

















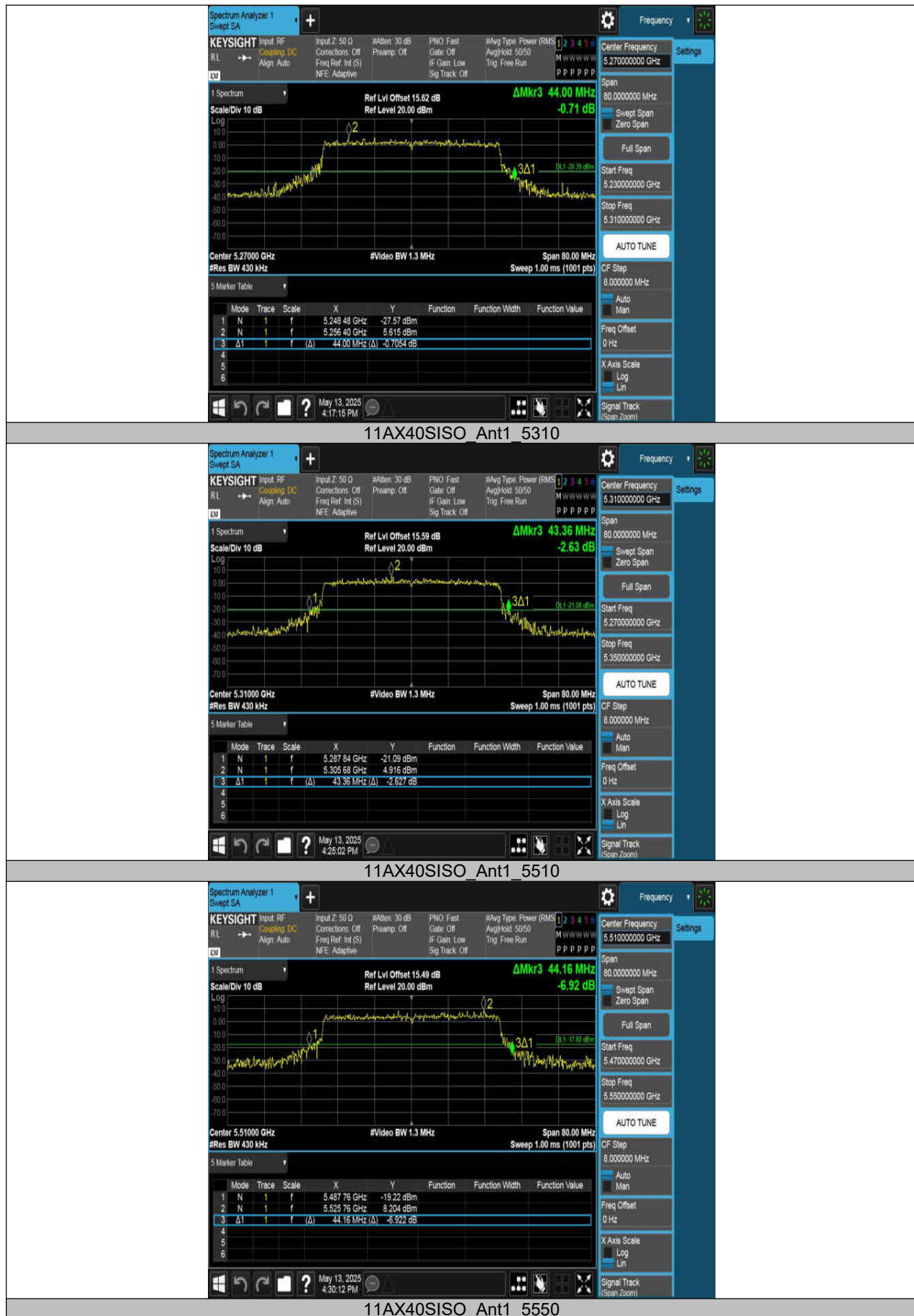
















11AX40SISO Ant1 5795



6dB Bandwidth:

11A Ant1 5720



11A Ant1 5745

















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

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 log10B, 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 log10B dBm, whichever is less.	5250-5350
	b. The maximum e.i.r.p. shall not exceed 1.0 W (30 dBm) or 17 + 10 log10B 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

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	13.21	1.41	14.62	$\leq 23.9_8$	18.15	≤ 22.49	PASS
		5200	13.53	1.41	14.94	$\leq 23.9_8$	18.47	≤ 22.45	PASS
		5240	12.93	1.41	14.34	$\leq 23.9_8$	17.87	≤ 22.38	PASS
		5260	13.07	1.41	14.48	$\leq 23.9_8$	18.01	≤ 26.99	PASS
		5280	12.60	1.44	14.04	$\leq 23.9_8$	17.57	≤ 26.99	PASS
		5320	12.46	1.45	13.91	$\leq 23.9_8$	17.44	≤ 26.99	PASS
		5500	14.46	1.41	15.87	$\leq 23.9_8$	19.40	≤ 26.99	PASS
		5580	16.31	1.40	17.71	$\leq 23.9_8$	21.24	≤ 26.99	PASS
		5700	11.59	1.41	13.00	$\leq 23.9_8$	16.53	≤ 26.99	PASS
		5720_U NII-2C	14.34	1.41	15.75	$\leq 23.3_2$	19.28	≤ 26.99	PASS
		5720_U NII-3	8.41	1.41	9.82	$\leq 30.0_0$	13.35	---	PASS
		5745	16.37	1.38	17.75	$\leq 30.0_0$	21.28	---	PASS
		5785	16.27	1.41	17.68	$\leq 30.0_0$	21.21	---	PASS
		5825	16.05	1.41	17.46	$\leq 30.0_0$	20.99	---	PASS
11N20SISO	Ant1	5180	13.37	1.49	14.86	$\leq 23.9_8$	18.39	≤ 22.65	PASS
		5200	13.06	1.55	14.61	$\leq 23.9_8$	18.14	≤ 22.63	PASS
		5240	12.39	1.54	13.93	$\leq 23.9_8$	17.46	≤ 22.64	PASS
		5260	12.64	1.48	14.12	$\leq 23.9_8$	17.65	≤ 26.99	PASS
		5280	12.02	1.47	13.49	$\leq 23.9_8$	17.02	≤ 26.99	PASS
		5320	12.16	1.50	13.66	$\leq 23.9_8$	17.19	≤ 26.99	PASS
		5500	14.11	1.50	15.61	$\leq 23.9_8$	19.14	≤ 26.99	PASS
		5580	16.10	1.49	17.59	$\leq 23.9_8$	21.12	≤ 26.99	PASS
		5700	11.81	1.47	13.28	$\leq 23.9_8$	16.81	≤ 26.99	PASS
		5720_U NII-2C	14.01	1.49	15.50	$\leq 23.5_1$	19.03	≤ 26.99	PASS
		5720_U NII-3	8.36	1.49	9.85	$\leq 30.0_0$	13.38	---	PASS
		5745	16.27	1.49	17.76	$\leq 30.0_0$	21.29	---	PASS
		5785	16.19	1.50	17.69	$\leq 30.0_0$	21.22	---	PASS
		5825	16.02	2.16	18.18	$\leq 30.0_0$	21.71	---	PASS
11N40SIS	Ant1	5190	12.99	2.65	15.64	≤ 23.9	19.17	≤ 23.01	PASS

