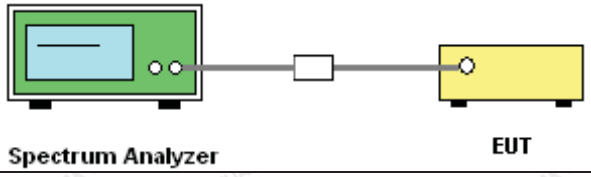
4.5. Power Spectral Density

4.5.1. Test Specification

Test Requirement:	FCC Part15 E Section 15.407 (a)
Test Method:	KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section F
Limit:	≤30.00dBm/500KHz for Band IV 5725MHz-5850MHz
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. Set the spectrum analyzer or EMI receiver span to view the entire emission bandwidth. 1. Set RBW = 510 kHz/1 MHz, VBW ≥ 3*RBW, Sweep time = Auto, Detector = RMS. 2. Allow the sweeps to continue until the trace stabilizes. 3. Use the peak marker function to determine the maximum amplitude level. 4. The E.I.R.P spectral density used radiated test method. At a test site that has been validated using the procedures of ANSI C63.4 or the latest CISPR 16-1-4 for measurements above 1 GHz, so as to simulate a near free-space environment.
Test Result:	PASS

4.5.2. Test Instruments

RF Test Room					
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 10, 2020	Dec. 09, 2021
RF cable	Times	1-40G	HKE-034	Dec. 10, 2020	Dec. 09, 2021
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Dec. 10, 2020	Dec. 09, 2021

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

4.5.3. Test data

ANT 1

Configuration Band IV (5725 - 5850 MHz)						
Mode	Test channel	Level [dBm/510kHz]	10log(500/510)	Power Spectral Density	Limit (dBm/500kHz)	Result
11a	CH149	2.23	-0.086	2.144	30	PASS
11a	CH157	1	-0.086	0.914	30	PASS
11a	CH165	2.16	-0.086	2.074	30	PASS
11n HT20	CH149	1.08	-0.086	0.994	25	PASS
11n HT20	CH157	0.6	-0.086	0.514	25	PASS
11n HT20	CH165	0.79	-0.086	0.704	25	PASS
11n HT40	CH151	-1.34	-0.086	-1.426	25	PASS
11n HT40	CH159	-1.97	-0.086	-2.056	25	PASS
11ac HT20	CH149	-0.29	-0.086	-0.376	25	PASS
11ac HT20	CH157	-0.75	-0.086	-0.836	25	PASS
11ac HT20	CH165	-1.15	-0.086	-1.236	25	PASS
11ac HT40	CH151	-3.62	-0.086	-3.706	25	PASS
11ac HT40	CH159	-3.62	-0.086	-3.706	25	PASS
11ac HT80	CH155	-6.59	-0.086	-6.676	25	PASS
11ax HT20	CH149	0.31	-0.086	0.224	25	PASS
11ax HT20	CH157	1.29	-0.086	1.204	25	PASS
11ax HT20	CH165	0.33	-0.086	0.244	25	PASS
11ax HT40	CH151	-1.75	-0.086	-1.836	25	PASS
11ax HT40	CH159	-2.23	-0.086	-2.316	25	PASS
11ax HT80	CH155	-3.76	-0.086	-3.846	25	PASS

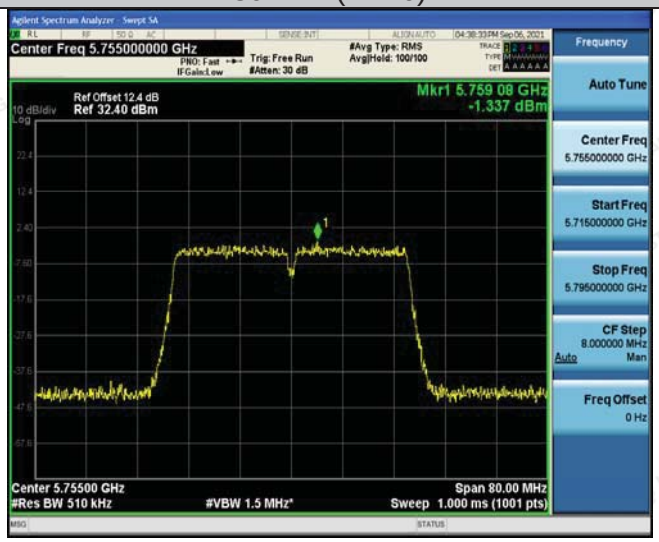
Limit=30dBm-(direction gain-6dBi)=30-(5+10log4-6)=25dBm

Test plots as follows:

Band IV (5725 – 5850 MHz)

802.11a
 Low
 Mid
 High

802.11n(HT20)
 Low
 Mid
 High

802.11n(HT40)

Low

High
802.11ac(HT20)

Low

Mid

High

802.11ac(HT40)

Low

High

802.11ac(HT80)

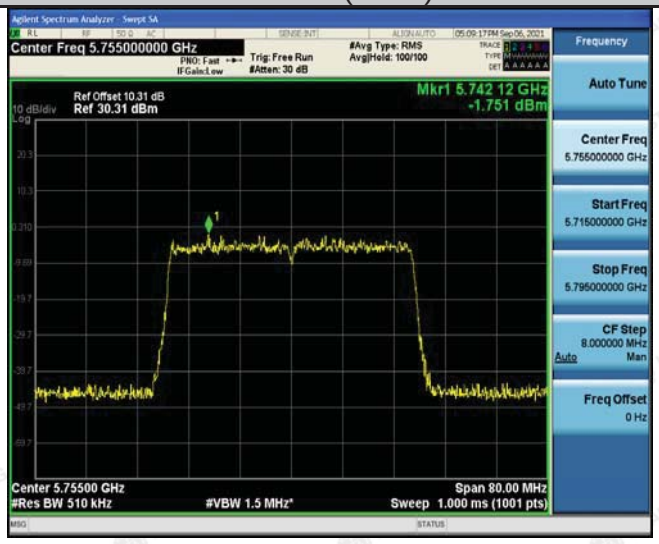
802.11ax(HT20)

Low

Mid

High

802.11ax(HT40)



Low

High

802.11ax(HT80)

ANT 2

Configuration Band IV (5725 - 5850 MHz)						
Mode	Test channel	Level [dBm/500kHz]	10log(1/x) Factor[dB]	Power Spectral Density	Limit (dBm/500kHz)	Result
11a	CH149	2.94	-0.086	2.854	30	PASS
11a	CH157	2.69	-0.086	2.604	30	PASS
11a	CH161	2.93	-0.086	2.844	30	PASS
11n(HT20)	CH149	0.96	-0.086	0.874	25	PASS
11n(HT20)	CH157	1.67	-0.086	1.584	25	PASS
11n(HT20)	CH161	1.43	-0.086	1.344	25	PASS
11n(HT40)	CH151	-0.81	-0.086	-0.896	25	PASS
11n(HT40)	CH159	-0.76	-0.086	-0.846	25	PASS
11ac(HT20)	CH149	0.05	-0.086	-0.036	25	PASS
11ac(HT20)	CH157	-0.57	-0.086	-0.656	25	PASS
11ac(HT20)	CH161	0.15	-0.086	0.064	25	PASS
11ac(HT40)	CH151	-2.64	-0.086	-2.726	25	PASS
11ac(HT40)	CH159	-3.27	-0.086	-3.356	25	PASS
11ac(HT80)	CH155	-4.67	-0.086	-4.756	25	PASS
11ax(HT20)	CH149	1.87	-0.086	1.784	25	PASS
11ax(HT20)	CH157	0.97	-0.086	0.884	25	PASS
11ax(HT20)	CH161	1.81	-0.086	1.724	25	PASS
11ax(HT40)	CH151	-1.3	-0.086	-1.386	25	PASS
11ax(HT40)	CH159	-0.77	-0.086	-0.856	25	PASS
11ax(HT80)	CH155	-2.05	-0.086	-2.136	25	PASS

limit=30dBm-(direction gain-6dBi)=30-(5+10log4-6)=25dBm

Test plots as follows:

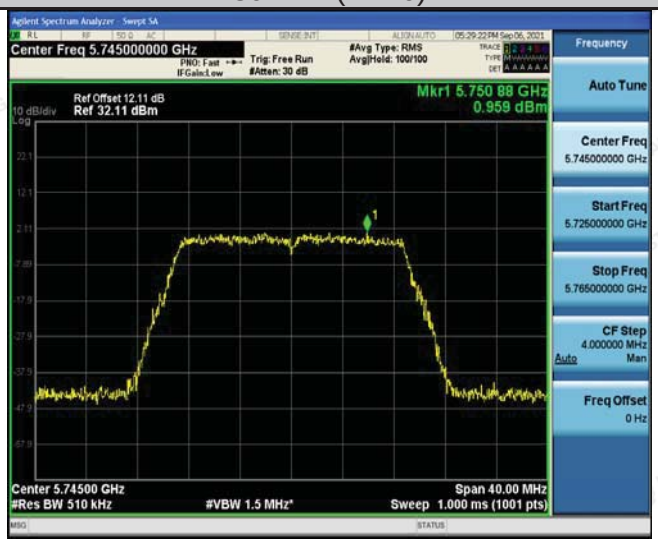
Band IV (5725 – 5850 MHz)

802.11a

Low

Mid

High

802.11n(HT20)
 Low
 Mid
 High

802.11n(HT40)

Low

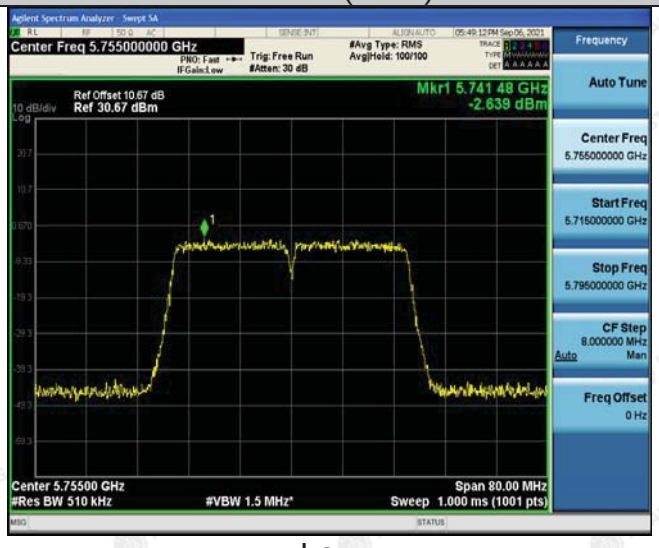
High
802.11ac(HT20)

Low

Mid

High

802.11ac(HT40)



Low

High

802.11ac(T80)

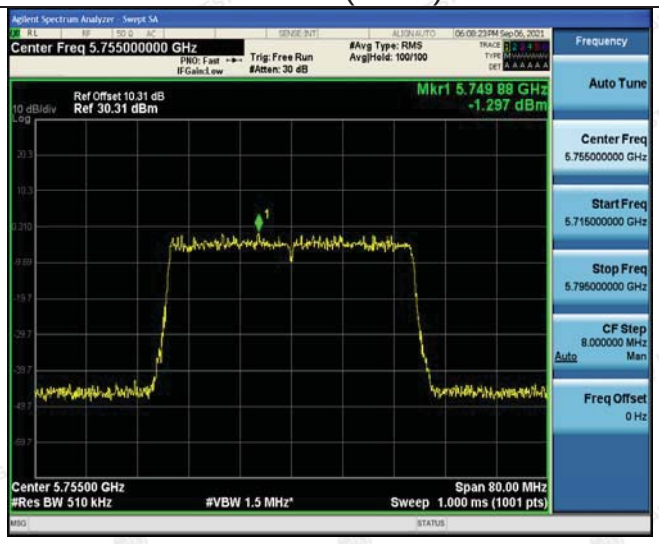
802.11ax(HT20)

