

☒ For Undesirable radiated Spurious Emission in U-NII – 1

☒ Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)

All of the configurations or modes are tested, the data of the worst case is recorded in the report.

Highest gain of each antenna and highest output power is ANT3 and MIMO as below:

Test mode: 802.11a(20) Frequency(MHz): 5180

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
8687.84	V	64.79	-30.44	-27	3.44
11783.3	V	66.74	-28.49	-27	1.49
17897.9	V	67.79	-27.44	-27	0.44
7335.66	H	60.83	-34.4	-27	7.4
9801.90	H	66.40	-28.83	-27	1.83
17685.3	H	67.87	-27.36	-27	0.36

Test mode: 802.11a(20) Frequency(MHz): 5200

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
7990.49	V	63.49	-31.74	-27	4.74
9708.35	V	66.12	-29.11	-27	2.11
17727.8	V	67.60	-27.63	-27	0.63
8407.20	H	63.81	-31.42	-27	4.42
9657.32	H	65.42	-29.81	-27	2.81
15159.5	H	67.63	-27.6	-27	0.6

Test mode: 802.11a(20) Frequency(MHz): 5240

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
9002.50	V	65.00	-30.23	-27	3.23
11953.47	V	66.27	-28.96	-27	1.96
17838.4	V	67.00	-28.23	-27	1.23
9002.50	H	65.40	-29.83	-27	2.83
12659.3	H	66.79	-28.44	-27	1.44
17778.8	H	67.38	-27.85	-27	0.85

Test mode: 802.11a(20)		Frequency(MHz): 5180			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
8687.84	V	64.79	74.00	9.21	peak
11783.3	V	66.74	74.00	7.26	peak
17897.9	V	67.79	74.00	6.21	peak
8687.843	V	46.57	54.00	7.43	AVG
11783.39	V	45.83	54.00	8.17	AVG
17897.94	V	46.96	54.00	7.04	AVG
7335.66	H	60.83	74.00	13.17	peak
9801.90	H	66.40	74.00	7.60	peak
17685.3	H	67.87	74.00	6.13	peak
7335.667	H	41.68	54.00	12.32	AVG
9801.901	H	43.03	54.00	10.97	AVG
17685.34	H	47.37	54.00	6.63	AVG

Test mode: 802.11a(20)		Frequency(MHz): 5200			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
7990.49	V	63.49	74.00	10.51	peak
9708.35	V	66.12	74.00	7.88	peak
17727.8	V	67.60	74.00	6.40	peak
7990.495	V	43.45	54.00	10.55	AVG
9708.354	V	43.26	54.00	10.74	AVG
17727.86	V	47.32	54.00	6.68	AVG
8407.20	H	63.81	74.00	10.19	peak
9657.32	H	65.42	74.00	8.58	peak
15159.5	H	67.63	74.00	6.37	peak
8407.203	H	44.53	54.00	9.47	AVG
9657.328	H	42.90	54.00	11.10	AVG
15159.57	H	44.12	54.00	9.88	AVG

Test mode: 802.11a(20)		Frequency(MHz): 5240			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
9002.50	V	65.00	74.00	9.00	peak
11953.4	V	66.27	74.00	7.73	peak
17838.4	V	67.00	74.00	7.00	peak
9002.501	V	47.45	54.00	6.55	AVG
11953.47	V	45.77	54.00	8.23	AVG
17838.41	V	47.43	54.00	6.57	AVG
9002.50	H	65.40	74.00	8.60	peak
12659.3	H	66.79	74.00	7.21	peak
17778.8	H	67.38	74.00	6.62	peak
9002.501	H	47.44	54.00	6.56	AVG
12659.32	H	47.71	54.00	6.29	AVG
17778.88	H	47.37	54.00	6.63	AVG

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor +Cable Loss.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4) The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

☒ Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Test mode: 802.11ac(20) Frequency(MHz): 5180

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5146.58	H	62.71	-32.52	-27	Pass
5149.75	V	56.57	-38.66	-27	Pass

Test mode: 802.11ac(20) Frequency(MHz): 5240

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5359.13	H	57.34	-37.89	-27	Pass
5357.08	V	57.19	-38.04	-27	Pass

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor +Cable Loss.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4) EIRP[dBm] = E[dBuV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

Test mode: 802.11ac(20) Frequency(MHz): 5180

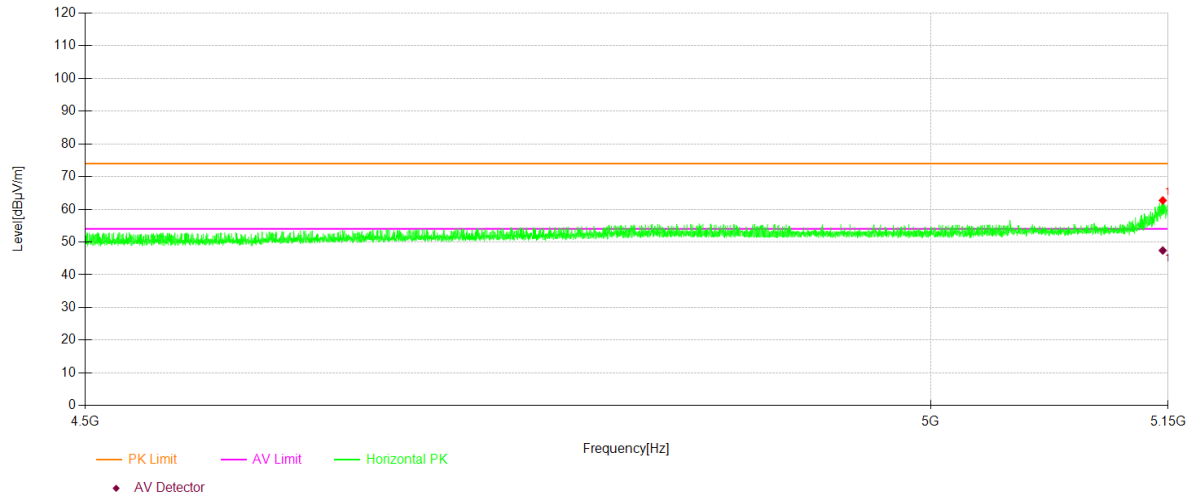
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
5149.75	V	56.57	74.00	17.43	peak
5149.75	V	47.49	54.00	6.51	AVG
5146.58	H	62.71	74.00	11.29	peak
5146.58	H	47.42	54.00	6.58	AVG

