

	Ant2	5795	-0.26	2.54	2.28	≤30.00	6.36	≤36.00	PASS
	total	5795	---	---	11.73	≤30.00	16.67	≤36.00	PASS
11AC20M IMO	Ant1	5180	8.63	1.43	10.06	≤24.00	15.00	≤23.00	PASS
	Ant2	5180	8.40	1.44	9.84	≤24.00	13.92	≤23.00	PASS
	total	5180	---	---	12.96	≤24.00	17.90	≤23.00	PASS
	Ant1	5200	9.52	1.43	10.95	≤24.00	15.89	≤23.00	PASS
	Ant2	5200	8.27	1.43	9.70	≤24.00	13.78	≤23.00	PASS
	total	5200	---	---	13.38	≤24.00	18.32	≤23.00	PASS
	Ant1	5240	9.61	1.43	11.04	≤24.00	15.98	≤23.00	PASS
	Ant2	5240	7.79	1.47	9.26	≤24.00	13.34	≤23.00	PASS
	total	5240	---	---	13.25	≤24.00	18.19	≤23.00	PASS
	Ant1	5260	9.24	1.47	10.71	≤23.78	15.65	≤24.00	PASS
	Ant2	5260	7.82	1.43	9.25	≤23.78	13.33	≤24.00	PASS
	total	5260	---	---	13.05	≤23.98	17.99	≤24.00	PASS
	Ant1	5280	9.28	1.44	10.72	≤23.80	15.66	≤24.00	PASS
	Ant2	5280	7.54	1.43	8.97	≤23.84	13.05	≤24.00	PASS
	total	5280	---	---	12.94	≤23.98	17.88	≤24.00	PASS
	Ant1	5320	8.78	1.47	10.25	≤23.78	15.19	≤24.00	PASS
	Ant2	5320	6.04	1.47	7.51	≤23.77	11.59	≤24.00	PASS
	total	5320	---	---	12.10	≤23.98	17.04	≤24.00	PASS
	Ant1	5500	8.31	1.43	9.74	≤23.86	14.68	≤24.00	PASS
	Ant2	5500	6.90	1.43	8.33	≤23.84	12.41	≤24.00	PASS
	total	5500	---	---	12.10	≤23.98	17.04	≤24.00	PASS
	Ant1	5580	9.02	1.44	10.46	≤23.73	15.40	≤24.00	PASS
	Ant2	5580	8.14	1.43	9.57	≤23.74	13.65	≤24.00	PASS
	total	5580	---	---	13.05	≤23.98	17.99	≤24.00	PASS
	Ant1	5700	10.10	1.44	11.54	≤23.91	16.48	≤24.00	PASS
	Ant2	5700	5.82	1.47	7.29	≤23.75	11.37	≤24.00	PASS
	total	5700	---	---	12.93	≤23.98	17.87	≤24.00	PASS
	Ant1	5720_U NII-2C	8.31	1.44	9.75	≤22.71	14.69	≤24.00	PASS
	Ant2	5720_U NII-2C	3.50	1.47	4.97	≤22.60	9.05	≤24.00	PASS
	total	5720_U NII-2C	---	---	11.00	≤23.98	15.94	≤24.00	PASS
	Ant1	5720_U NII-3	0.96	1.44	2.40	≤30.00	7.34	≤36.00	PASS
	Ant2	5720_U NII-3	-4.35	1.47	-2.88	≤30.00	1.20	≤36.00	PASS
	total	5720_U NII-3	---	---	3.53	≤30.00	8.47	≤36.00	PASS
	Ant1	5745	11.05	1.43	12.48	≤30.00	17.42	≤36.00	PASS
	Ant2	5745	3.77	1.47	5.24	≤30.00	9.32	≤36.00	PASS
	total	5745	---	---	13.23	≤30.00	18.17	≤36.00	PASS
	Ant1	5785	9.18	1.44	10.62	≤30.00	15.56	≤36.00	PASS
	Ant2	5785	1.37	1.44	2.81	≤30.00	6.89	≤36.00	PASS
	total	5785	---	---	11.29	≤30.00	16.23	≤36.00	PASS
	Ant1	5825	8.19	1.43	9.62	≤30.00	14.56	≤36.00	PASS
	Ant2	5825	0.39	1.47	1.86	≤30.00	5.94	≤36.00	PASS
	total	5825	---	---	10.29	≤30.00	15.23	≤36.00	PASS
11AC40M IMO	Ant1	5190	6.99	2.51	9.50	≤24.00	14.44	≤23.00	PASS
	Ant2	5190	7.23	2.58	9.81	≤24.00	13.89	≤23.00	PASS
	total	5190	---	---	12.67	≤24.00	17.61	≤23.00	PASS
	Ant1	5230	8.23	2.58	10.81	≤24.00	15.75	≤23.00	PASS
	Ant2	5230	7.18	2.51	9.69	≤24.00	13.77	≤23.00	PASS
	total	5230	---	---	13.30	≤24.00	18.24	≤23.00	PASS
	Ant1	5270	8.43	2.58	11.01	≤24.00	15.95	≤24.00	PASS
	Ant2	5270	6.87	2.58	9.45	≤24.00	13.53	≤24.00	PASS
	total	5270	---	---	13.31	≤24.00	18.25	≤24.00	PASS
	Ant1	5310	8.12	2.51	10.63	≤24.00	15.57	≤24.00	PASS
	Ant2	5310	5.72	2.51	8.23	≤24.00	12.31	≤24.00	PASS