Low

Mid

High

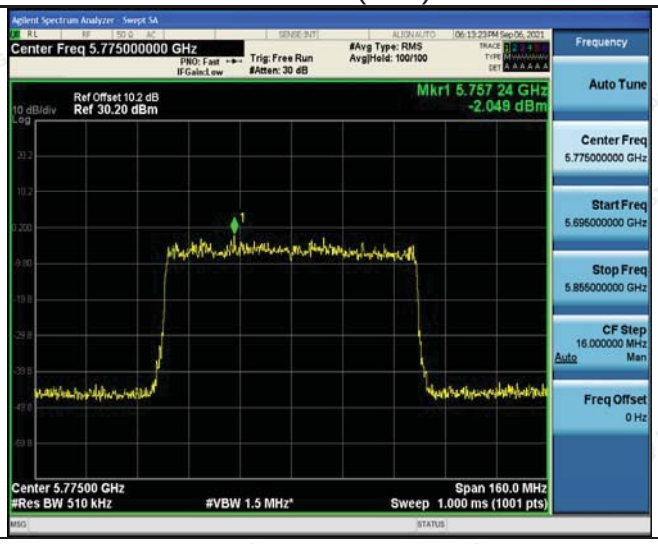
802.11ax(HT40)



Low

High

802.11ax(T80)



ANT 3

Configuration Band IV (5725 - 5850 MHz)						
Mode	Test channel	Level [dBm/510kHz]	10log(500/510)	Power Spectral Density	Limit (dBm/500kHz)	Result
11a	CH149	4.02	-0.086	3.934	30	PASS
11a	CH157	3.98	-0.086	3.894	30	PASS
11a	CH165	4.31	-0.086	4.224	30	PASS
11n HT20	CH149	3.88	-0.086	3.794	25	PASS
11n HT20	CH157	3.26	-0.086	3.174	25	PASS
11n HT20	CH165	3.86	-0.086	3.774	25	PASS
11n HT40	CH151	0.91	-0.086	0.824	25	PASS
11n HT40	CH159	1.05	-0.086	0.964	25	PASS
11ac HT20	CH149	2.52	-0.086	2.434	25	PASS
11ac HT20	CH157	1.85	-0.086	1.764	25	PASS
11ac HT20	CH165	2.01	-0.086	1.924	25	PASS
11ac HT40	CH151	0.1	-0.086	0.014	25	PASS
11ac HT40	CH159	-0.88	-0.086	-0.966	25	PASS
11ac HT80	CH155	-2.35	-0.086	-2.436	25	PASS
11ax HT20	CH149	4.74	-0.086	4.654	25	PASS
11ax HT20	CH157	4.42	-0.086	4.334	25	PASS
11ax HT20	CH165	3.49	-0.086	3.404	25	PASS
11ax HT40	CH151	0.95	-0.086	0.864	25	PASS
11ax HT40	CH159	1.32	-0.086	1.234	25	PASS
11ax HT80	CH155	-1.44	-0.086	-1.526	25	PASS

limit=30dBm-(direction gain-6dBi)=30-(5+10log4-6)=25dBm

Test plots as follows:

Band IV (5725 – 5850 MHz)

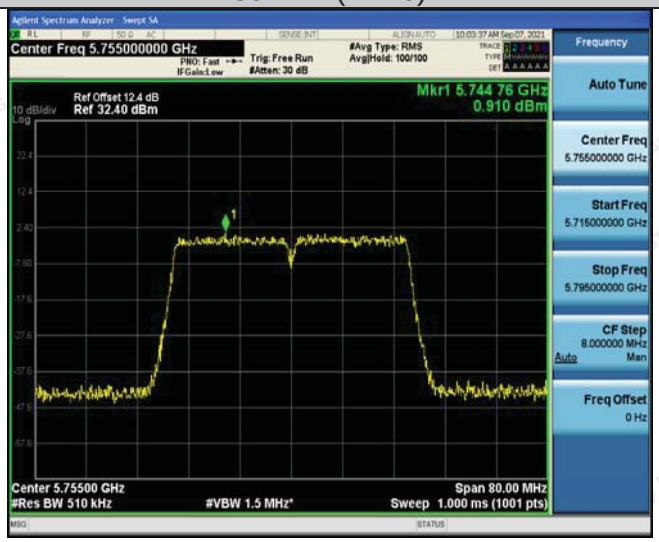
802.11a

Low

Mid

High

802.11n(HT20)
 Low
 Mid
 High

802.11n(HT40)

Low

High
802.11ac(HT20)

Low

Mid

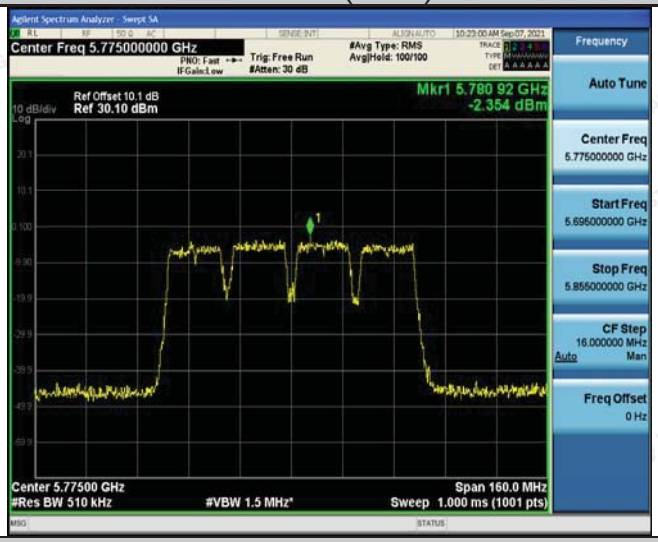
High

802.11ac(HT40)

Low

High

802.11ac(HT80)



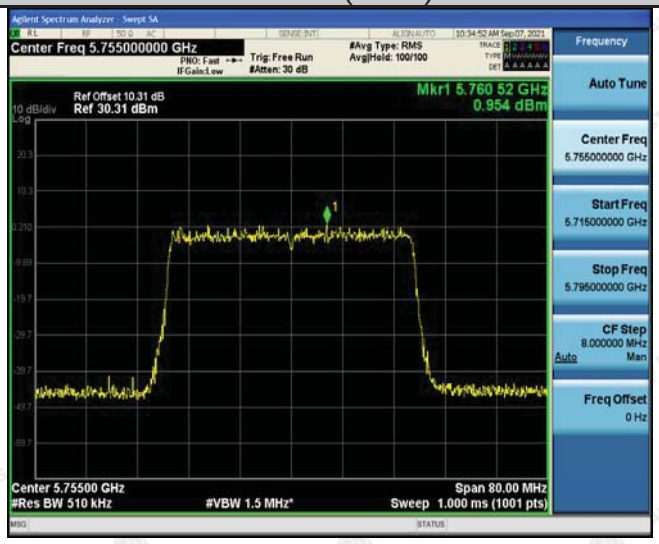
802.11ax(HT20)

Low

Mid

High

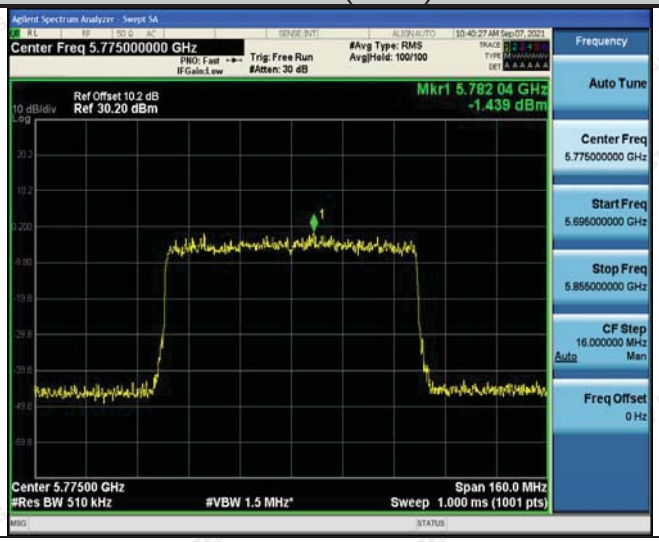
802.11ax(HT40)



Low

High

802.11ax(HT80)



ANT 4

Configuration Band IV (5725 - 5850 MHz)						
Mode	Test channel	Level [dBm/500kHz]	10log(1/x) Factor[dB]	Power Spectral Density	Limit (dBm/500kHz)	Result
11a	CH149	3.09	-0.086	3.004	30	PASS
11a	CH157	3.02	-0.086	2.934	30	PASS
11a	CH161	3.73	-0.086	3.644	30	PASS
11n(HT20)	CH149	1.95	-0.086	1.864	25	PASS
11n(HT20)	CH157	1.59	-0.086	1.504	25	PASS
11n(HT20)	CH161	2.26	-0.086	2.174	25	PASS
11n(HT40)	CH151	-1.36	-0.086	-1.446	25	PASS
11n(HT40)	CH159	-0.87	-0.086	-0.956	25	PASS
11ac(HT20)	CH149	0.18	-0.086	0.094	25	PASS
11ac(HT20)	CH157	0.19	-0.086	0.104	25	PASS
11ac(HT20)	CH161	0.55	-0.086	0.464	25	PASS
11ac(HT40)	CH151	-2.19	-0.086	-2.276	25	PASS
11ac(HT40)	CH159	-2.55	-0.086	-2.636	25	PASS
11ac(HT80)	CH155	-5.22	-0.086	-5.306	25	PASS
11ax(HT20)	CH149	2.13	-0.086	2.044	25	PASS
11ax(HT20)	CH157	1.45	-0.086	1.364	25	PASS
11ax(HT20)	CH161	2.22	-0.086	2.134	25	PASS
11ax(HT40)	CH151	-1.23	-0.086	-1.316	25	PASS
11ax(HT40)	CH159	-0.6	-0.086	-0.686	25	PASS
11ax(HT80)	CH155	-0.27	-0.086	-0.356	25	PASS

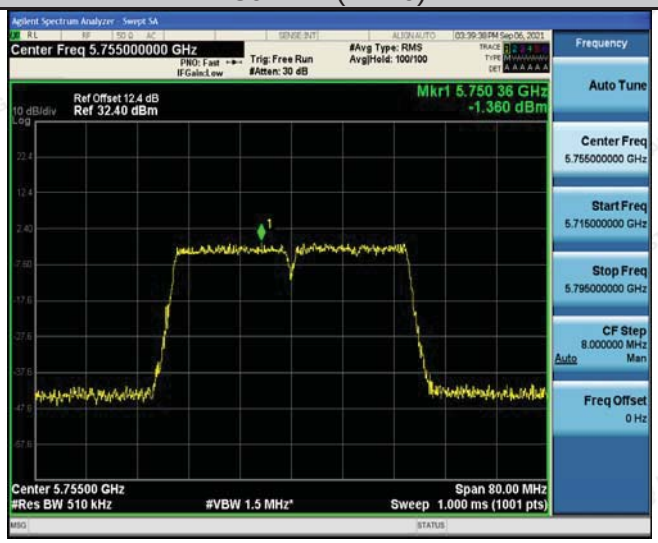
Limit=30dBm-(direction gain-6dBi)=30-(5+10log4-6)=25dBm

Test plots as follows:

Band IV (5725 – 5850 MHz)

802.11a
   Low
   Mid
   High

802.11n(HT20)
 Low
 Mid
 High

802.11n(HT40)

Low

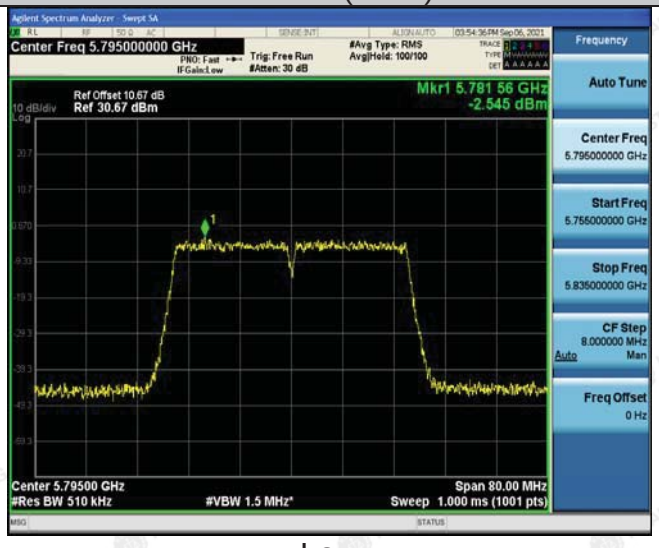
High
802.11ac(HT20)