Test mode: 802.11ac(20) Frequency(MHz): 5240

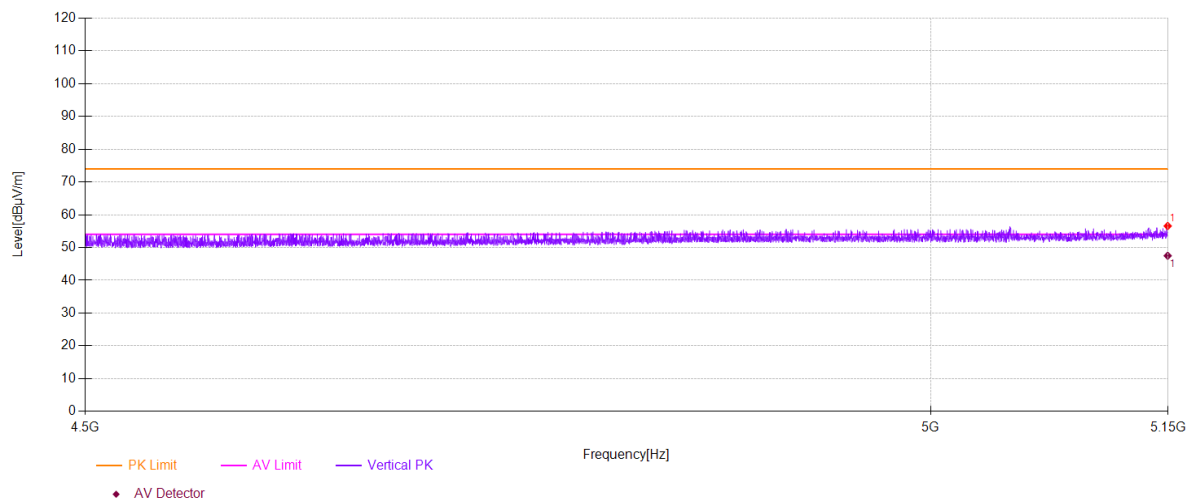
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
5357.08	V	57.19	74.00	16.81	peak
5357.08	V	47.71	54.00	6.29	AVG
5359.13	H	57.34	74.00	16.66	peak
5359.13	H	47.34	54.00	6.66	AVG

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor +Cable Loss.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4) The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

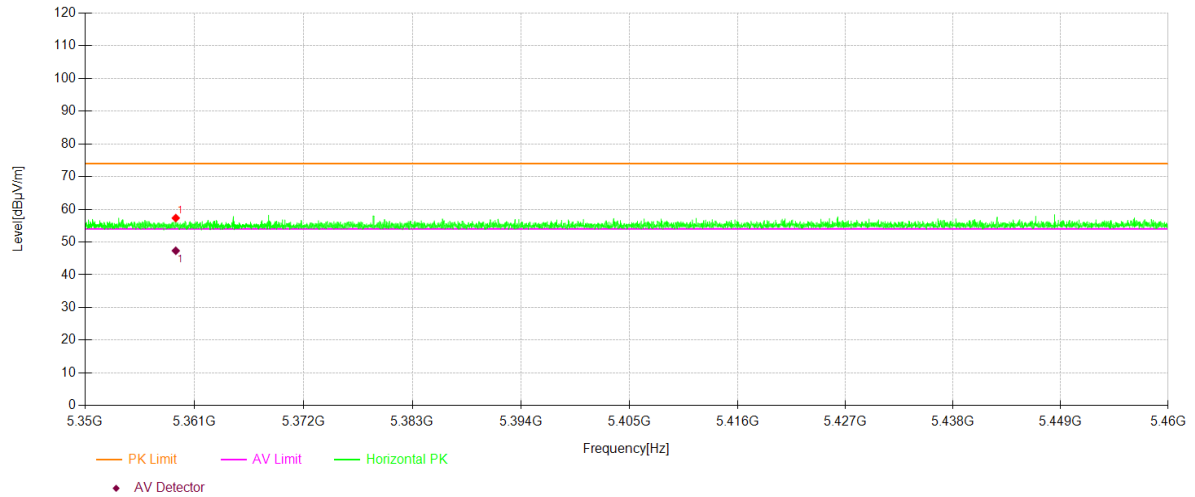
U-NII - 1				
Test Model	Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)			
	☐ 802.11a	☒ 802.11ac(HT20)	☐ 802.11n(HT40)	
	☒ 5180	☐ 5200	☐ 5240	Ant.Pol H