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		5230	11.89	2.55	14.44	≤ 23.9 8	17.97	≤ 23.01	PASS
		5270	11.54	2.58	14.12	≤ 23.9 8	17.65	≤ 26.99	PASS
		5310	11.06	2.61	13.67	≤ 23.9 8	17.20	≤ 26.99	PASS
		5510	12.66	2.61	15.27	≤ 23.9 8	18.80	≤ 26.99	PASS
		5550	14.26	2.58	16.84	≤ 23.9 8	20.37	≤ 26.99	PASS
		5670	14.43	2.58	17.01	≤ 23.9 8	20.54	≤ 26.99	PASS
		5710_U NII-2C	14.57	2.61	17.18	≤ 23.9 8	20.71	≤ 26.99	PASS
		5710_U NII-3	3.86	2.61	6.47	≤ 30.0 0	10.00	---	PASS
		5755	15.98	2.61	18.59	≤ 30.0 0	22.12	---	PASS
11AC20SI SO	Ant1	5795	15.88	2.58	18.46	≤ 30.0 0	21.99	---	PASS
		5180	13.75	1.49	15.24	≤ 23.9 8	18.77	≤ 22.65	PASS
		5200	13.28	1.47	14.75	≤ 23.9 8	18.28	≤ 22.65	PASS
		5240	12.43	1.54	13.97	≤ 23.9 8	17.50	≤ 22.64	PASS
		5260	12.33	1.54	13.87	≤ 23.9 8	17.40	≤ 26.99	PASS
		5280	11.88	1.45	13.33	≤ 23.9 8	16.86	≤ 26.99	PASS
		5320	11.66	1.47	13.13	≤ 23.9 8	16.66	≤ 26.99	PASS
		5500	14.22	1.49	15.71	≤ 23.9 8	19.24	≤ 26.99	PASS
		5580	16.10	1.47	17.57	≤ 23.9 8	21.10	≤ 26.99	PASS
		5700	11.70	1.50	13.20	≤ 23.9 8	16.73	≤ 26.99	PASS
		5720_U NII-2C	13.95	1.47	15.42	≤ 23.4 2	18.95	≤ 26.99	PASS
		5720_U NII-3	8.65	1.47	10.12	≤ 30.0 0	13.65	---	PASS
		5745	16.02	1.48	17.50	≤ 30.0 0	21.03	---	PASS
		5785	15.87	1.45	17.32	≤ 30.0 0	20.85	---	PASS
		5825	15.92	1.47	17.39	≤ 30.0 0	20.92	---	PASS
11AC40SI SO	Ant1	5190	12.84	2.58	15.42	≤ 23.9 8	18.95	≤ 23.01	PASS
		5230	11.92	2.58	14.50	≤ 23.9 8	18.03	≤ 23.01	PASS
		5270	11.69	2.58	14.27	≤ 23.9 8	17.80	≤ 26.99	PASS
		5310	11.13	2.58	13.71	≤ 23.9 8	17.24	≤ 26.99	PASS
		5510	11.97	2.58	14.55	≤ 23.9 8	18.08	≤ 26.99	PASS
		5550	14.68	2.58	17.26	≤ 23.9 8	20.79	≤ 26.99	PASS
		5670	15.42	2.55	17.97	≤ 23.9	21.50	≤ 26.99	PASS