Low

Mid

High

802.11ac(HT40)



Low

High

802.11ac(T80)

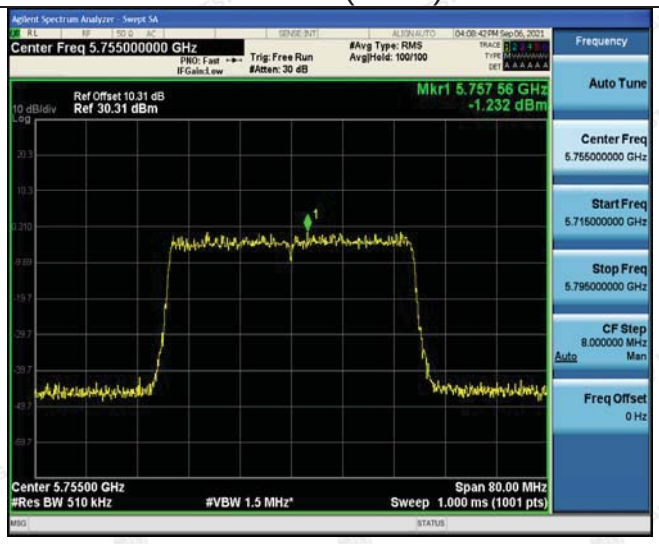
802.11ax(HT20)

Low

Mid

High

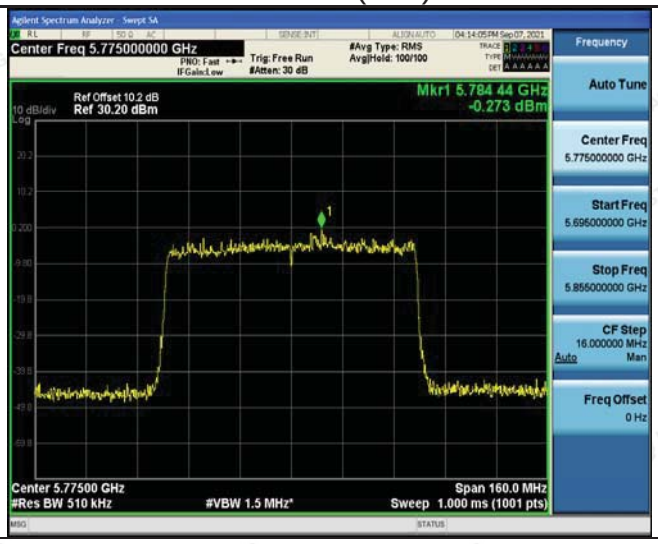
802.11ax(HT40)



Low

High

802.11ax(T80)



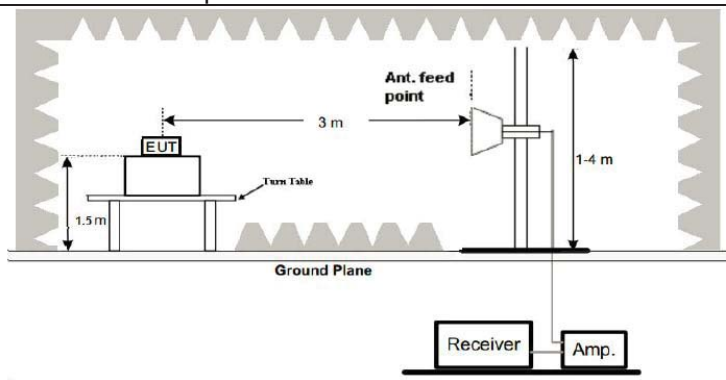
For MIMO antenna port 1+antenna port 2

Configuration Band IV (5725 - 5850 MHz)				
Mode	Test channel	**Power Density (dBm)**	**Limit (dBm)**	**Result**
11a	CH149	/	30	/
11a	CH157	/	30	/
11a	CH161	/	30	/
11n(HT20)	CH149	8.16	25	**PASS**
11n(HT20)	CH157	7.91	25	**PASS**
11n(HT20)	CH161	8.26	25	**PASS**
11n(HT40)	CH151	5.48	25	**PASS**
11n(HT40)	CH159	5.52	25	**PASS**
11ac(HT20)	CH149	6.79	25	**PASS**
11ac(HT20)	CH157	6.33	25	**PASS**
11ac(HT20)	CH161	6.56	25	**PASS**
11ac(HT40)	CH151	4.16	25	**PASS**
11ac(HT40)	CH159	3.58	25	**PASS**
11ac(HT80)	CH155	1.59	25	**PASS**
11ax(HT20)	CH149	8.59	25	**PASS**
11ax(HT20)	CH157	8.30	25	**PASS**
11ax(HT20)	CH161	8.13	25	**PASS**
11ax(HT40)	CH151	5.32	25	**PASS**
11ax(HT40)	CH159	5.64	25	**PASS**
11ax(HT80)	CH155	4.32	25	**PASS**
	Note: 1 According to KDB 662911, Result power = $10\log(10^{(ant1/10)}+10^{(ant2/10)}+10^{(ant3/10)}+10^{(ant4/10)})$. 2 Result unit: W, The end result is converted to units of dBm. Limit=30dBm-(direction gain-6dBi)=30-(5+10log4-6)=25dBm			

Note: This product supports antenna 1, antenna 2 and antenna 3, antenna 4 launch, but only support 802.11 n/ac/ax for MIMO mode, not support 802.11 a for MIMO mode.

4.6. Band edge

4.6.1. Test Specification

Test Requirement:	FCC CFR47 Part 15E Section 15.407
Test Method:	ANSI C63.10 2013
Limit:	(1)For transmitters operating in the 5.725-5.85 GHz band: (i) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. The limit of frequency below 1GHz and which fall in restricted ba nds should complies 15.209.
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

	6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasipeak or average method as specified and then reported in a data sheet.
Test Result:	PASS

4.6.2. Test Instruments

Radiated Emission Test Site (966)					
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
Receiver	R&S	ESRP3	HKE-005	Dec. 10, 2020	Dec. 09, 2021
Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 10, 2020	Dec. 09, 2021
Preamplifier	EMCI	EMC051845SE	HKE-015	Dec. 10, 2020	Dec. 09, 2021
Preamplifier	Agilent	83051A	HKE-016	Dec. 10, 2020	Dec. 09, 2021
Loop antenna	Schwarzbeck	FMZB 1519 B	HKE-014	Dec. 10, 2020	Dec. 09, 2021
Broadband antenna	Schwarzbeck	VULB 9163	HKE-012	Dec. 10, 2020	Dec. 09, 2021
Horn antenna	Schwarzbeck	9120D	HKE-013	Dec. 10, 2020	Dec. 09, 2021
Antenna Mast	Keleto	CC-A-4M	N/A	N/A	N/A
Position controller	Taiwan MF	MF7802	HKE-011	Dec. 10, 2020	Dec. 09, 2021
Radiated test software	Tonscend	TS+ Rev 2.5.0.0	HKE-082	N/A	N/A
RF cable (9KHz-1GHz)	Times	381806-001	N/A	N/A	N/A
Hf antenna	Schwarzbeck	LB-180400-KF	HKE-031	Dec. 10, 2020	Dec. 09, 2021
RF cable	Tonscend	1-18G	HKE-099	Dec. 10, 2020	Dec. 09, 2021
RF cable	Times	1-40G	HKE-034	Dec. 10, 2020	Dec. 09, 2021
Horn Antenna	Schewarzbeck	BBHA 9170	HKE-017	Dec. 10, 2020	Dec. 09, 2021
Spectrum analyzer	R&S	FSP40	HKE-025	Dec. 10, 2020	Dec. 09, 2021

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

4.6.3. Test Data

All modes of operation were investigated and the worst-case emissions of ANT.1 are reported.

Operation Mode: 802.11a Mode with 5.8G TX CH Low

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5650	53.14	-2.06	51.08	68.2	-17.12	peak
5700	88.32	-1.96	86.36	105.2	-18.84	peak
5720	95.33	-2.87	92.46	110.8	-18.34	peak
5725	110.17	-2.14	108.03	122.2	-14.17	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5650	59.32	-2.06	57.26	68.2	-10.94	peak
5700	89.32	-1.96	87.36	105.2	-17.84	peak
5720	95.24	-2.87	92.37	110.8	-18.43	peak
5725	111.22	-2.14	109.08	122.2	-13.12	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Operation Mode: TX CH High with 5.8G

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5850	110.28	-1.97	108.31	122.2	-13.89	peak
5855	94.35	-2.13	92.22	110.8	-18.58	peak
5875	88.32	-2.65	85.67	105.2	-19.53	peak
5925	53.16	-2.28	50.88	68.2	-17.32	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5850	105.19	-1.97	103.22	122.2	-18.98	peak
5855	94.67	-2.13	92.54	110.8	-18.26	peak
5875	88.49	-2.65	85.84	105.2	-19.36	peak
5925	54.26	-2.28	51.98	68.2	-16.22	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Operation Mode: 802.11n20 Mode with 5.8G TX CH Low

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5650	57.19	-2.06	55.13	68.2	-13.07	peak
5700	90.35	-1.96	88.39	105.2	-16.81	peak
5720	96.28	-2.87	93.41	110.8	-17.39	peak
5725	113.04	-2.14	110.9	122.2	-11.3	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5650	58.19	-2.06	56.13	68.2	-12.07	peak
5700	96.37	-1.96	94.41	105.2	-10.79	peak
5720	96.16	-2.87	93.29	110.8	-17.51	peak
5725	112.08	-2.14	109.94	122.2	-12.26	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Operation Mode: TX CH High with 5.8G
Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5850	110.39	-1.97	108.42	122.2	-13.78	peak
5855	95.34	-2.13	93.21	110.8	-17.59	peak
5875	97.01	-2.65	94.36	105.2	-10.84	peak
5925	54.18	-2.28	51.9	68.2	-16.3	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5850	108.32	-1.97	106.35	122.2	-15.85	peak
5855	94.35	-2.13	92.22	110.8	-18.58	peak
5875	89.37	-2.65	86.72	105.2	-18.48	peak
5925	57.19	-2.28	54.91	68.2	-13.29	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Operation Mode: 802.11n40 Mode with 5.8G TX CH Low

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5650	58.64	-2.06	56.58	68.2	-11.62	peak
5700	93.15	-1.96	91.19	105.2	-14.01	peak
5720	94.35	-2.87	91.48	110.8	-19.32	peak
5725	110.44	-2.14	108.3	122.2	-13.9	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5650	58.37	-2.06	56.31	68.2	-11.89	peak
5700	92.46	-1.96	90.5	105.2	-14.7	peak
5720	98.16	-2.87	95.29	110.8	-15.51	peak
5725	111.42	-2.14	109.28	122.2	-12.92	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Operation Mode: TX CH High with 5.8G
Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5850	106.37	-1.97	104.4	122.2	-17.8	peak
5855	93.25	-2.13	91.12	110.8	-19.68	peak
5875	88.49	-2.65	85.84	105.2	-19.36	peak
5925	54.18	-2.28	51.9	68.2	-16.3	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5850	107.92	-1.97	105.95	122.2	-16.25	peak
5855	93.25	-2.13	91.12	110.8	-19.68	peak
5875	88.19	-2.65	85.54	105.2	-19.66	peak
5925	54.16	-2.28	51.88	68.2	-16.32	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Operation Mode: 802.11ac20 Mode with 5.8G TX CH Low