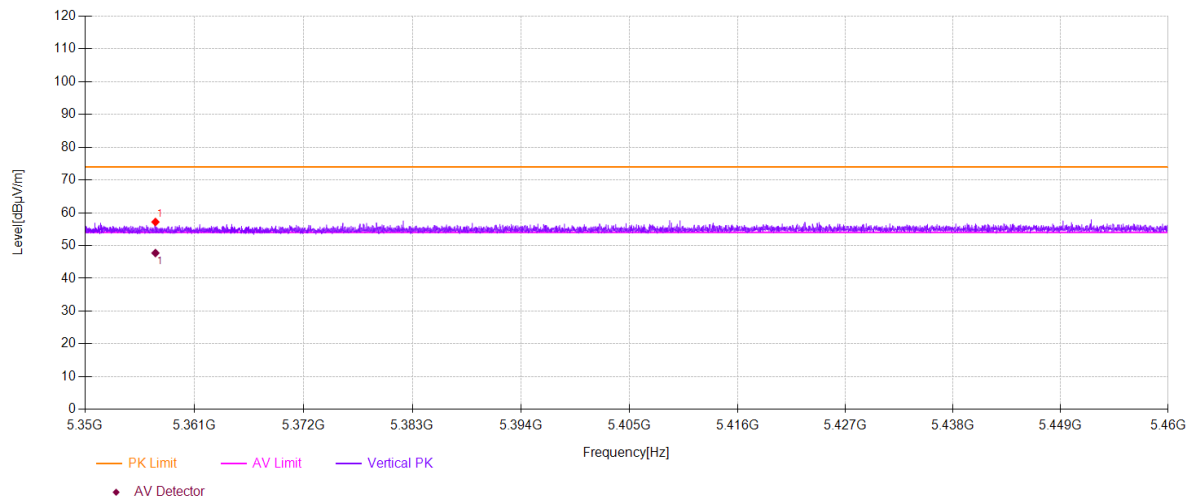
U-NII - 1				
Test Model	Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)			
	☐ 802.11a	☒ 802.11ac(HT20)	☐ 802.11n(HT40)	
	☒ 5180	☐ 5200	☐ 5240	Ant.Pol V



U-NII - 1				
Test Model	Undesirable radiated Spurious Emission in Restricted Band (5350-5400MHz)			
	☐ 802.11a	☒ 802.11 ac(HT20)	☐ 802.11n(HT40)	
	☐ 5180	☐ 5200	☒ 5240	Ant.Pol H



U-NII - 1				
Test Model	Undesirable radiated Spurious Emission in Restricted Band (5350-5400MHz)			
	☐ 802.11a	☒ 802.11 ac(HT20)	☐ 802.11n(HT40)	
	☐ 5180	☐ 5200	☒ 5240	Ant.Pol V



☒ For Undesirable radiated Spurious Emission in U-NII -3

☒ Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)

All of the configurations or modes are tested, the data of the worst case is recorded in the report.
Highest gain of each antenna and highest output power is ANT3 and MIMO as below:

Test mode:		802.11a(20)		Frequency(MHz):		5745	
Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)		
9011.00	V	65.37	-29.86	-27	2.86		
11825.9	V	66.58	-28.65	-27	1.65		
16928.4	V	66.91	-28.32	-27	1.32		
8696.34	H	65.51	-29.72	-27	2.72		
9980.49	H	66.50	-28.73	-27	1.73		
16911.4	H	67.47	-27.76	-27	0.76		

Test mode:		802.11a(20)		Frequency(MHz):		5785	
Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)		
8670.83	V	65.01	-30.22	-27	3.22		
11256.1	V	65.85	-29.38	-27	2.38		
17931.9	V	67.23	-28	-27	1		
8679.33	H	64.93	-30.3	-27	3.3		
11375.1	H	65.85	-29.38	-27	2.38		
17362.1	H	67.06	-28.17	-27	1.17		

Test mode:		802.11a(20)		Frequency(MHz):		5825	
Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)		
8934.46	V	65.21	-30.02	-27	3.02		
11392.1	V	66.83	-28.4	-27	1.4		
17727.8	V	68.00	-27.23	-27	0.23		
8662.33	H	65.20	-30.03	-27	3.03		
12293.6	H	67.00	-28.23	-27	1.23		
17498.2	H	67.76	-27.47	-27	0.47		

Note: (1) All Readings are Peak Value (VBW=3MHz) and AV Value (VBW=10Hz).
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3) $EIRP[dBm] = E[dB\mu V/m] + 20 \log(d[meters]) - 104.77$
d is the measurement distance in 3 meters

Test mode: 802.11a(20)		Frequency(MHz): 5745			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
9011.00	V	65.37	74.00	8.63	peak
11825.9	V	66.58	74.00	7.42	peak
16928.4	V	66.91	74.00	7.09	peak
9011.005	V	47.04	54.00	6.96	AVG
11825.91	V	45.55	54.00	8.45	AVG
16928.46	V	45.20	54.00	8.80	AVG
8696.34	H	65.51	74.00	8.49	peak
9980.49	H	66.50	74.00	7.50	peak
16911.4	H	67.47	74.00	6.53	peak
8696.348	H	47.41	54.00	6.59	AVG
9980.490	H	45.26	54.00	8.74	AVG
16911.45	H	47.29	54.00	6.71	AVG

Test mode: 802.11a(20)		Frequency(MHz): 5785			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
8670.83	V	65.01	74.00	8.99	peak
11256.1	V	65.85	74.00	8.15	peak
17931.9	V	67.23	74.00	6.77	peak
8670.835	V	46.64	54.00	7.36	AVG
11256.128	V	46.76	54.00	7.24	AVG
17931.96	V	46.32	54.00	7.68	AVG
8679.33	H	64.93	74.00	9.07	peak
11375.1	H	65.85	74.00	8.15	peak
17362.1	H	67.06	74.00	6.94	peak
8679.339	H	46.89	54.00	7.11	AVG
11375.18	H	46.35	54.00	7.65	AVG
17362.18	H	45.55	54.00	8.45	AVG

Test mode: 802.11a(20)		Frequency(MHz): 5825			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
8934.46	V	65.21	74.00	8.79	peak
11392.1	V	66.83	74.00	7.17	peak
17727.8	V	68.00	74.00	6.00	peak
8934.467	V	46.62	54.00	7.38	AVG
11392.19	V	45.73	54.00	8.27	AVG
17727.86	V	47.41	54.00	6.59	AVG
8662.33	H	65.20	74.00	8.80	peak
12293.6	H	67.00	74.00	7.00	peak
17498.2	H	67.76	74.00	6.24	peak
8662.331	H	46.10	54.00	7.90	AVG
12293.64	H	46.69	54.00	7.31	AVG
17498.24	H	45.89	54.00	8.11	AVG