	total	5310	---	---	12.60	≤24.00	17.54	≤24.00	PASS
	Ant1	5510	7.70	2.58	10.28	≤24.00	15.22	≤24.00	PASS
	Ant2	5510	6.33	2.58	8.91	≤24.00	12.99	≤24.00	PASS
	total	5510	---	---	12.66	≤24.00	17.60	≤24.00	PASS
	Ant1	5550	7.05	2.51	9.56	≤24.00	14.50	≤24.00	PASS
	Ant2	5550	7.02	2.51	9.53	≤24.00	13.61	≤24.00	PASS
	total	5550	---	---	12.56	≤24.00	17.50	≤24.00	PASS
	Ant1	5670	9.55	2.58	12.13	≤24.00	17.07	≤24.00	PASS
	Ant2	5670	4.22	2.58	6.80	≤24.00	10.88	≤24.00	PASS
	total	5670	---	---	13.25	≤24.00	18.19	≤24.00	PASS
	Ant1	5710_U NII-2C	7.00	2.58	9.58	≤24.00	14.52	≤24.00	PASS
	Ant2	5710_U NII-2C	-1.35	2.51	1.16	≤24.00	5.24	≤24.00	PASS
	total	5710_U NII-2C	---	---	10.16	≤24.00	15.10	≤24.00	PASS
	Ant1	5710_U NII-3	-7.68	2.58	-5.10	≤30.00	-0.16	≤36.00	PASS
	Ant2	5710_U NII-3	-15.17	2.51	-12.66	≤30.00	-8.58	≤36.00	PASS
	total	5710_U NII-3	---	---	-4.40	≤30.00	0.54	≤36.00	PASS
	Ant1	5755	9.88	2.58	12.46	≤30.00	17.40	≤36.00	PASS
	Ant2	5755	2.54	2.58	5.12	≤30.00	9.20	≤36.00	PASS
	total	5755	---	---	13.20	≤30.00	18.14	≤36.00	PASS
	Ant1	5795	8.19	2.58	10.77	≤30.00	15.71	≤36.00	PASS
	Ant2	5795	0.42	2.58	3.00	≤30.00	7.08	≤36.00	PASS
	total	5795	---	---	11.44	≤30.00	16.38	≤36.00	PASS
11AC80M IMO	Ant1	5210	6.76	4.09	10.85	≤24.00	15.79	≤23.00	PASS
	Ant2	5210	7.54	4.09	11.63	≤24.00	15.71	≤23.00	PASS
	total	5210	---	---	14.27	≤24.00	19.21	≤23.00	PASS
	Ant1	5290	6.53	4.09	10.62	≤24.00	15.56	≤24.00	PASS
	Ant2	5290	6.47	4.23	10.70	≤24.00	14.78	≤24.00	PASS
	total	5290	---	---	13.67	≤24.00	18.61	≤24.00	PASS
	Ant1	5530	6.83	4.23	11.06	≤24.00	16.00	≤24.00	PASS
	Ant2	5530	7.15	4.09	11.24	≤24.00	15.32	≤24.00	PASS
	total	5530	---	---	14.16	≤24.00	19.10	≤24.00	PASS
	Ant1	5610	8.16	4.23	12.39	≤24.00	17.33	≤24.00	PASS
	Ant2	5610	8.28	4.09	12.37	≤24.00	16.45	≤24.00	PASS
	total	5610	---	---	15.39	≤24.00	20.33	≤24.00	PASS
	Ant1	5690_U NII-2C	8.09	4.23	12.32	≤24.00	17.26	≤24.00	PASS
	Ant2	5690_U NII-2C	6.04	4.09	10.13	≤24.00	14.21	≤24.00	PASS
	total	5690_U NII-2C	---	---	14.37	≤24.00	19.31	≤24.00	PASS
	Ant1	5690_U NII-3	-13.47	4.23	-9.24	≤30.00	-4.30	≤36.00	PASS
	Ant2	5690_U NII-3	-17.75	4.09	-13.66	≤30.00	-9.58	≤36.00	PASS
	total	5690_U NII-3	---	---	-7.90	≤30.00	-2.96	≤36.00	PASS
	Ant1	5775	7.80	4.23	12.03	≤30.00	16.97	≤36.00	PASS
	Ant2	5775	1.69	4.23	5.92	≤30.00	10.00	≤36.00	PASS
	total	5775	---	---	12.98	≤30.00	17.92	≤36.00	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