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5650	57.19	-2.06	55.13	68.2	-13.07	peak
5700	88.35	-1.96	86.39	105.2	-18.81	peak
5720	95.24	-2.87	92.37	110.8	-18.43	peak
5725	110.1	-2.14	107.96	122.2	-14.24	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5650	59.38	-2.06	57.32	68.2	-10.88	peak
5700	91.65	-1.96	89.69	105.2	-15.51	peak
5720	95.37	-2.87	92.5	110.8	-18.3	peak
5725	110.28	-2.14	108.14	122.2	-14.06	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Operation Mode: TX CH High with 5.8G

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5850	110.49	-1.97	108.52	122.2	-13.68	peak
5855	95.37	-2.13	93.24	110.8	-17.56	peak
5875	89.56	-2.65	86.91	105.2	-18.29	peak
5925	54.2	-2.28	51.92	68.2	-16.28	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5850	110.49	-1.97	108.52	122.2	-13.68	peak
5855	93.58	-2.13	91.45	110.8	-19.35	peak
5875	88.32	-2.65	85.67	105.2	-19.53	peak
5925	56.23	-2.28	53.95	68.2	-14.25	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Operation Mode: 802.11ac40 Mode with 5.8G TX CH Low

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5650	58.13	-2.06	56.07	68.2	-12.13	peak
5700	88.61	-1.96	86.65	105.2	-18.55	peak
5720	94.15	-2.87	91.28	110.8	-19.52	peak
5725	110.47	-2.14	108.33	122.2	-13.87	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5650	57.16	-2.06	55.1	68.2	-13.1	peak
5700	89.32	-1.96	87.36	105.2	-17.84	peak
5720	94.37	-2.87	91.5	110.8	-19.3	peak
5725	111.05	-2.14	108.91	122.2	-13.29	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Operation Mode: TX CH High with 5.8G

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5850	113.62	-1.97	111.65	122.2	-10.55	peak
5855	94.38	-2.13	92.25	110.8	-18.55	peak
5875	88.17	-2.65	85.52	105.2	-19.68	peak
5925	56.24	-2.28	53.96	68.2	-14.24	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5850	112.68	-1.97	110.71	122.2	-11.49	peak
5855	93.25	-2.13	91.12	110.8	-19.68	peak
5875	89.17	-2.65	86.52	105.2	-18.68	peak
5925	60.22	-2.28	57.94	68.2	-10.26	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Operation Mode: 802.11ac80 Mode with 5.8G TX CH Low

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5650	57.19	-2.06	55.13	68.2	-13.07	peak
5700	89.34	-1.96	87.38	105.2	-17.82	peak
5720	94.28	-2.87	91.41	110.8	-19.39	peak
5725	110.26	-2.14	108.12	122.2	-14.08	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5650	58.72	-2.06	56.66	68.2	-11.54	peak
5700	90.34	-1.96	88.38	105.2	-16.82	peak
5720	94.16	-2.87	91.29	110.8	-19.51	peak
5725	111.38	-2.14	109.24	122.2	-12.96	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Operation Mode: TX CH High with 5.8G

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5850	114.38	-1.97	112.41	122.2	-9.79	peak
5855	94.38	-2.13	92.25	110.8	-18.55	peak
5875	89.34	-2.65	86.69	105.2	-18.51	peak
5925	56.37	-2.28	54.09	68.2	-14.11	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5850	110.49	-1.97	108.52	122.2	-13.68	peak
5855	94.35	-2.13	92.22	110.8	-18.58	peak
5875	89.27	-2.65	86.62	105.2	-18.58	peak
5925	56.3	-2.28	54.02	68.2	-14.18	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Operation Mode: 802.11ax20 Mode with 5.8G TX CH Low

Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
5650	58.92	-2.06	56.86	68.2	-11.34	peak
5700	89.74	-1.96	87.78	105.2	-17.42	peak
5720	95.34	-2.87	92.47	110.8	-18.33	peak
5725	111.38	-2.14	109.24	122.2	-12.96	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
5650	58.92	-2.06	56.86	68.2	-11.34	peak
5700	91.91	-1.96	89.95	105.2	-15.25	peak
5720	95.37	-2.87	92.5	110.8	-18.3	peak
5725	110.79	-2.14	108.65	122.2	-13.55	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Operation Mode: TX CH High with 5.8G

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5850	109.37	-1.97	107.4	122.2	-14.8	peak
5855	95.32	-2.13	93.19	110.8	-17.61	peak
5875	89.16	-2.65	86.51	105.2	-18.69	peak
5925	55.37	-2.28	53.09	68.2	-15.11	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5850	110.49	-1.97	108.52	122.2	-13.68	peak
5855	94.63	-2.13	92.5	110.8	-18.3	peak
5875	89.23	-2.65	86.58	105.2	-18.62	peak
5925	56.3	-2.28	54.02	68.2	-14.18	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Operation Mode: 802.11ax40 Mode with 5.8G TX CH Low

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5650	58.32	-2.06	56.26	68.2	-11.94	peak
5700	88.19	-1.96	86.23	105.2	-18.97	peak
5720	95.37	-2.87	92.5	110.8	-18.3	peak
5725	110.38	-2.14	108.24	122.2	-13.96	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5650	57.16	-2.06	55.1	68.2	-13.1	peak
5700	89.34	-1.96	87.38	105.2	-17.82	peak
5720	94.22	-2.87	91.35	110.8	-19.45	peak
5725	110.27	-2.14	108.13	122.2	-14.07	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Operation Mode: TX CH High with 5.8G

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5850	110.87	-1.97	108.9	122.2	-13.3	peak
5855	95.16	-2.13	93.03	110.8	-17.77	peak
5875	89.32	-2.65	86.67	105.2	-18.53	peak
5925	57.39	-2.28	55.11	68.2	-13.09	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5850	112.38	-1.97	110.41	122.2	-11.79	peak
5855	94.35	-2.13	92.22	110.8	-18.58	peak
5875	89.17	-2.65	86.52	105.2	-18.68	peak
5925	60.21	-2.28	57.93	68.2	-10.27	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Operation Mode: 802.11ax80 Mode with 5.8G TX CH Low

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5650	58.62	-2.06	56.56	68.2	-11.64	peak
5700	89.14	-1.96	87.18	105.2	-18.02	peak
5720	94.25	-2.87	91.38	110.8	-19.42	peak
5725	110.25	-2.14	108.11	122.2	-14.09	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5650	58.32	-2.06	56.26	68.2	-11.94	peak
5700	94.17	-1.96	92.21	105.2	-12.99	peak
5720	95.27	-2.87	92.4	110.8	-18.4	peak
5725	111.62	-2.14	109.48	122.2	-12.72	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Operation Mode: TX CH High with 5.8G

Horizontal

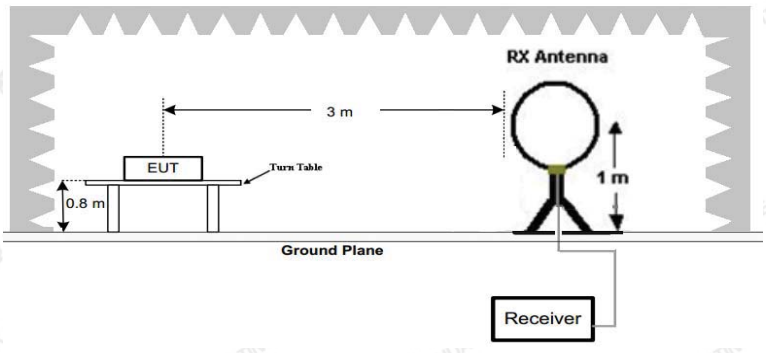
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5850	109.37	-1.97	107.4	122.2	-14.8	peak
5855	94.35	-2.13	92.22	110.8	-18.58	peak
5875	89.79	-2.65	87.14	105.2	-18.06	peak
5925	52.36	-2.28	50.08	68.2	-18.12	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

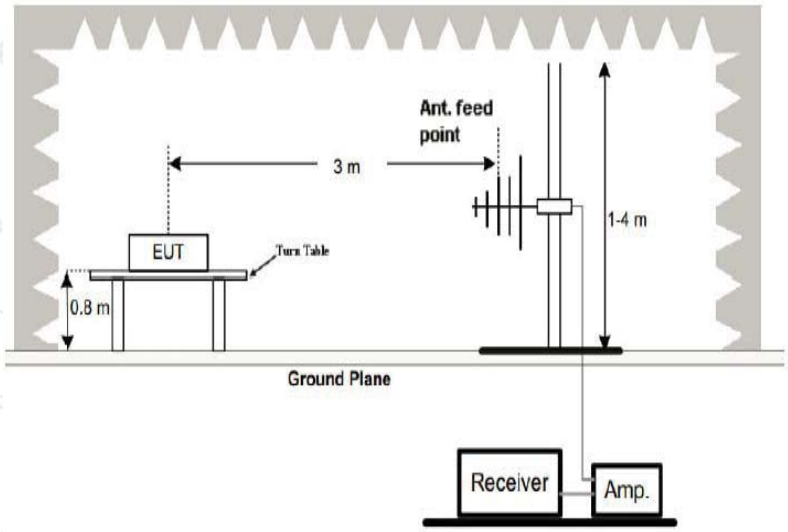
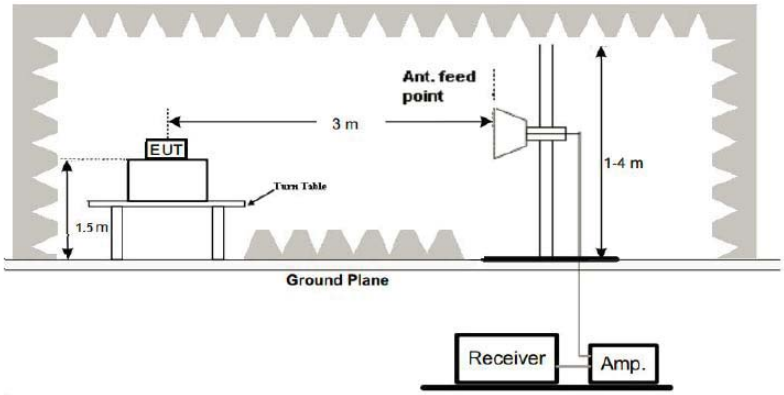
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
5850	110.47	-1.97	108.5	122.2	-13.7	peak
5855	94.35	-2.13	92.22	110.8	-18.58	peak
5875	90.37	-2.65	87.72	105.2	-17.48	peak
5925	56.23	-2.28	53.95	68.2	-14.25	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

4.7. Spurious Emission

4.7.1.1. Test Specification

<table>
<tr><td>Test Requirement:</td><td>FCC CFR47 Part 15 Section 15.407 & 15.209 & 15.205</td></tr>
<tr><td>Test Method:</td><td>KDB 789033 D02 v02r01</td></tr>
<tr><td>Frequency Range:</td><td>9kHz to 40GHz</td></tr>
<tr><td>Measurement Distance:</td><td>3 m</td></tr>
<tr><td>Antenna Polarization:</td><td>Horizontal & Vertical</td></tr>
<tr><td>Operation mode:</td><td>Transmitting mode with modulation</td></tr>
<tr><td>Receiver Setup:</td><td>
<table>
<tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td>9kHz- 150kHz</td><td>Quasi-peak</td><td>200Hz</td><td>1kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>150kHz-30MHz</td><td>Quasi-peak</td><td>9kHz</td><td>30kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(4) For transmitters operating in the 5.725-5.85 GHz band:
(i) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
The limit of frequency below 1GHz and which fall in restricted b ands should complies 15.209.</td></tr>
<tr><td>Test setup:</td><td>For radiated emissions below 30MHz
 

30MHz to 1GHz</td></tr>
</table>

	 Above 1GHz 
Test Procedure:	1. The EUT was placed on the top of a rotating table 0.8 meters above the groundat a 3 meter camber. The table was rotated 360 degrees todetermine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, whichwas mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and thenthe antenna was tuned to heights from 1 meter to 4 meters and the rotatablewas turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and SpecifiedBandwidth with Maximum Hold Mode.
	6. If the emission level of the EUT in peak mode was 10dB lower than the limitspecified, then testing could be stopped and the peak values of the EUT wouldbe

	reported. Otherwise the emissions that did not have 10dB margin would bere-tested one by one using peak, quasi-peak or average method as specified andthen reported in a data sheet.
Test results:	PASS

4.7.2. Test Data

Adapter 1:

test mode: TX 802.11a 5745MHz

All the test modes completed for test. The worst case of Radiated Emission; the test data of this mode was reported.