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor +Cable Loss.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4) The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

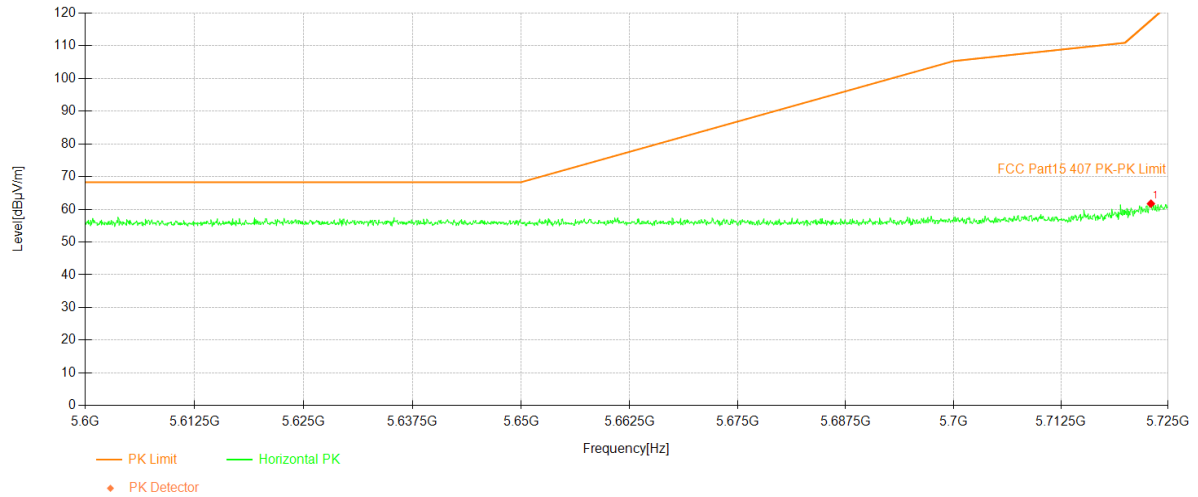
☒ Undesirable radiated Spurious Emission in band edge

Test mode:		802.11ac(20)	Frequency:		5745
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5722.99	H	61.73	-33.5	-27	PASS
5724.31	V	59.51	-35.72	-27	PASS

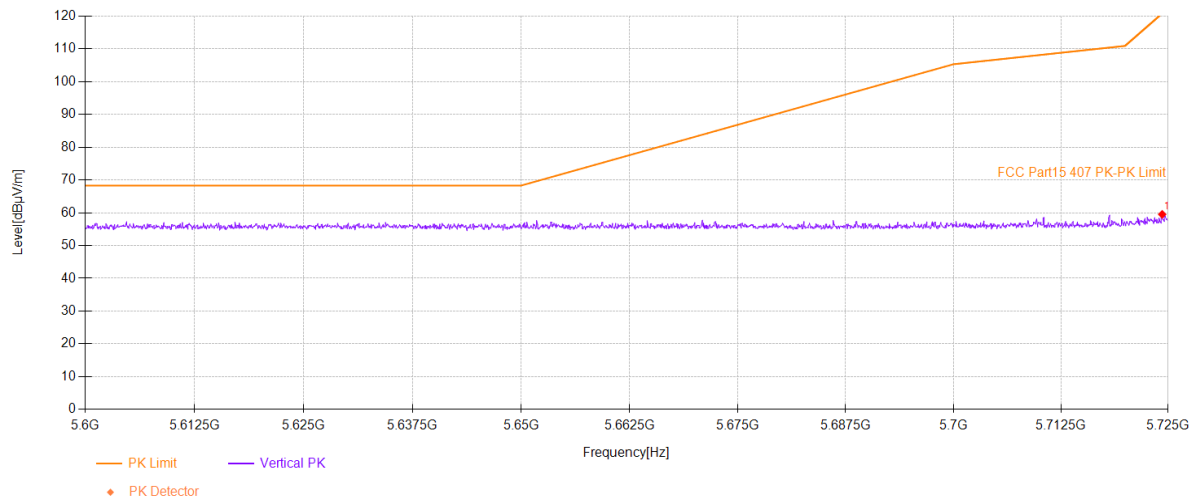
Test mode:		802.11ac(20)	Frequency:		5825
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5852.50	H	62.97	-32.26	-27	PASS
5852.37	V	61.22	-34.01	-27	PASS

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor +Cable Loss.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4) EIRP[dBm] = E[dBuV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

