1.51	0.03	1.54	30.00	6.42	25.10	PASS
	total	5720_U NII-3	---	---	6.29	28.11	11.17	26.99	PASS
	Ant1	5745	10.99	0.03	11.02	30.00	15.90	26.99	PASS
	Ant2	5745	8.21	0.03	8.24	30.00	13.12	25.10	PASS
	total	5745	---	---	12.86	28.11	17.74	26.99	PASS
	Ant1	5785	10.23	0.00	10.23	30.00	15.11	26.99	PASS
	Ant2	5785	7.12	0.03	7.15	30.00	12.03	25.10	PASS
	total	5785	---	---	11.97	28.11	16.85	---	PASS
	Ant1	5825	9.36	0.00	9.36	30.00	14.24	---	PASS
	Ant2	5825	5.78	0.03	5.81	30.00	10.69	---	PASS
	total	5825	---	---	10.95	28.11	15.83	---	PASS
11AC40M IMO	Ant1	5190	11.18	0.07	11.25	23.98	16.13	---	PASS
	Ant2	5190	11.09	0.07	11.16	23.98	16.04	---	PASS
	total	5190	---	---	14.22	22.09	19.10	---	PASS
	Ant1	5230	10.57	0.07	10.64	23.98	15.52	---	PASS
	Ant2	5230	10.65	0.07	10.72	23.98	15.60	---	PASS
	total	5230	---	---	13.69	22.09	18.57	28.79	PASS
	Ant1	5270	10.47	0.07	10.54	23.98	15.42	28.78	PASS
	Ant2	5270	10.54	0.13	10.67	23.98	15.55	26.89	PASS
	total	5270	---	---	13.62	22.09	18.50	26.99	PASS
	Ant1	5310	10.02	0.13	10.15	23.98	15.03	26.99	PASS
	Ant2	5310	10.05	0.13	10.18	23.98	15.06	25.10	PASS

	total	5310	---	---	13.18	22.09	18.06	26.99	PASS
	Ant1	5510	10.35	0.07	10.42	23.98	15.30	26.99	PASS
	Ant2	5510	7.75	0.13	7.88	23.98	12.76	25.10	PASS
	total	5510	---	---	12.34	22.09	17.22	26.99	PASS
	Ant1	5550	11.23	0.07	11.30	23.98	16.18	26.99	PASS
	Ant2	5550	7.77	0.07	7.84	23.98	12.72	25.10	PASS
	total	5550	---	---	12.92	22.09	17.80	26.99	PASS
	Ant1	5670	11.44	0.07	11.51	23.98	16.39	26.99	PASS
	Ant2	5670	8.01	0.13	8.14	23.98	13.02	25.10	PASS
	total	5670	---	---	13.15	22.09	18.03	---	PASS
	Ant1	5710_U NII-2C	11.49	0.07	11.56	23.98	16.44	---	PASS
	Ant2	5710_U NII-2C	8.31	0.13	8.44	23.98	13.32	---	PASS
	total	5710_U NII-2C	---	---	13.28	22.09	18.16	---	PASS
	Ant1	5710_U NII-3	1.14	0.07	1.21	30.00	6.09	---	PASS
	Ant2	5710_U NII-3	-1.87	0.13	-1.74	30.00	3.14	---	PASS
	total	5710_U NII-3	---	---	2.99	28.11	7.87	22.49	PASS
	Ant1	5755	10.49	0.07	10.56	30.00	15.44	22.50	PASS
	Ant2	5755	7.63	0.07	7.70	30.00	12.58	20.60	PASS
	total	5755	---	---	12.37	28.11	17.25	22.49	PASS
	Ant1	5795	9.94	0.13	10.07	30.00	14.95	22.48	PASS
	Ant2	5795	6.63	0.07	6.70	30.00	11.58	20.59	PASS
	total	5795	---	---	11.71	28.11	16.59	22.49	PASS
11AC80M IMO	Ant1	5210	10.64	0.13	10.77	23.98	15.65	22.49	PASS
	Ant2	5210	10.69	0.13	10.82	23.98	15.70	20.60	PASS
	total	5210	---	---	13.81	22.09	18.69	26.99	PASS
	Ant1	5290	9.93	0.13	10.06	23.98	14.94	26.99	PASS
	Ant2	5290	9.97	0.13	10.10	23.98	14.98	25.10	PASS
	total	5290	---	---	13.09	22.09	17.97	26.99	PASS
	Ant1	5530	10.42	0.13	10.55	23.98	15.43	26.99	PASS
	Ant2	5530	7.42	0.13	7.55	23.98	12.43	25.10	PASS
	total	5530	---	---	12.31	22.09	17.19	26.99	PASS
	Ant1	5610	11.16	0.13	11.29	23.98	16.17	26.99	PASS
	Ant2	5610	7.44	0.13	7.57	23.98	12.45	25.10	PASS
	total	5610	---	---	12.83	22.09	17.71	26.99	PASS
	Ant1	5690_U NII-2C	10.69	0.13	10.82	23.98	15.70	26.99	PASS
	Ant2	5690_U NII-2C	7.45	0.13	7.58	23.98	12.46	25.10	PASS
	total	5690_U NII-2C	---	---	12.51	22.09	17.39	26.99	PASS
	Ant1	5690_U NII-3	-4.00	0.13	-3.87	30.00	1.01	26.99	PASS
	Ant2	5690_U NII-3	-6.94	0.13	-6.81	30.00	-1.93	25.10	PASS
	total	5690_U NII-3	---	---	-2.09	28.11	2.79	26.99	PASS
	Ant1	5775	9.81	0.13	9.94	30.00	14.82	26.99	PASS
	Ant2	5775	6.84	0.13	6.97	30.00	11.85	25.10	PASS
	total	5775	---	---	11.71	28.11	16.59	26.99	PASS

11. Power Spectral Density

11.1. Block Diagram of Test Setup

Same as section 8.1

11.2. Limits

CFR 47 FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Power Spectral Density	☐ Outdoor Access Point: 17 dBm/MHz ☒ Indoor Access Point: 17 dBm/MHz ☐ Fixed Point-To-Point Access Points: 17 dBm/MHz ☒ Client Devices: 11 dBm/MHz	5150-5250
	11 dBm/MHz	5250-5350 5470-5725
	30 dBm/500 kHz	5725-5850
	Note: For 802.11n and 802.11ac, the EUT incorporates a MIMO function. The Antenna directional gain is 7.98 dBi. The Power Spectral Density limit is the above limits-(7.89-6)	

ISED RSS-247 ISSUE 2		
Test Item	Limit	Frequency Range (MHz)
Power Spectral Density	The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.	5150-5250
	The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.	5250-5350 5470-5600 5650-5725
	30 dBm/500 kHz	5725-5850
Note: For 802.11n and 802.11ac, the EUT incorporates a MIMO function. The Antenna directional gain is 7.98 dBi. The Power Spectral Density limit is the above limits-(7.89-6)		

Note: The above limits are based upon the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

11.3. Test Procedure

The transmitter output was connected to a spectrum analyzer. Power density was measured by spectrum analyzer with 1MHz RBW and 3MHz VBW.

Connect the UUT to the spectrum analyzer and use the following settings:

5150 MHz~5250 MHz, 5250 MHz~5350 MHz, 5470 MHz~5725 MHz

Center Frequency	The centre frequency of the channel under test
Detector	RMS
RBW	1MHz
VBW	$\geq 3 \times \text{RBW}$
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

5725 MHz-5850 MHz

Center Frequency	The centre frequency of the channel under test
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