Below 1GHz

Horizontal

Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	75.6356	-18.68	47.40	28.72	40.00	11.28	100	4	Horizontal
2	104.7648	-15.41	41.51	26.10	43.50	17.40	100	359	Horizontal
3	170.7908	-17.26	46.66	29.40	43.50	14.10	100	359	Horizontal
4	221.2813	-14.53	45.71	31.18	46.00	14.82	100	98	Horizontal
5	355.2753	-11.51	42.05	30.54	46.00	15.46	100	209	Horizontal
6	746.5766	-3.86	37.36	33.50	46.00	12.50	100	312	Horizontal

Remark: Factor = Cable loss + Antenna factor – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

Vertical

Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	70.7808	-17.81	49.97	32.16	40.00	7.84	100	290	Vertical
2	190.2102	-15.99	44.27	28.28	43.50	15.22	100	17	Vertical
3	322.2623	-11.98	37.11	25.13	46.00	20.87	100	290	Vertical
4	429.0691	-9.87	39.92	30.05	46.00	15.95	100	33	Vertical
5	653.3634	-5.61	33.88	28.27	46.00	17.73	100	282	Vertical
6	799.9800	-3.12	34.26	31.14	46.00	14.86	100	136	Vertical

Remark: Factor = Cable loss + Antenna factor – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

Harmonics and Spurious Emissions

Frequency Range (9 kHz-30MHz)

Frequency (MHz)	Level@3m (dBµV/m)	Limit@3m (dBµV/m)
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--	--	--
--	--	--
--	--	--

Note: *1. Emission Level=Reading+ Cable loss-Antenna factor-Amp factor*

2. The emission levels are 20 dB below the limit value, which are not reported. It is deemed to comply with the requirement

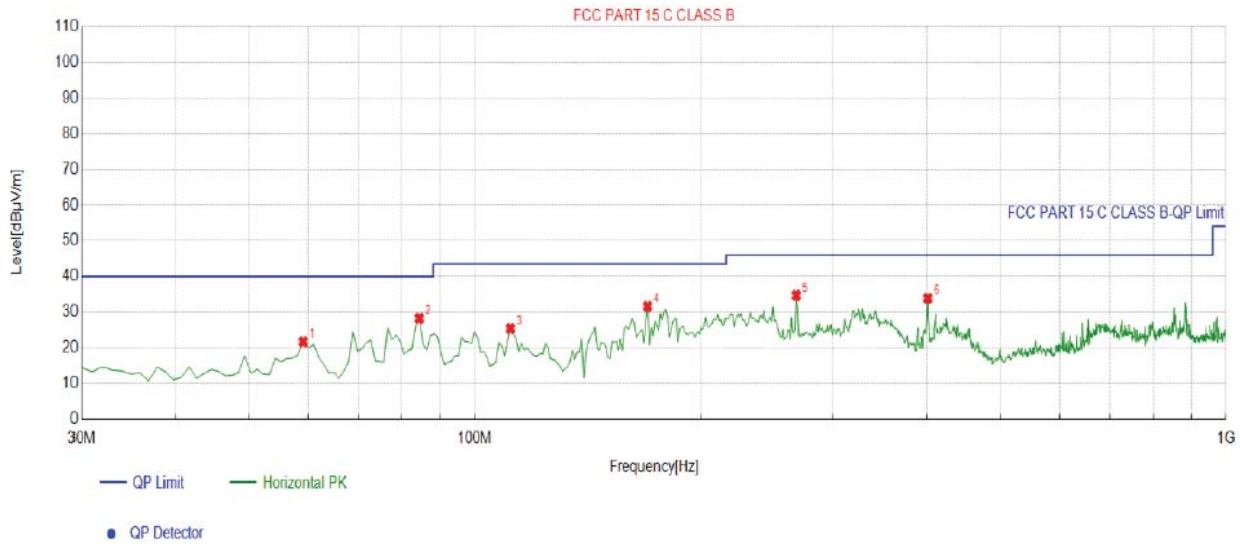
Adapter 2:

test mode: TX 802.11a 5745MHz

All the test modes completed for test. The worst case of Radiated Emission; the test data of this mode was reported.

Below 1GHz

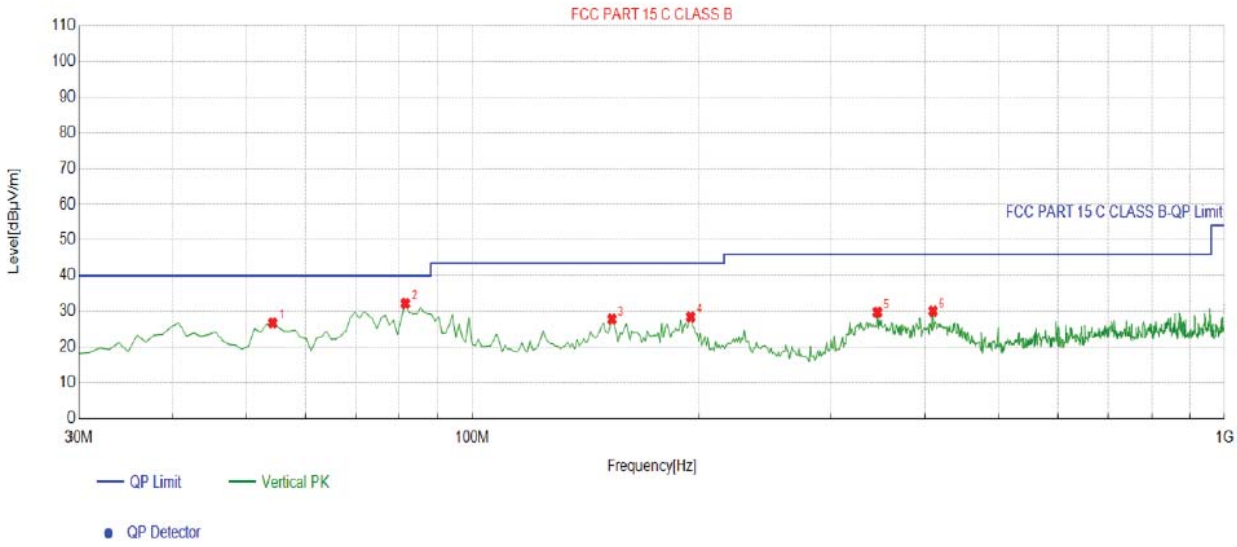
Horizontal



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	59.1291	-15.03	36.80	21.77	40.00	18.23	100	161	Horizontal
2	84.3744	-18.42	46.72	28.30	40.00	11.70	100	292	Horizontal
3	111.5616	-15.69	41.12	25.43	43.50	18.07	100	347	Horizontal
4	169.8198	-17.32	49.00	31.68	43.50	11.82	100	129	Horizontal
5	267.8879	-13.63	48.35	34.72	46.00	11.28	100	304	Horizontal
6	400.9109	-10.39	44.32	33.93	46.00	12.07	100	122	Horizontal

Remark: Factor = Cable loss + Antenna factor – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

Vertical



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	54.2743	-14.30	41.07	26.77	40.00	13.23	100	128	Vertical
2	81.4615	-19.12	51.36	32.24	40.00	7.76	100	120	Vertical
3	153.3133	-18.70	46.56	27.86	43.50	15.64	100	211	Vertical
4	195.0651	-15.53	44.03	28.50	43.50	15.00	100	3	Vertical
5	345.5656	-11.67	41.48	29.81	46.00	16.19	100	266	Vertical
6	409.6497	-10.23	40.36	30.13	46.00	15.87	100	21	Vertical

Remark: Factor = Cable loss + Antenna factor – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

Harmonics and Spurious Emissions

Frequency Range (9 kHz-30MHz)

Frequency (MHz)	Level@3m (dBµV/m)	Limit@3m (dBµV/m)
--	--	--
--	--	--
--	--	--
--	--	--

Note: *1. Emission Level=Reading+ Cable loss-Antenna factor-Amp factor*

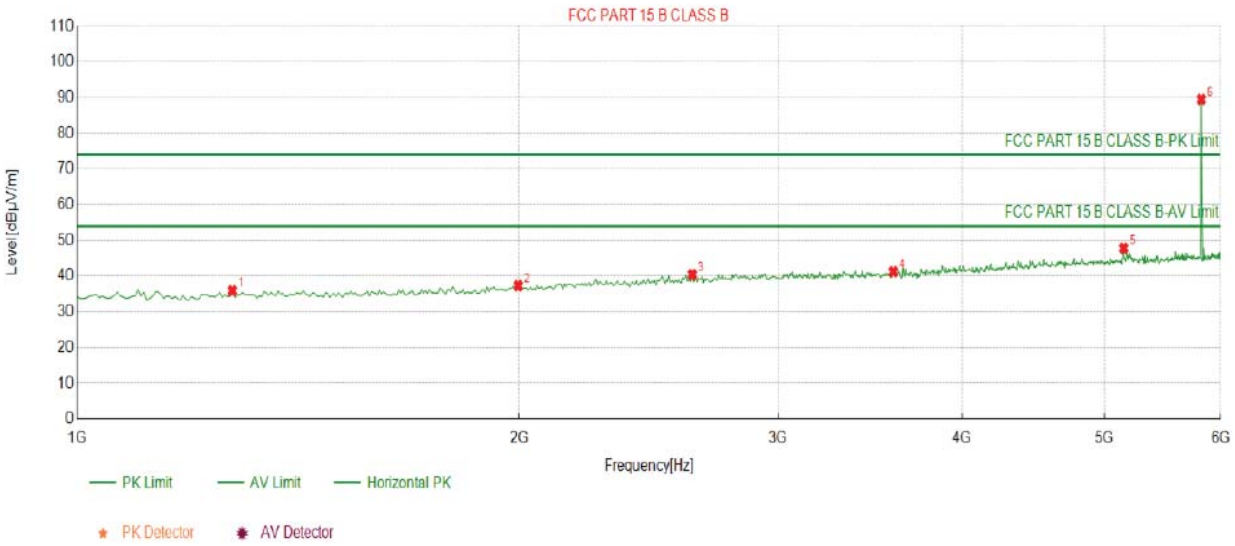
2. The emission levels are 20 dB below the limit value, which are not reported. It is deemed to comply with the requirement

Above 1GHz

RADIATED EMISSION TEST

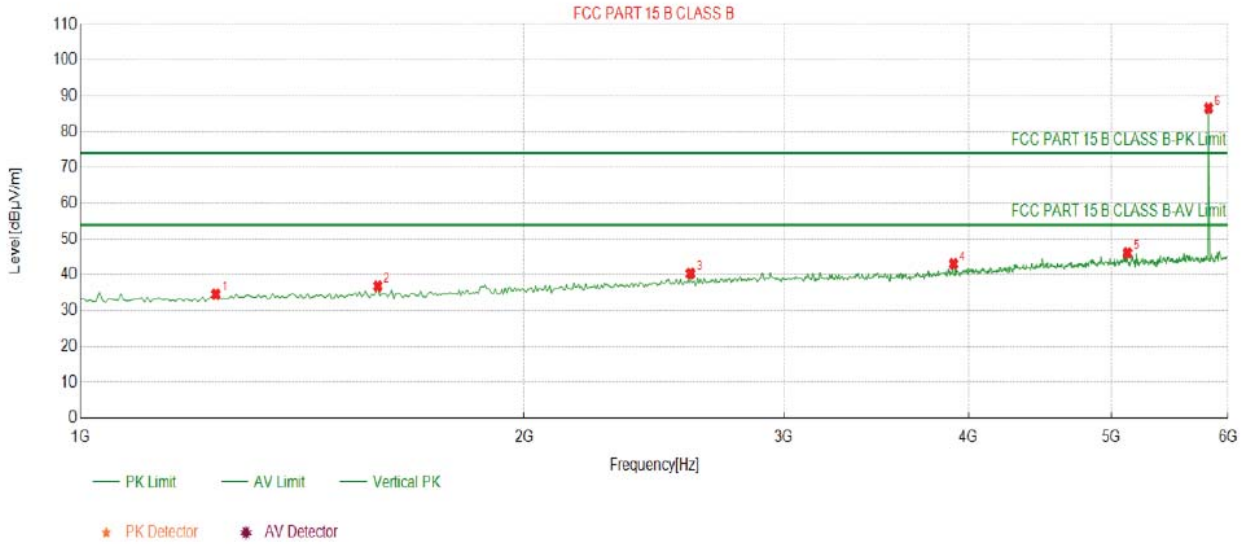
Adapter 1:

All the test modes completed for test. Only the worst result of was reported as below:



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1275.2753	-21.11	57.02	35.91	74.00	38.09	150	328	Horizontal
2	1995.9960	-18.63	55.93	37.30	74.00	36.70	150	359	Horizontal
3	2621.6216	-16.28	56.72	40.44	74.00	33.56	150	67	Horizontal
4	3592.5926	-14.66	55.92	41.26	74.00	32.74	150	209	Horizontal
5	5154.1542	-10.47	58.31	47.84	74.00	26.16	150	150	Horizontal
6	5819.8198	-9.29	98.75	89.46	74.00	-15.46	150	308	Horizontal

Remark: Factor = Cable loss + Antenna factor − Preamplifier; Level = Reading + Factor; Margin = Limit − Level

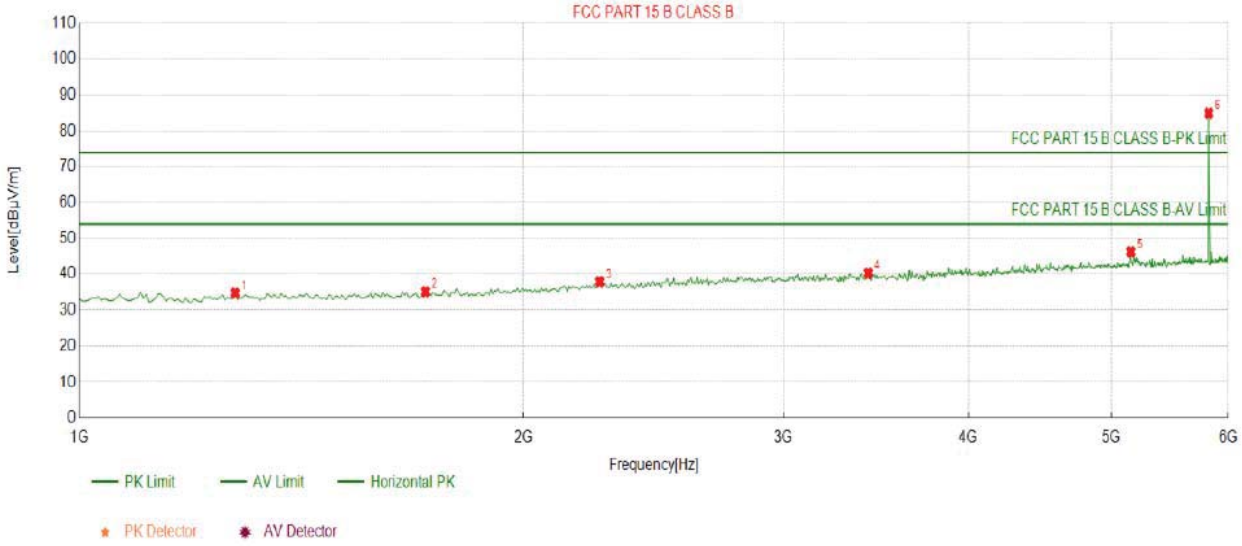


Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1235.2352	-21.40	55.99	34.59	74.00	39.41	150	24	Vertical
2	1590.5906	-20.44	57.33	36.89	74.00	37.11	150	29	Vertical
3	2591.5916	-16.35	56.72	40.37	74.00	33.63	150	124	Vertical
4	3907.9079	-13.55	56.61	43.06	74.00	30.94	150	33	Vertical
5	5129.1291	-10.52	56.60	46.08	74.00	27.92	150	314	Vertical
6	5819.8198	-9.29	95.86	86.57	74.00	-12.57	150	29	Vertical

Remark: Factor = Cable loss + Antenna factor − Preamplifier; Level = Reading + Factor; Margin = Limit − Level

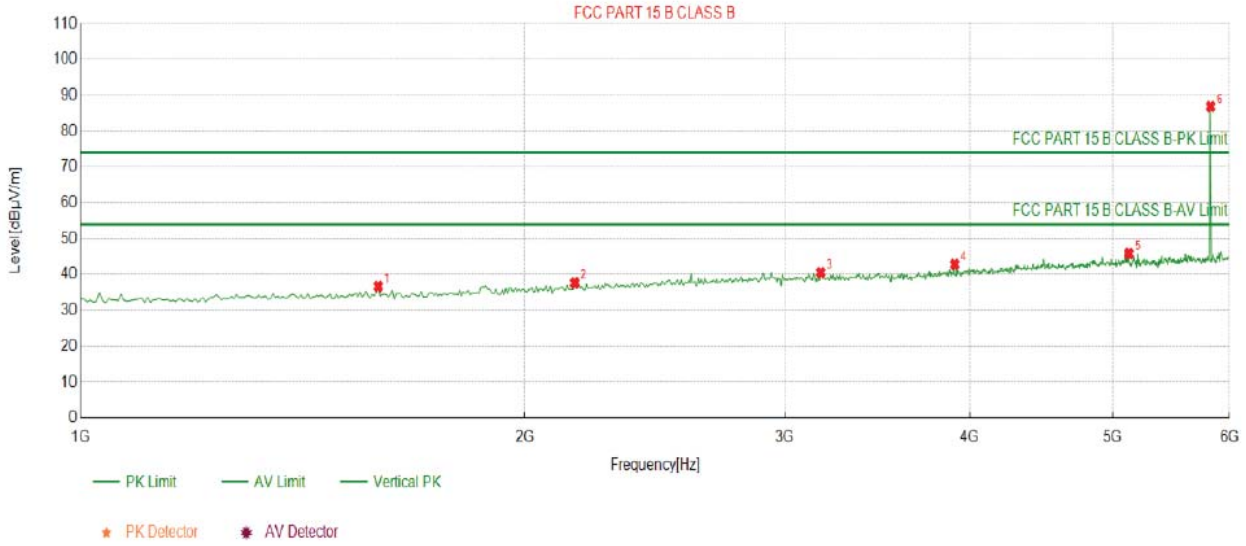
Adapter 2:

All the test modes completed for test. Only the worst result of was reported as below:



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1275.2753	-21.11	55.82	34.71	74.00	39.29	150	328	Horizontal
2	1715.7157	-20.08	55.15	35.07	74.00	38.93	150	126	Horizontal
3	2251.2513	-17.58	55.44	37.86	74.00	36.14	150	185	Horizontal
4	3422.4224	-14.54	54.83	40.29	74.00	33.71	150	1	Horizontal
5	5154.1542	-10.47	56.71	46.24	74.00	27.76	150	150	Horizontal
6	5819.8198	-9.29	94.20	84.91	74.00	-10.91	150	308	Horizontal

Remark: Factor = Cable loss + Antenna factor − Preamplifier; Level = Reading + Factor; Margin = Limit − Level



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1590.5906	-20.44	57.13	36.69	74.00	37.31	150	29	Vertical
2	2161.1612	-18.02	55.66	37.64	74.00	36.36	150	266	Vertical
3	3172.1722	-15.09	55.64	40.55	74.00	33.45	150	356	Vertical
4	3907.9079	-13.55	56.41	42.86	74.00	31.14	150	33	Vertical
5	5129.1291	-10.52	56.40	45.88	74.00	28.12	150	314	Vertical
6	5824.8248	-9.29	96.15	86.86	74.00	-12.86	150	88	Vertical

Remark: Factor = Cable loss + Antenna factor − Preamplifier; Level = Reading + Factor; Margin = Limit − Level

LOW CH 149 (802.11 a Mode with 5.8G)/5745
All modes of operation were investigated and the worst-case of Ant 3 are reported.

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3368	54.28	-4.59	49.69	68.2	-18.51	peak
11096	50.37	4.21	54.58	74	-19.42	peak
11096	39.39	4.21	43.6	54	-10.4	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3368	59.37	-4.59	54.78	68.2	-13.42	peak
11096	55.14	4.21	59.35	74	-14.65	peak
11096	37.68	4.21	41.89	54	-12.11	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

MID CH157 (802.11 a Mode with 5.8G)/5785

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3172	58.97	-4.59	54.38	68.2	-13.82	peak
10523	52.46	4.21	56.67	68.2	-11.53	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3172	57.19	-4.59	52.6	68.2	-15.6	peak
10523	53.62	4.21	57.83	68.2	-10.37	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

HIGH CH 165 (802.11a Mode with 5.8G)/5825

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2705	59.37	-4.59	54.78	74	-19.22	peak
2705	49.28	-4.59	44.69	54	-9.31	AVG
11717	54.16	4.84	59	74	-15	peak
11717	37.28	4.84	42.12	54	-11.88	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2705	59.28	-4.59	54.69	74	-19.31	peak
2705	45.16	-4.59	40.57	54	-13.43	AVG
11717	51.34	4.84	56.18	74	-17.82	peak
11717	39.28	4.84	44.12	54	-9.88	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Remark：
(1) Measuring frequencies from 1 GHz to the 40 GHz。
(2) “F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency.
(3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
(4) The emissions are attenuated more than 20dB below the permissible limits are not record in the report.
(5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
(6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

5.8G 802.11n20 Mode
All modes of operation were investigated and the worst-case of MIMO are reported.
LOW CH 149

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3368	62.38	-4.59	57.79	68.2	-10.41	peak
11096	57.17	4.21	61.38	74	-12.62	peak
11096	40.28	4.21	44.49	54	-9.51	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3368	63.28	-4.59	58.69	68.2	-9.51	peak
11096	56.19	4.21	60.4	74	-13.6	peak
11096	37.14	4.21	41.35	54	-12.65	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

MID CH157

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3172	64.19	-4.59	59.6	68.2	-8.6	peak
10523	54.28	4.21	58.49	68.2	-9.71	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3172	58.17	-4.59	53.58	68.2	-14.62	peak
10523	55.24	4.21	59.45	68.2	-8.75	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

HIGH CH165

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2705	60.37	-4.59	55.78	74	-18.22	peak
2705	49.21	-4.59	44.62	54	-9.38	AVG
11717	56.27	4.84	61.11	74	-12.89	peak
11717	39.96	4.84	44.8	54	-9.2	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2705	60.28	-4.59	55.69	74	-18.31	peak
2705	49.3	-4.59	44.71	54	-9.29	AVG
11717	53.27	4.84	58.11	74	-15.89	peak
11717	38.97	4.84	43.81	54	-10.19	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Remark：
(1) Measuring frequencies from 1 GHz to the 40 GHz。
(2) “F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency.
(3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
(4) The emissions are attenuated more than 20dB below the permissible limits are not record in the report.
(5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
(6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

5.8G 802.11n40 Mode
All modes of operation were investigated and the worst-case of MIMO are reported.
LOW CH 151

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3368	62.24	-4.59	57.65	68.2	-10.55	peak
11096	61.28	4.21	65.49	74	-8.51	peak
11096	39.47	4.21	43.68	54	-10.32	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3368	64.03	-4.59	59.44	68.2	-8.76	peak
11096	57.19	4.21	61.4	74	-12.6	peak
11096	38.11	4.21	42.32	54	-11.68	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

MID CH159

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3172	60.27	-4.59	55.68	68.2	-12.52	peak
10523	52.39	4.21	56.6	68.2	-11.6	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3172	58.34	-4.59	53.75	68.2	-14.45	peak
10523	52.39	4.21	56.6	68.2	-11.6	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Remark：
(1) Measuring frequencies from 1 GHz to the 40 GHz。
(2) “F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency.
(3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
(4) The emissions are attenuated more than 20dB below the permissible limits are not record in the report.
(5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
(6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