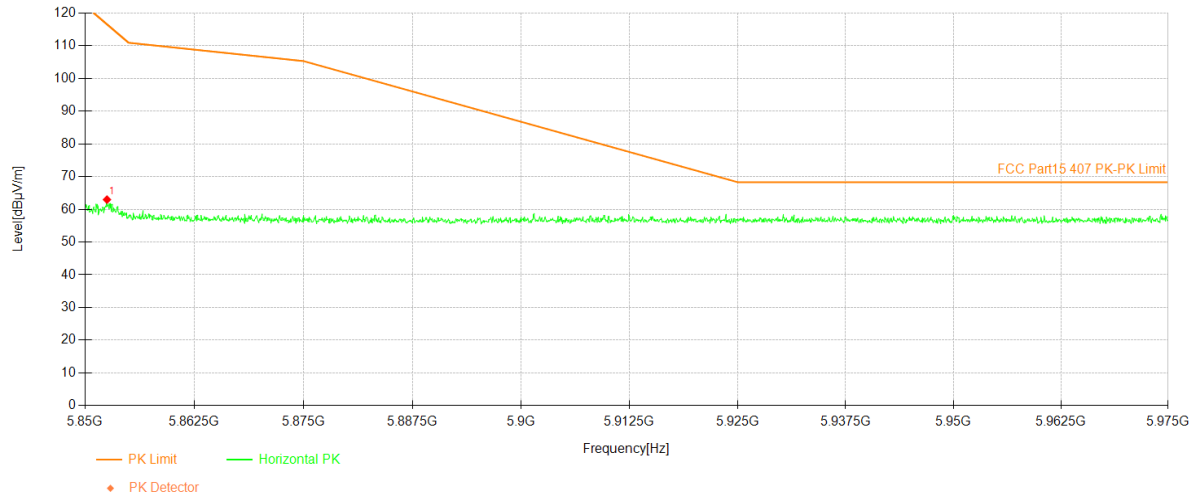
Test Model U-NII -3
Undesirable radiated ☐802.11a Undesirable radiated ☐802.11n(HT20) Spurious Emission in Band Edge
☒5745 ☒802.11 ac (VHT20)
Ant.Pol H



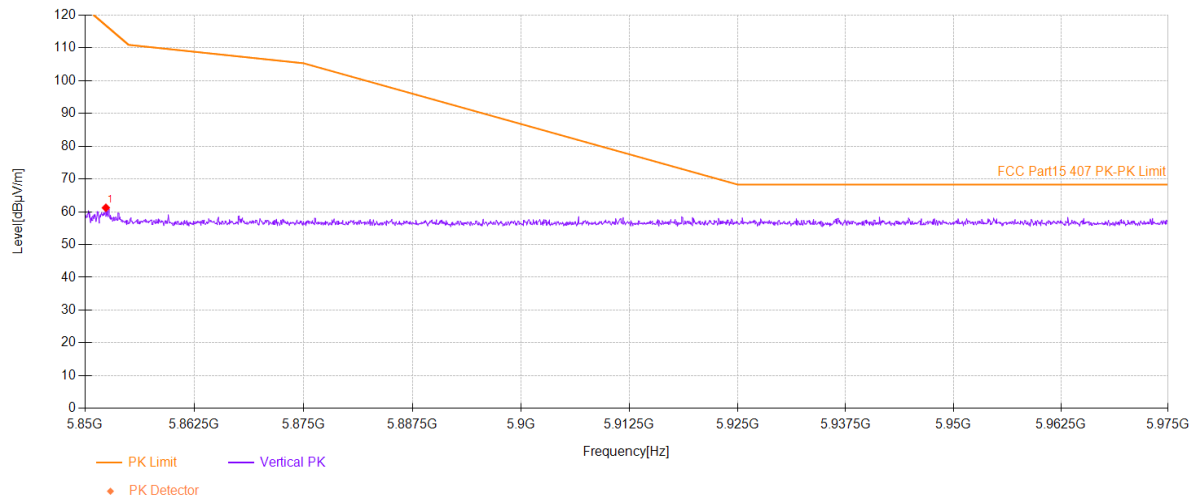
Test Model U-NII -3
Undesirable radiated ☐802.11a Undesirable radiated ☐802.11n(HT20) Spurious Emission in Band Edge
☒5745 ☒802.11 ac (VHT20)
Ant.Pol V



U-NII -3				
Test Model	Undesirable radiated	Undesirable radiated	Spurious Emission in Band Edge	
	☐ 802.11a	☐ 802.11n(HT20)	☒ 802.11 ac (VHT20)	
		☒ 5825	Ant.Pol	H



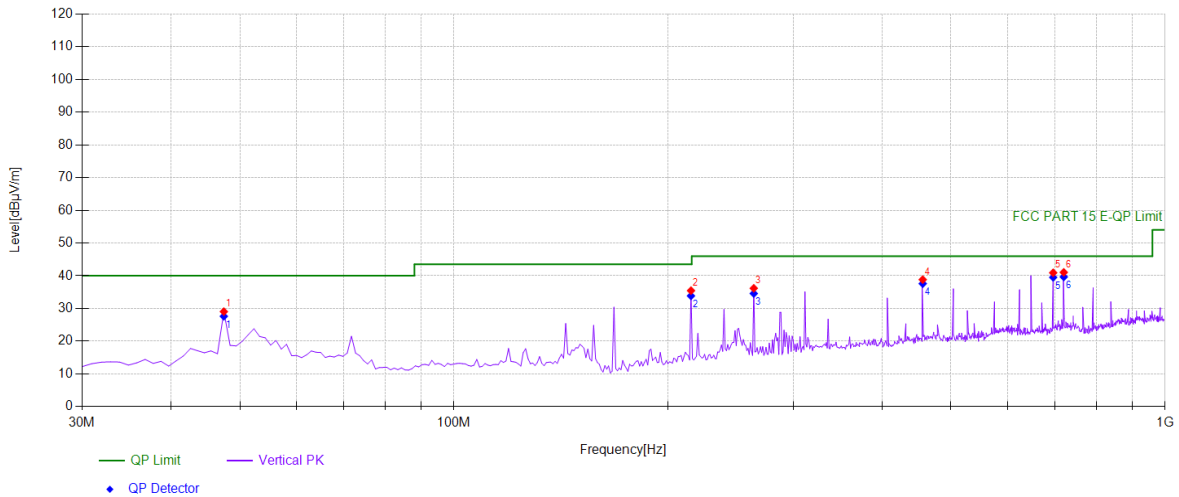
U-NII -3				
Test Model	Undesirable radiated	Undesirable radiated	Spurious Emission in Band Edge	
	☐ 802.11a	☐ 802.11n(HT20)	☒ 802.11 ac (VHT20)	
		☒ 5825	Ant.Pol	V