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: 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
Detector	RMS
RBW	500 kHz
VBW	$\geq 3 \times \text{RBW}$
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

Note:

1. For UNII-3, according to KdB publication 789033 D02 General U-NII Test Procedures New Rules v02r01, section II.F.5., it is acceptable to set RBW at 1 MHz and VBW at 3 MHz if the spectrum analyzer does not have 500 kHz RBW.

2. The value measured with RBW=1MHz is to be added with $10\log(500\text{kHz}/1\text{MHz})$ which is - 3dB. For example, if the measured value is +30 dBm using RBW=500kHz (that is +30 dBm/500kHz), then the converted value will be +33 dBm/1MHz.

3. Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.

11.4. Test Result

Test Mode	Ant.	Freq. (MHz)	Result (dBm/MHz)	Limit (dBm/MHz)	Verdict
11A	Ant1	5180	1.34	≤11.00	PASS
	Ant2	5180	1.18	≤11.00	PASS
	Ant1	5200	2.07	≤11.00	PASS
	Ant2	5200	1.68	≤11.00	PASS
	Ant1	5240	1.74	≤11.00	PASS
	Ant2	5240	0.90	≤11.00	PASS
	Ant1	5260	1.86	≤11.00	PASS
	Ant2	5260	1.43	≤11.00	PASS
	Ant1	5280	2.52	≤11.00	PASS
	Ant2	5280	0.90	≤11.00	PASS
	Ant1	5320	1.00	≤11.00	PASS
	Ant2	5320	-0.68	≤11.00	PASS
	Ant1	5500	-0.22	≤11.00	PASS
	Ant2	5500	-0.23	≤11.00	PASS
	Ant1	5580	0.61	≤11.00	PASS
	Ant2	5580	1.25	≤11.00	PASS
	Ant1	5700	3.13	≤11.00	PASS
	Ant2	5700	-0.72	≤11.00	PASS
	Ant1	5720 UNII-2C	3.13	≤11.00	PASS
	Ant2	5720 UNII-2C	-1.64	≤11.00	PASS
11N20MIMO	Ant1	5180	-1.90	≤11.00	PASS
	Ant2	5180	-0.03	≤11.00	PASS
	total	5180	2.15	≤11.00	PASS
	Ant1	5200	-0.26	≤11.00	PASS
	Ant2	5200	-0.28	≤11.00	PASS
	total	5200	2.74	≤11.00	PASS
	Ant1	5240	0.61	≤11.00	PASS
	Ant2	5240	1.35	≤11.00	PASS
	total	5240	4.01	≤11.00	PASS
	Ant1	5260	0.89	≤11.00	PASS
	Ant2	5260	0.34	≤11.00	PASS
	total	5260	3.63	≤11.00	PASS
	Ant1	5280	0.87	≤11.00	PASS
	Ant2	5280	-0.39	≤11.00	PASS
	total	5280	3.30	≤11.00	PASS
	Ant1	5320	0.66	≤11.00	PASS
	Ant2	5320	-1.99	≤11.00	PASS
	total	5320	2.54	≤11.00	PASS
	Ant1	5500	-1.59	≤11.00	PASS
	Ant2	5500	-2.52	≤11.00	PASS
	total	5500	0.98	≤11.00	PASS
	Ant1	5580	0.31	≤11.00	PASS
	Ant2	5580	-1.98	≤11.00	PASS
	total	5580	2.32	≤11.00	PASS
	Ant1	5700	0.42	≤11.00	PASS
	Ant2	5700	-6.84	≤11.00	PASS
	total	5700	1.17	≤11.00	PASS
	Ant1	5720 UNII-2C	0.42	≤11.00	PASS
	Ant2	5720 UNII-2C	-4.82	≤11.00	PASS
	total	5720 UNII-2C	1.56	≤11.00	PASS
11N40MIMO	Ant1	5190	-1.90	≤11.00	PASS
	Ant2	5190	-3.53	≤11.00	PASS
	total	5190	0.37	≤11.00	PASS
	Ant1	5230	-2.72	≤11.00	PASS
	Ant2	5230	-3.46	≤11.00	PASS
	total	5230	-0.06	≤11.00	PASS
	Ant1	5270	-3.77	≤11.00	PASS