5.8G 802.11ac20 Mode
All modes of operation were investigated and the worst-case of MIMO are reported.
LOW CH 149

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3368	61.38	-4.59	56.79	68.2	-11.41	peak
11096	52.49	4.21	56.7	74	-17.3	peak
11096	34.16	4.21	38.37	54	-15.63	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3368	62.28	-4.59	57.69	68.2	-10.51	peak
11096	57.19	4.21	61.4	74	-12.6	peak
11096	38.22	4.21	42.43	54	-11.57	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

MID CH157

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3172	63.28	-4.59	58.69	68.2	-9.51	peak
10523	54.19	4.21	58.4	68.2	-9.8	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3172	59.17	-4.59	54.58	68.2	-13.62	peak
10523	54.26	4.21	58.47	68.2	-9.73	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

HIGH CH165

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2705	61.38	-4.59	56.79	74	-17.21	peak
2705	50.28	-4.59	45.69	54	-8.31	AVG
11717	56.23	4.84	61.07	74	-12.93	peak
11717	39.47	4.84	44.31	54	-9.69	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2705	59.32	-4.59	54.73	74	-19.27	peak
2705	47.25	-4.59	42.66	54	-11.34	AVG
11717	53.35	4.84	58.19	74	-15.81	peak
11717	37.98	4.84	42.82	54	-11.18	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Remark：
(1) Measuring frequencies from 1 GHz to the 40 GHz。
(2) “F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency.
(3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
(4) The emissions are attenuated more than 20dB below the permissible limits are not record in the report.
(5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
(6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

5.8G 802.11ac40 Mode
All modes of operation were investigated and the worst-case of MIMO are reported.
LOW CH 151

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3368	62.32	-4.59	57.73	68.2	-10.47	peak
11096	59.71	4.21	63.92	74	-10.08	peak
11096	38.19	4.21	42.4	54	-11.6	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3368	63.28	-4.59	58.69	68.2	-9.51	peak
11096	57.57	4.21	61.78	74	-12.22	peak
11096	39.16	4.21	43.37	54	-10.63	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

5.8G 802.11ac80 Mode
All modes of operation were investigated and the worst-case of MIMO are reported.
CH 155

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3368	60.28	-4.59	55.69	68.2	-12.51	peak
11096	56.89	4.21	61.1	74	-12.9	peak
11096	38.17	4.21	42.38	54	-11.62	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3368	62.28	-4.59	57.69	68.2	-10.51	peak
11096	56.19	4.21	60.4	74	-13.6	peak
11096	39.27	4.21	43.48	54	-10.52	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Remark：
(1) Measuring frequencies from 1 GHz to the 40 GHz。
(2) “F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency.
(3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
(4) The emissions are attenuated more than 20dB below the permissible limits are not record in the report.
(5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
(6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

5.8G 802.11ax20 Mode
All modes of operation were investigated and the worst-case of MIMO are reported.
LOW CH 149

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3368	62.38	-4.59	57.79	68.2	-10.41	peak
11096	52.14	4.21	56.35	74	-17.65	peak
11096	38.97	4.21	43.18	54	-10.82	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3368	62.13	-4.59	57.54	68.2	-10.66	peak
11096	57.89	4.21	62.1	74	-11.9	peak
11096	38.49	4.21	42.7	54	-11.3	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

MID CH157

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3172	63.52	-4.59	58.93	68.2	-9.27	peak
10523	54.19	4.21	58.4	68.2	-9.8	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3172	59.32	-4.59	54.73	68.2	-13.47	peak
10523	55.07	4.21	59.28	68.2	-8.92	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

HIGH CH165

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2705	62.38	-4.59	57.79	74	-16.21	peak
2705	49.31	-4.59	44.72	54	-9.28	AVG
11717	6.32	4.84	11.16	74	-62.84	peak
11717	39.72	4.84	44.56	54	-9.44	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2705	59.32	-4.59	54.73	74	-19.27	peak
2705	46.65	-4.59	42.06	54	-11.94	AVG
11717	53.29	4.84	58.13	74	-15.87	peak
11717	37.92	4.84	42.76	54	-11.24	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Remark：
(1) Measuring frequencies from 1 GHz to the 40 GHz。
(2) “F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency.
(3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
(4) The emissions are attenuated more than 20dB below the permissible limits are not record in the report.
(5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
(6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

5.8G 802.11ax40 Mode
All modes of operation were investigated and the worst-case of MIMO are reported.
LOW CH 151

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3368	60.27	-4.59	55.68	68.2	-12.52	peak
11096	59.17	4.21	63.38	74	-10.62	peak
11096	38.35	4.21	42.56	54	-11.44	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3368	63.27	-4.59	58.68	68.2	-9.52	peak
11096	57.19	4.21	61.4	74	-12.6	peak
11096	39.16	4.21	43.37	54	-10.63	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

MID CH159

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3172	60.24	-4.59	55.65	68.2	-12.55	peak
10523	52.17	4.21	56.38	68.2	-11.82	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3172	60.38	-4.59	55.79	68.2	-12.41	peak
10523	52.01	4.21	56.22	68.2	-11.98	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Remark：
(1) Measuring frequencies from 1 GHz to the 40 GHz。
(2) “F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency.
(3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
(4) The emissions are attenuated more than 20dB below the permissible limits are not record in the report.
(5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
(6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

MID CH159

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3172	63.16	-4.59	58.57	68.2	-9.63	peak
10523	54.15	4.21	58.36	68.2	-9.84	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3172	59.98	-4.59	55.39	68.2	-12.81	peak
10523	52.14	4.21	56.35	68.2	-11.85	peak
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Remark:
(1) Measuring frequencies from 1 GHz to the 40 GHz。
(2) “F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency.
(3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
(4) The emissions are attenuated more than 20dB below the permissible limits are not record in the report.
(5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
(6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

5.8G 802.11ax80 Mode
All modes of operation were investigated and the worst-case of MIMO are reported.
CH 155

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3368	60.37	-4.59	55.78	68.2	-12.42	peak
11096	56.87	4.21	61.08	74	-12.92	peak
11096	38.19	4.21	42.4	54	-11.6	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

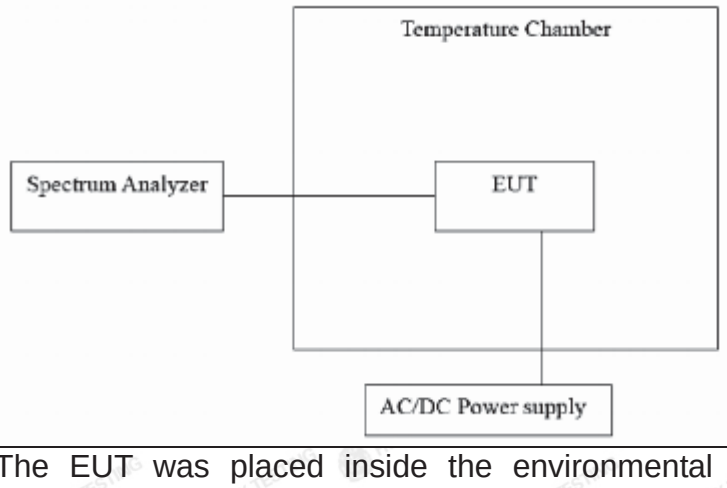
Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3368	62.28	-4.59	57.69	68.2	-10.51	peak
11096	56.18	4.21	60.39	74	-13.61	peak
11096	39.58	4.21	43.79	54	-10.21	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Remark：
(1) Measuring frequencies from 1 GHz to the 40 GHz。
(2) “F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency.
(3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
(4) The emissions are attenuated more than 20dB below the permissible limits are not record in the report.
(5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
(6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

4.8. Frequency Stability Measurement

4.8.1. Test Specification

Test Requirement:	FCC Part15 Section 15.407(g)
Test Method:	ANSI C63.10: 2013
Limit:	The frequency tolerance shall be maintained within the band of operation frequency over a temperature variation of 0 degrees to 35 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.
Test Setup:	
Test Procedure:	The EUT was placed inside the environmental test chamber and powered by nominal AC/DC voltage. b. Turn the EUT on and couple its output to a spectrum analyzer. c. Turn the EUT off and set the chamber to the highest temperature specified. d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature. f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.
Test Result:	PASS
Remark:	N/A

Test Result as follows:

Mode	Voltage (V)	FHL (5745MHz)	Deviation (KHz)	FHH (5825MHz)	Deviation (KHz)
5.8G Band	10.2V	5744.998	-2	5824.994	-6
	12.0V	5744.975	-25	5825.046	46
	13.8V	5744.998	-2	5824.988	-12

Mode	Temperature (℃)	FHL (5745MHz)	Deviation (KHz)	FHH (5825MHz)	Deviation (KHz)
5.8G Band	-30	5745.023	23	5825.003	3
	-20	5745.009	9	5824.966	-34
	-10	5745.016	16	5824.972	-28
	0	5744.967	-33	5824.954	-46
	10	5744.992	-8	5824.990	-10
	20	5744.983	-17	5824.982	-18
	30	5744.966	-34	5825.047	47
	40	5745.006	6	5825.037	37
	50	5744.991	-9	5824.978	-22

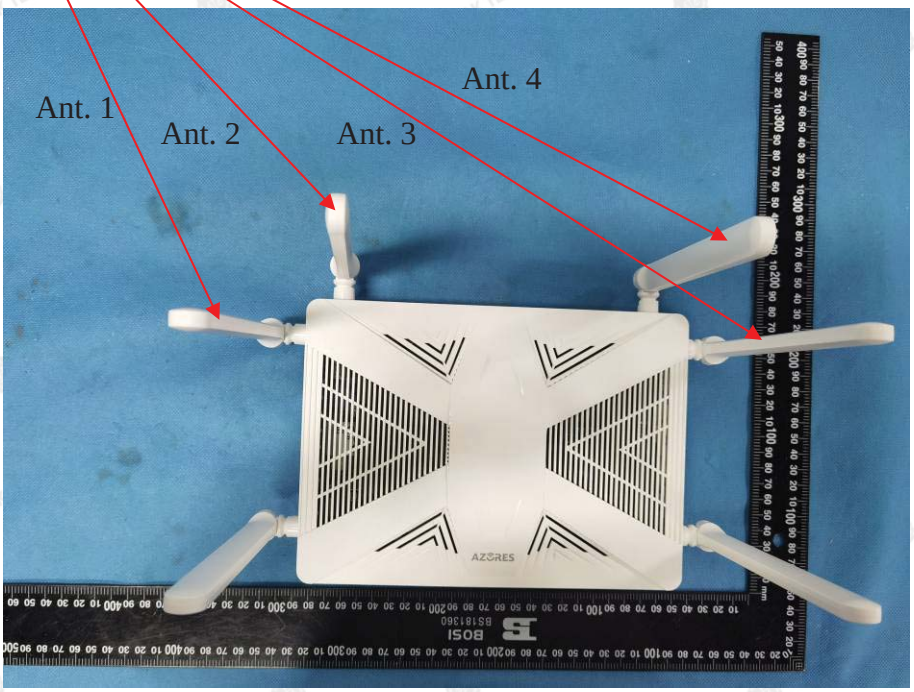
4.9. ANTENNA REQUIREMENT

Standard Applicable
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.249, if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

Refer to statement below for compliance.
The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

Antenna Connected Construction
The antenna used in this product is External Antenna which professional installation is required and cannot be dismantled easily, and the best case gain of the antenna is Antenna port 1:5dBi and Antenna port 2:5dBi, Antenna port 3:5dBi and Antenna port 4:5dBi.