Undesirable radiated Spurious Emission below 1GHz (30MHz to 1GHz)

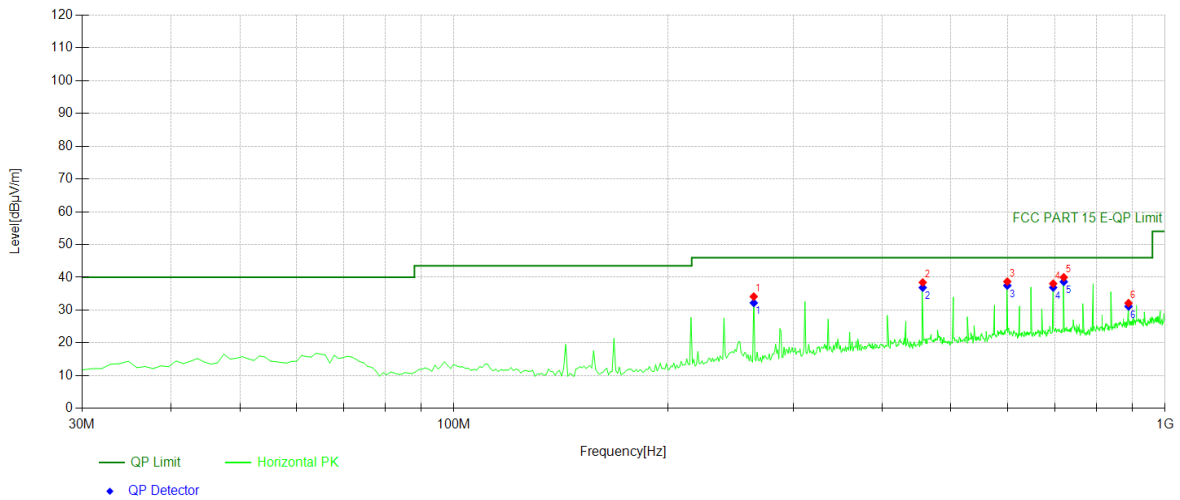
All of the configurations or modes are tested, the data of the worst case is recorded as below.

Test mode: 802.11a Frequency(MHz): 5180



Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	47.4775	45.42	-16.37	29.05	PK	40.00	10.95	Vertical
2	215.455	52.04	-16.58	35.46	PK	43.50	8.04	Vertical
3	264.004	51.78	-15.60	36.18	PK	46.00	9.82	Vertical
4	456.256	49.32	-10.48	38.84	PK	46.00	7.16	Vertical
5	696.086	47.22	-6.30	40.92	PK	46.00	5.08	Vertical
6	720.360	47.16	-6.11	41.05	PK	46.00	4.95	Vertical

Final Data List					
NO.	Freq. [MHz]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]
1	47.4775	-16.37	27.62	40.00	12.38
2	215.4555	-16.58	33.86	43.50	9.64
3	264.004	-15.60	34.58	46.00	11.42
4	456.2563	-10.48	37.60	46.00	8.40
5	696.0861	-6.30	39.52	46.00	6.48
6	720.3604	-6.11	39.65	46.00	6.35



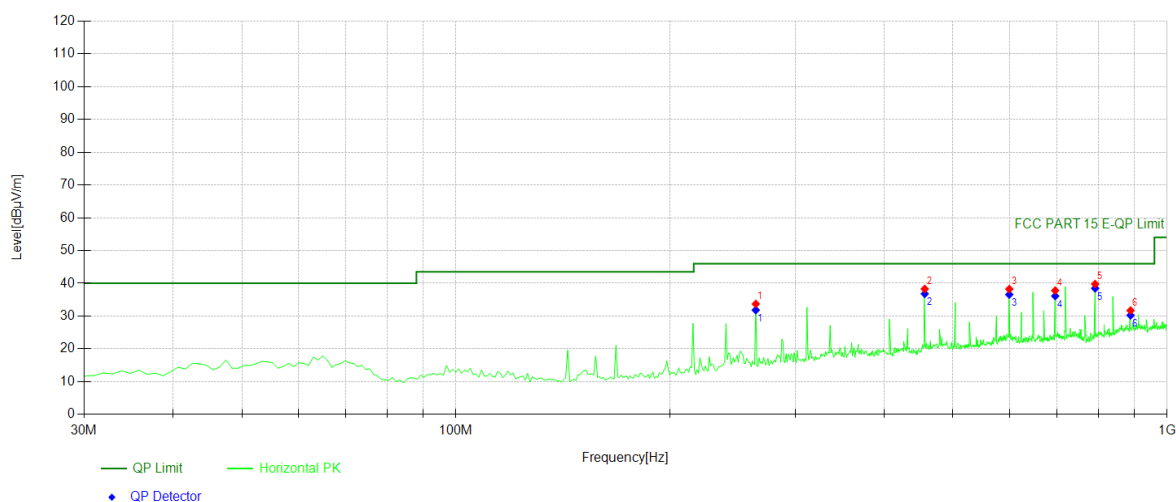
Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	264.004	49.73	-15.60	34.13	PK	46.00	11.87	Horizontal
2	456.256	48.92	-10.48	38.44	PK	46.00	7.56	Horizontal
3	599.96	45.14	-6.44	38.70	PK	46.00	7.30	Horizontal
4	696.086	44.39	-6.30	38.09	PK	46.00	7.91	Horizontal
5	720.360	46.12	-6.11	40.01	PK	46.00	5.99	Horizontal
6	888.338	35.61	-3.47	32.14	PK	46.00	13.86	Horizontal

Final Data List

NO.	Freq. [MHz]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]
1	264.004	-15.60	32.21	46.00	13.79
2	456.2563	-10.48	36.87	46.00	9.13
3	599.96	-6.44	37.49	46.00	8.51
4	696.0861	-6.30	36.88	46.00	9.12
5	720.3604	-6.11	38.64	46.00	7.36
6	888.3383	-3.47	31.13	46.00	14.87