	Ant2	5270	-1.85	≤11.00	PASS
	total	5270	0.31	≤11.00	PASS
	Ant1	5310	-2.35	≤11.00	PASS
	Ant2	5310	-4.38	≤11.00	PASS
	total	5310	-0.24	≤11.00	PASS
	Ant1	5510	-2.25	≤11.00	PASS
	Ant2	5510	-7.00	≤11.00	PASS
	total	5510	-1.00	≤11.00	PASS
	Ant1	5550	-3.25	≤11.00	PASS
	Ant2	5550	-3.31	≤11.00	PASS
	total	5550	-0.27	≤11.00	PASS
	Ant1	5670	-1.31	≤11.00	PASS
	Ant2	5670	-0.01	≤11.00	PASS
	total	5670	2.40	≤11.00	PASS
	Ant1	5710 UNII-2C	-1.84	≤11.00	PASS
	Ant2	5710 UNII-2C	-5.74	≤11.00	PASS
	total	5710 UNII-2C	-0.36	≤11.00	PASS
11AC20MIMO	Ant1	5180	-0.41	≤11.00	PASS
	Ant2	5180	-1.43	≤11.00	PASS
	total	5180	2.12	≤11.00	PASS
	Ant1	5200	0.24	≤11.00	PASS
	Ant2	5200	-0.61	≤11.00	PASS
	total	5200	2.85	≤11.00	PASS
	Ant1	5240	0.24	≤11.00	PASS
	Ant2	5240	-1.55	≤11.00	PASS
	total	5240	2.45	≤11.00	PASS
	Ant1	5260	-0.06	≤11.00	PASS
	Ant2	5260	-1.91	≤11.00	PASS
	total	5260	2.12	≤11.00	PASS
	Ant1	5280	-0.20	≤11.00	PASS
	Ant2	5280	-1.99	≤11.00	PASS
	total	5280	2.01	≤11.00	PASS
	Ant1	5320	-0.79	≤11.00	PASS
	Ant2	5320	-0.20	≤11.00	PASS
	total	5320	2.53	≤11.00	PASS
	Ant1	5500	-0.93	≤11.00	PASS
	Ant2	5500	-1.87	≤11.00	PASS
	total	5500	1.64	≤11.00	PASS
	Ant1	5580	-0.31	≤11.00	PASS
	Ant2	5580	-1.00	≤11.00	PASS
	total	5580	2.37	≤11.00	PASS
	Ant1	5700	0.97	≤11.00	PASS
	Ant2	5700	-3.28	≤11.00	PASS
	total	5700	2.36	≤11.00	PASS
	Ant1	5720 UNII-2C	-2.40	≤11.00	PASS
	Ant2	5720 UNII-2C	0.85	≤11.00	PASS
	total	5720 UNII-2C	2.53	≤11.00	PASS
11AC40MIMO	Ant1	5190	-3.96	≤11.00	PASS
	Ant2	5190	-3.18	≤11.00	PASS
	total	5190	-0.54	≤11.00	PASS
	Ant1	5230	-2.80	≤11.00	PASS
	Ant2	5230	-3.31	≤11.00	PASS
	total	5230	-0.04	≤11.00	PASS
	Ant1	5270	-3.31	≤11.00	PASS
	Ant2	5270	-3.66	≤11.00	PASS
	total	5270	0.71	≤11.00	PASS
	Ant1	5310	-2.05	≤11.00	PASS
	Ant2	5310	-4.96	≤11.00	PASS
	total	5310	-0.26	≤11.00	PASS
	Ant1	5510	-1.57	≤11.00	PASS