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		5710_U NII-2C	15.16	2.58	17.74	≤ 23.9 8	21.27	≤ 26.99	PASS
		5710_U NII-3	4.12	2.58	6.70	≤ 30.0 0	10.23	---	PASS
		5755	15.53	2.58	18.11	≤ 30.0 0	21.64	---	PASS
11AX20SI SO	Ant1	5795	15.21	2.91	18.12	≤ 30.0 0	21.65	---	PASS
		5180	13.66	1.86	15.52	≤ 23.9 8	19.05	≤ 22.85	PASS
		5200	12.50	1.91	14.41	≤ 23.9 8	17.94	≤ 22.82	PASS
		5240	12.20	1.83	14.03	≤ 23.9 8	17.56	≤ 22.83	PASS
		5260	12.27	1.89	14.16	≤ 23.9 8	17.69	≤ 26.99	PASS
		5280	11.48	2.50	13.98	≤ 23.9 8	17.51	≤ 26.99	PASS
		5320	11.51	1.85	13.36	≤ 23.9 8	16.89	≤ 26.99	PASS
		5500	14.03	1.83	15.86	≤ 23.9 8	19.39	≤ 26.99	PASS
		5580	15.88	1.80	17.68	≤ 23.9 8	21.21	≤ 26.99	PASS
		5700	11.27	1.82	13.09	≤ 23.9 8	16.62	≤ 26.99	PASS
		5720_U NII-2C	14.69	1.85	16.54	≤ 23.1 0	20.07	≤ 26.99	PASS
		5720_U NII-3	8.31	1.85	10.16	≤ 30.0 0	13.69	---	PASS
		5745	16.10	1.82	17.92	≤ 30.0 0	21.45	---	PASS
		5785	15.93	1.82	17.75	≤ 30.0 0	21.28	---	PASS
11AX40SI SO	Ant1	5825	15.90	1.85	17.75	≤ 30.0 0	21.28	---	PASS
		5190	12.36	2.97	15.33	≤ 23.9 8	18.86	≤ 23.01	PASS
		5230	11.30	3.01	14.31	≤ 23.9 8	17.84	≤ 23.01	PASS
		5270	11.10	2.97	14.07	≤ 23.9 8	17.60	≤ 26.99	PASS
		5310	9.33	2.97	12.30	≤ 23.9 8	15.83	≤ 26.99	PASS
		5510	12.44	2.97	15.41	≤ 23.9 8	18.94	≤ 26.99	PASS
		5550	14.79	2.93	17.72	≤ 23.9 8	21.25	≤ 26.99	PASS
		5670	13.59	2.93	16.52	≤ 23.9 8	20.05	≤ 26.99	PASS
		5710_U NII-2C	13.93	2.97	16.90	≤ 23.9 8	20.43	≤ 26.99	PASS
		5710_U NII-3	4.56	2.97	7.53	≤ 30.0 0	11.06	---	PASS
		5755	15.29	2.89	18.18	≤ 30.0 0	21.71	---	PASS
		5795	15.29	2.89	18.18	≤ 30.0 0	21.71	---	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

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 $10\log(300\text{kHz}/500\text{kHz})$ 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	Antenna	Frequency (MHz)	Result (dBm/MHz)	Limit(dBm/MHz)	EIRP	Limit(dBm/MHz)	Verdict
11A	Ant1	5180	4.86	≤ 11.00	8.39	≤ 10.00	PASS
		5200	4.44	≤ 11.00	7.97	≤ 10.00	PASS
		5240	3.43	≤ 11.00	6.96	≤ 10.00	PASS
		5260	3.63	≤ 11.00	7.16	---	PASS
		5280	3.02	≤ 11.00	6.55	---	PASS
		5320	3.32	≤ 11.00	6.85	---	PASS
		5500	4.88	≤ 11.00	8.41	---	PASS
		5580	7.06	≤ 11.00	10.59	---	PASS
		5700	1.61	≤ 11.00	5.14	---	PASS
11N20SISO	Ant1	5720_UNII-2 C	5.90	≤ 11.00	9.43	---	PASS
		5180	4.05	≤ 11.00	7.58	≤ 10.00	PASS
		5200	3.48	≤ 11.00	7.01	≤ 10.00	PASS
		5240	3.41	≤ 11.00	6.94	≤ 10.00	PASS
		5260	3.68	≤ 11.00	7.21	---	PASS
		5280	2.67	≤ 11.00	6.20	---	PASS
		5320	3.19	≤ 11.00	6.72	---	PASS
		5500	4.86	≤ 11.00	8.39	---	PASS
		5580	6.29	≤ 11.00	9.82	---	PASS
11N40SISO	Ant1	5700	1.77	≤ 11.00	5.30	---	PASS
		5720_UNII-2 C	5.97	≤ 11.00	9.50	---	PASS
		5190	1.51	≤ 11.00	5.04	≤ 10.00	PASS
		5230	0.30	≤ 11.00	3.83	≤ 10.00	PASS
		5270	0.59	≤ 11.00	4.12	---	PASS
		5310	-0.38	≤ 11.00	3.15	---	PASS
		5510	2.08	≤ 11.00	5.61	---	PASS
		5550	2.63	≤ 11.00	6.16	---	PASS
		5670	3.18	≤ 11.00	6.71	---	PASS
11AC20SISO	Ant1	5710_UNII-2 C	3.45	≤ 11.00	6.98	---	PASS
		5180	4.28	≤ 11.00	7.81	≤ 10.00	PASS
		5200	3.91	≤ 11.00	7.44	≤ 10.00	PASS
		5240	3.70	≤ 11.00	7.23	≤ 10.00	PASS
		5260	2.89	≤ 11.00	6.42	---	PASS
		5280	2.84	≤ 11.00	6.37	---	PASS
		5320	2.26	≤ 11.00	5.79	---	PASS
		5500	4.51	≤ 11.00	8.04	---	PASS
		5580	6.23	≤ 11.00	9.76	---	PASS
11AC40SISO	Ant1	5700	1.61	≤ 11.00	5.14	---	PASS
		5720_UNII-2 C	5.49	≤ 11.00	9.02	---	PASS
		5190	2.25	≤ 11.00	5.78	≤ 10.00	PASS
		5230	0.56	≤ 11.00	4.09	≤ 10.00	PASS
		5270	0.55	≤ 11.00	4.08	---	PASS
11AC40SISO	Ant1	5310	0.33	≤ 11.00	3.86	---	PASS
		5510	0.24	≤ 11.00	3.77	---	PASS