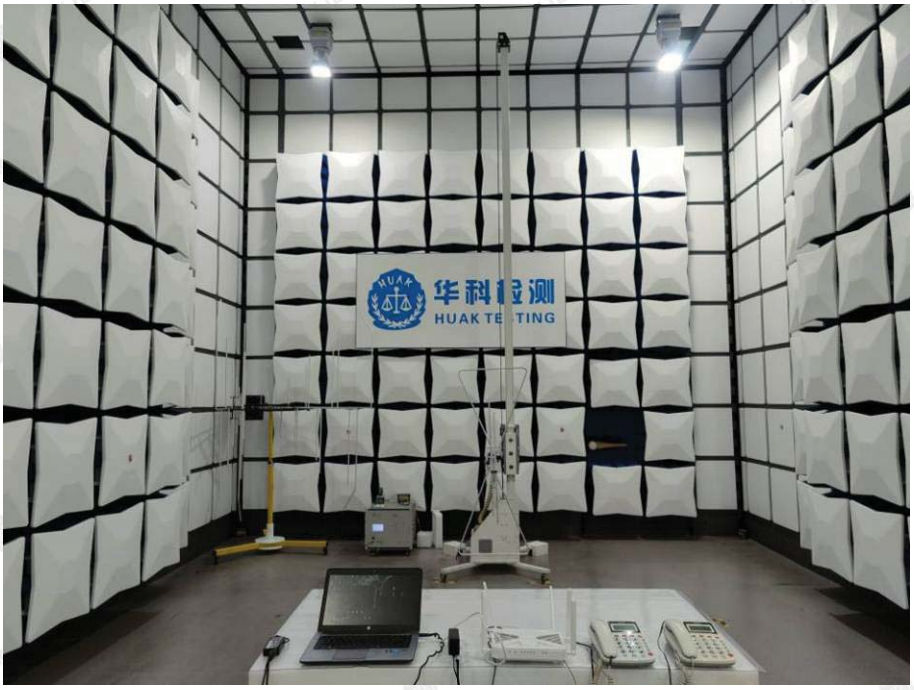
ANTENNA

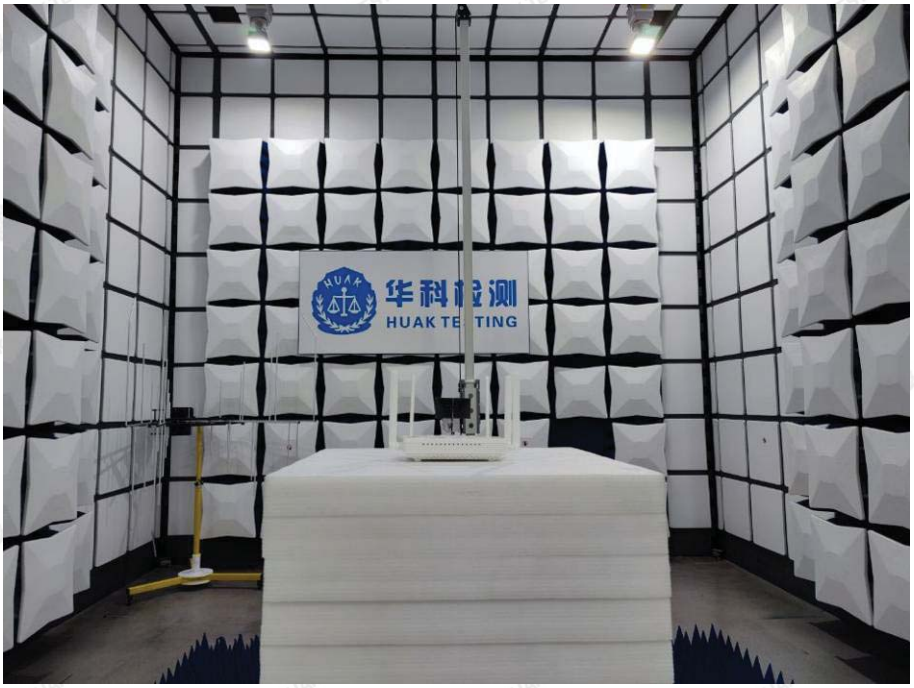


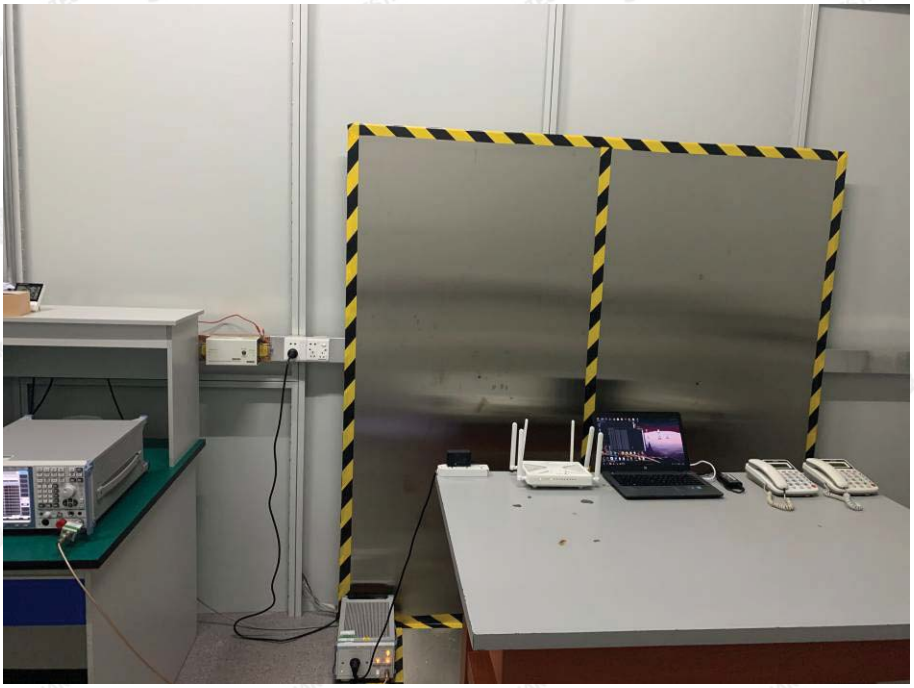
4.10. Photographs of Test Setup

Adapter 1

Radiated Emission

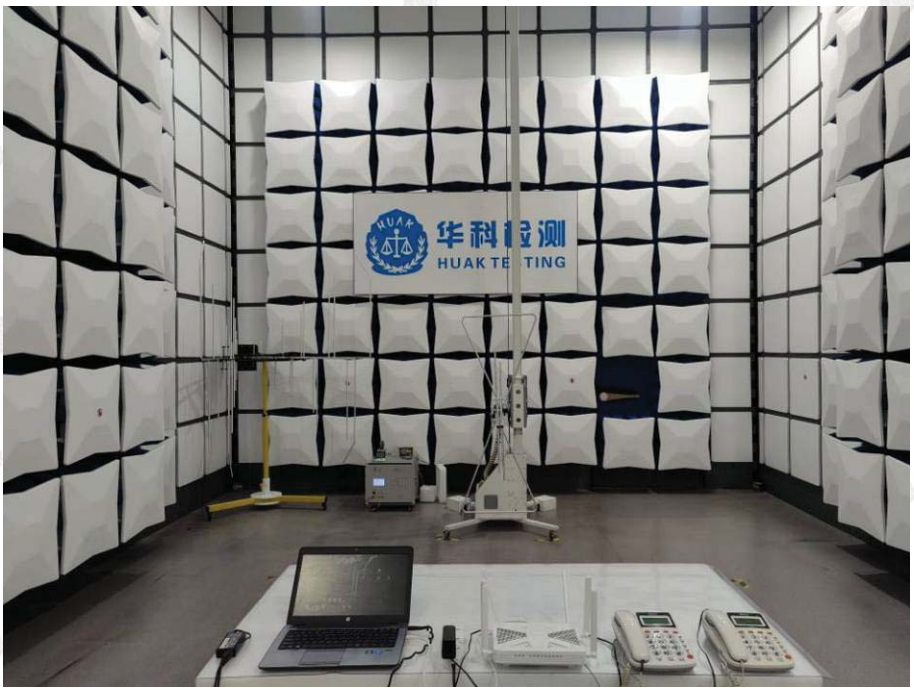


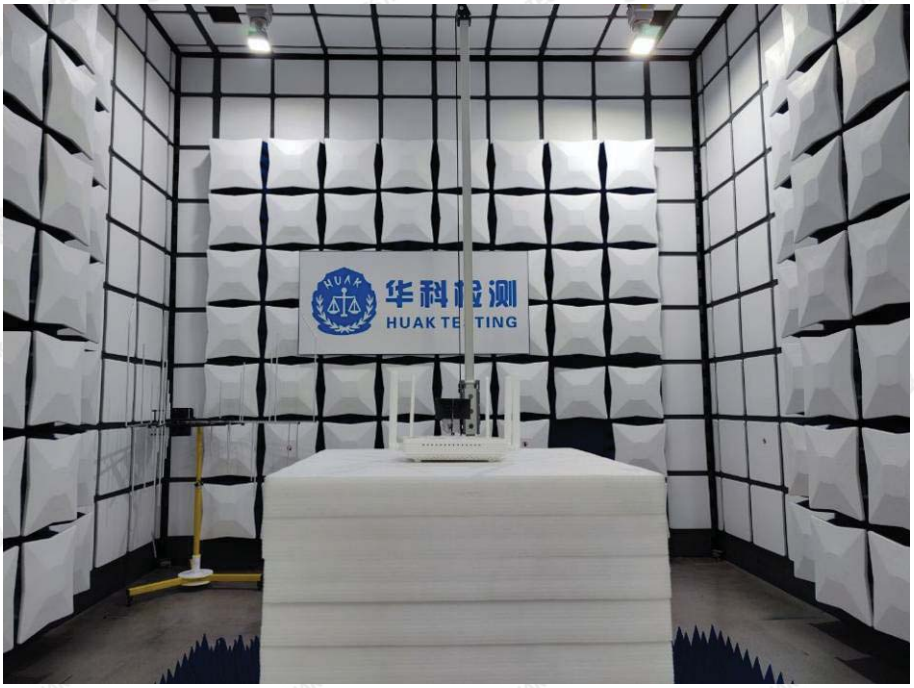


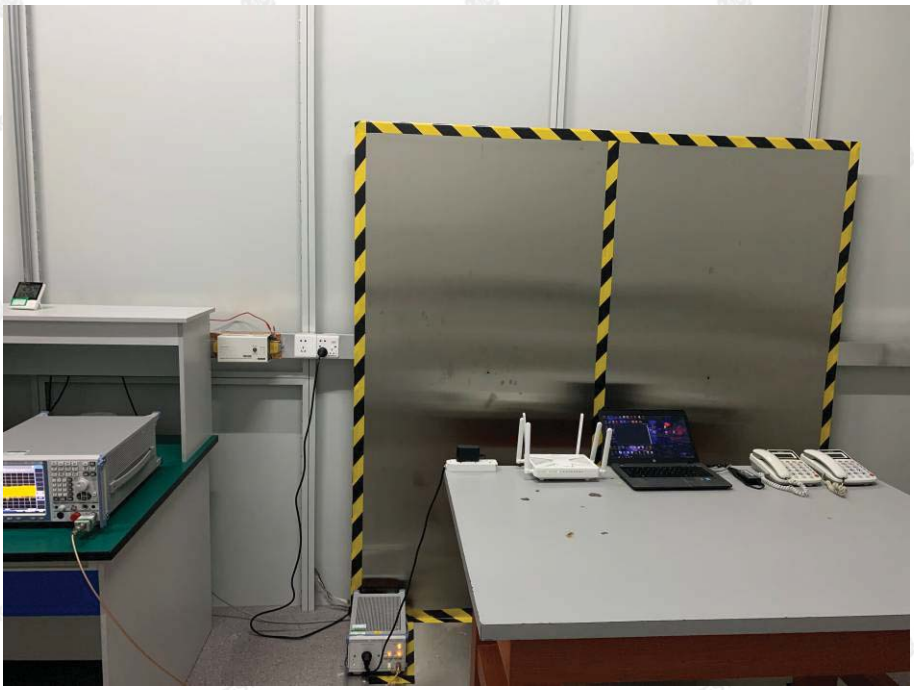


Adapter 2

Radiated Emission







4.11. PHOTOS OF THE EUT

Reference to the report: ANNEX A of external photos and ANNEX B of internal photos