	Ant2	5510	-4.26	≤11.00	PASS
	total	5510	0.30	≤11.00	PASS
	Ant1	5550	-4.34	≤11.00	PASS
	Ant2	5550	-3.24	≤11.00	PASS
	total	5550	-0.74	≤11.00	PASS
	Ant1	5670	-3.26	≤11.00	PASS
	Ant2	5670	-6.36	≤11.00	PASS
	total	5670	1.23	≤11.00	PASS
	Ant1	5710_UNII-2C	-3.03	≤11.00	PASS
	Ant2	5710_UNII-2C	-6.61	≤11.00	PASS
	total	5710_UNII-2C	-1.45	≤11.00	PASS
11AC80MIMO	Ant1	5210	-4.76	≤11.00	PASS
	Ant2	5210	-5.58	≤11.00	PASS
	total	5210	-2.14	≤11.00	PASS
	Ant1	5290	-6.17	≤11.00	PASS
	Ant2	5290	-4.63	≤11.00	PASS
	total	5290	-2.32	≤11.00	PASS
	Ant1	5530	-4.31	≤11.00	PASS
	Ant2	5530	-4.00	≤11.00	PASS
	total	5530	-1.14	≤11.00	PASS
	Ant1	5610	-4.28	≤11.00	PASS
	Ant2	5610	-3.37	≤11.00	PASS
	total	5610	0.13	≤11.00	PASS
	Ant1	5690_UNII-2C	-7.02	≤11.00	PASS
	Ant2	5690_UNII-2C	-5.14	≤11.00	PASS
	total	5690_UNII-2C	-0.75	≤11.00	PASS

Test Mode	Ant.	Freq. (MHz)	Result (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
11A	Ant1	5720_UNII-3	1.98	≤30.00	PASS
	Ant2	5720_UNII-3	-3.28	≤30.00	PASS
	Ant1	5745	4.21	≤30.00	PASS
	Ant2	5745	0.22	≤30.00	PASS
	Ant1	5785	2.59	≤30.00	PASS
	Ant2	5785	-0.80	≤30.00	PASS
	Ant1	5825	2.51	≤30.00	PASS
	Ant2	5825	-2.13	≤30.00	PASS
11N20MIMO	Ant1	5720_UNII-3	-0.99	≤30.00	PASS
	Ant2	5720_UNII-3	-6.55	≤30.00	PASS
	total	5720_UNII-3	0.08	≤30.00	PASS
	Ant1	5745	1.24	≤30.00	PASS
	Ant2	5745	-7.85	≤30.00	PASS
	total	5745	1.74	≤30.00	PASS
	Ant1	5785	-1.07	≤30.00	PASS
	Ant2	5785	-7.07	≤30.00	PASS
	total	5785	-0.10	≤30.00	PASS
	Ant1	5825	0.41	≤30.00	PASS
	Ant2	5825	-5.52	≤30.00	PASS
	total	5825	1.40	≤30.00	PASS
11N40MIMO	Ant1	5710_UNII-3	-4.66	≤30.00	PASS

	Ant2	5710_UNII-3	-10.52	≤30.00	PASS
	total	5710_UNII-3	-3.66	≤30.00	PASS
	Ant1	5755	-3.99	≤30.00	PASS
	Ant2	5755	-8.20	≤30.00	PASS
	total	5755	-0.77	≤30.00	PASS
	Ant1	5795	-5.46	≤30.00	PASS
	Ant2	5795	-1.34	≤30.00	PASS
	total	5795	1.62	≤30.00	PASS
11AC20MIMO	Ant1	5720_UNII-3	-4.13	≤30.00	PASS
	Ant2	5720_UNII-3	-0.62	≤30.00	PASS
	total	5720_UNII-3	0.98	≤30.00	PASS
	Ant1	5745	1.29	≤30.00	PASS
	Ant2	5745	-5.33	≤30.00	PASS
	total	5745	2.15	≤30.00	PASS
	Ant1	5785	0.11	≤30.00	PASS
	Ant2	5785	-8.40	≤30.00	PASS
	total	5785	0.68	≤30.00	PASS
	Ant1	5825	-1.25	≤30.00	PASS
	Ant2	5825	-9.31	≤30.00	PASS
	total	5825	-0.62	≤30.00	PASS
11AC40MIMO	Ant1	5710_UNII-3	-6.09	≤30.00	PASS
	Ant2	5710_UNII-3	-10.48	≤30.00	PASS
	total	5710_UNII-3	-4.74	≤30.00	PASS
	Ant1	5755	-0.91	≤30.00	PASS
	Ant2	5755	-8.80	≤30.00	PASS
	total	5755	-0.26	≤30.00	PASS
	Ant1	5795	-6.64	≤30.00	PASS
	Ant2	5795	-2.99	≤30.00	PASS
	total	5795	-1.43	≤30.00	PASS
11AC80MIMO	Ant1	5690_UNII-3	-14.04	≤30.00	PASS
	Ant2	5690_UNII-3	-13.15	≤30.00	PASS
	total	5690_UNII-3	-6.93	≤30.00	PASS
	Ant1	5775	-8.73	≤30.00	PASS
	Ant2	5775	-4.16	≤30.00	PASS
	total	5775	-2.86	≤30.00	PASS

Note: 1.The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.

2.The Duty Cycle Factor and RBW Factor is compensated in the graph.

11.5. Original Test Data





