		5550	3.61	≤11.00	7.14	---	PASS
		5670	4.57	≤11.00	8.10	---	PASS
		5710_UNII-2 C	3.81	≤11.00	7.34	---	PASS
		5710_UNII-3	0.43	≤30.00	3.96	---	PASS
11AX20SIS O	Ant1	5180	3.86	≤11.00	7.39	≤10.00	PASS
		5200	4.25	≤11.00	7.78	≤10.00	PASS
		5240	3.54	≤11.00	7.07	≤10.00	PASS
		5260	3.12	≤11.00	6.65	---	PASS
		5280	4.16	≤11.00	7.69	---	PASS
		5320	3.04	≤11.00	6.57	---	PASS
		5500	4.84	≤11.00	8.37	---	PASS
		5580	6.79	≤11.00	10.32	---	PASS
		5700	2.25	≤11.00	5.78	---	PASS
		5720_UNII-2 C	5.89	≤11.00	9.42	---	PASS
11AX40SIS O	Ant1	5190	2.81	≤11.00	6.34	≤10.00	PASS
		5230	1.07	≤11.00	4.60	≤10.00	PASS
		5270	-0.28	≤11.00	3.25	---	PASS
		5310	-1.10	≤11.00	2.43	---	PASS
		5510	1.53	≤11.00	5.06	---	PASS
		5550	3.07	≤11.00	6.60	---	PASS
		5670	2.77	≤11.00	6.30	---	PASS

5725 MHz-5850 MHz

Test Mode	Ant.	Freq. (MHz)	Result (dBm/300kHz)	Result (dBm/500kHz)	Limit (dBm/500kHz)	Verdict
11A	Ant1	5745	1.7	3.92	≤30.00	PASS
		5785	1.25	3.47	≤30.00	PASS
		5825	1.13	3.35	≤30.00	PASS
11N20SISO	Ant1	5745	1.5	3.72	≤30.00	PASS
		5785	1.5	3.72	≤30.00	PASS
		5825	2.24	4.46	≤30.00	PASS
11N40SISO	Ant1	5755	-0.31	1.91	≤30.00	PASS
		5795	-1.33	0.89	≤30.00	PASS
11AC20SISO	Ant1	5745	0.99	3.21	≤30.00	PASS
		5785	1.13	3.35	≤30.00	PASS
		5825	1.01	3.23	≤30.00	PASS
11AC40SISO	Ant1	5755	-1.01	1.21	≤30.00	PASS
		5795	-0.57	1.65	≤30.00	PASS
11AX20SISO	Ant1	5745	2.03	4.25	≤30.00	PASS
		5785	1.28	3.50	≤30.00	PASS
		5825	1.31	3.53	≤30.00	PASS
11AX40SISO	Ant1	5755	-1.08	1.14	≤30.00	PASS
		5795	0.01	2.23	≤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