Test mode: 802.11a Frequency(MHz): 5200

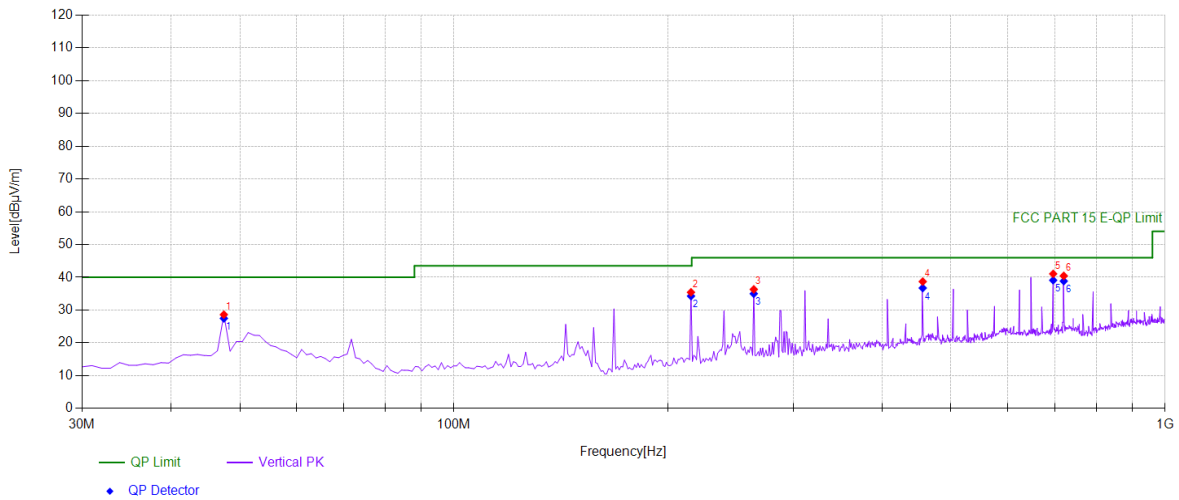


Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	264.004	49.31	-15.60	33.71	PK	46.00	12.29	Horizontal
2	456.256	48.78	-10.48	38.30	PK	46.00	7.70	Horizontal
3	599.96	44.70	-6.44	38.26	PK	46.00	7.74	Horizontal
4	696.086	44.11	-6.30	37.81	PK	46.00	8.19	Horizontal
5	792.212	45.87	-6.08	39.79	PK	46.00	6.21	Horizontal
6	888.338	35.19	-3.47	31.72	PK	46.00	14.28	Horizontal

Final Data List

NO.	Freq. [MHz]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]
1	264.004	-15.60	31.84	46.00	14.16
2	456.2563	-10.48	36.79	46.00	9.21
3	599.96	-6.44	36.58	46.00	9.42
4	696.0861	-6.30	36.13	46.00	9.87
5	792.2122	-6.08	38.47	46.00	7.53
6	888.3383	-3.47	30.24	46.00	15.76



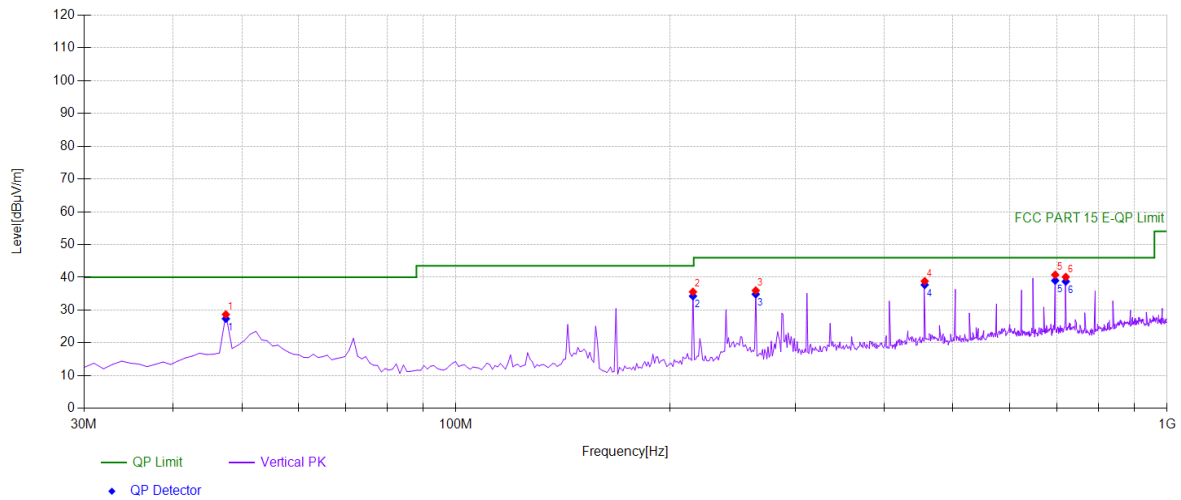
Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	47.4775	45.00	-16.37	28.63	PK	40.00	11.37	Vertical
2	215.455	52.02	-16.58	35.44	PK	43.50	8.06	Vertical
3	264.004	51.93	-15.60	36.33	PK	46.00	9.67	Vertical
4	456.256	49.19	-10.48	38.71	PK	46.00	7.29	Vertical
5	696.086	47.36	-6.30	41.06	PK	46.00	4.94	Vertical
6	720.360	46.56	-6.11	40.45	PK	46.00	5.55	Vertical

Final Data List

NO.	Freq. [MHz]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]
1	47.4775	-16.37	27.48	40.00	12.52
2	215.4555	-16.58	34.29	43.50	9.21
3	264.004	-15.60	35.01	46.00	10.99
4	456.2563	-10.48	36.75	46.00	9.25
5	696.0861	-6.30	39.10	46.00	6.90
6	720.3604	-6.11	38.85	46.00	7.15

Test mode: 802.11a Frequency(MHz): 5240

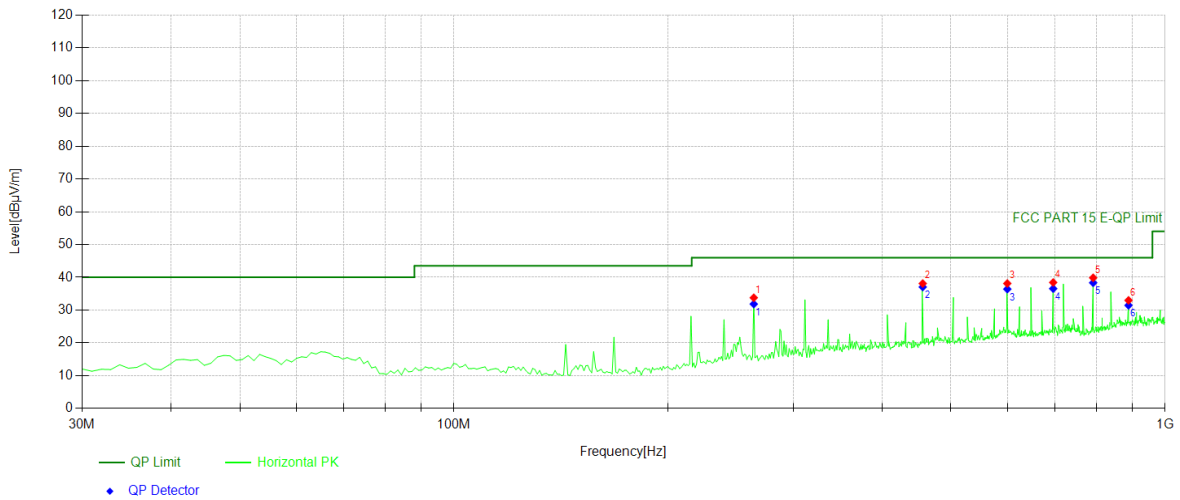


Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	47.4775	45.04	-16.37	28.67	PK	40.00	11.33	Vertical
2	215.455	52.15	-16.58	35.57	PK	43.50	7.93	Vertical
3	264.004	51.57	-15.60	35.97	PK	46.00	10.03	Vertical
4	456.256	49.30	-10.48	38.82	PK	46.00	7.18	Vertical
5	696.086	47.06	-6.30	40.76	PK	46.00	5.24	Vertical
6	720.360	46.23	-6.11	40.12	PK	46.00	5.88	Vertical

Final Data List

NO.	Freq. [MHz]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]
1	47.4775	-16.37	27.37	40.00	12.63
2	215.4555	-16.58	34.27	43.50	9.23
3	264.004	-15.60	34.86	46.00	11.14
4	456.2563	-10.48	37.71	46.00	8.29
5	696.0861	-6.30	39.01	46.00	6.99
6	720.3604	-6.11	38.73	46.00	7.27



Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	264.004	49.37	-15.60	33.77	PK	46.00	12.23	Horizontal
2	456.256	48.60	-10.48	38.12	PK	46.00	7.88	Horizontal
3	599.96	44.57	-6.44	38.13	PK	46.00	7.87	Horizontal
4	696.086	44.73	-6.30	38.43	PK	46.00	7.57	Horizontal
5	792.212	45.94	-6.08	39.86	PK	46.00	6.14	Horizontal
6	888.338	36.45	-3.47	32.98	PK	46.00	13.02	Horizontal

Final Data List

NO.	Freq. [MHz]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]
1	264.004	-15.60	31.86	46.00	14.14
2	456.2563	-10.48	37.04	46.00	8.96
3	599.96	-6.44	36.41	46.00	9.59
4	696.0861	-6.30	36.55	46.00	9.45
5	792.2122	-6.08	38.34	46.00	7.66
6	888.3383	-3.47	31.46	46.00	14.54

8.5 POWER LINE CONDUCTED EMISSIONS

8.5.1 Applicable Standard

According to FCC Part 15.207(a)

8.5.2 Conformance Limit

Frequency(MHz)	Conducted Emission Limit	
	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

8.5.3 Test Configuration

Test according to clause 6.3 conducted emission test setup

8.5.4 Test Procedure

The EUT was placed on a table which is 0.8m above ground plane.

Maximum procedure was performed on the highest emissions to ensure EUT compliance.

Repeat above procedures until all frequency measured were complete.

8.5.5 Test Results

N/A

8.6 ANTENNA APPLICATION

8.6.1 Antenna Requirement

Standard	Requirement
FCC CRF Part 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

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 15.407 (a), 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.

8.6.2 Result

PASS

Temperature : 25°C ATM Pressure: 1011 mbar
Humidity : 60 % Test Engineer: XXH

The EUT is integrated antenna, the antenna gain as below:

Ant: 3.12dBi,

- ☒ Antennas use a permanently attached antenna which is not replaceable.
- ☐ Not using a standard antenna jack or electrical connector for antenna replacement
- ☐ The antenna has to be professionally installed (please provide method of installation)

Which in accordance to section 15.203, please refer to the internal photos.

Detail of factor for radiated emission:

Frequency(MHz)	Ant_F(dB)	Cab_L(dB)	Preamp(dB)	Correct Factor(dB)
0.009	20.6	0.03	\	20.63
0.15	20.7	0.1	\	20.8
1	20.9	0.15	\	21.05
10	20.1	0.28	\	20.38
30	18.8	0.45	\	19.25
30	11.7	0.62	27.9	-15.58
100	12.5	1.02	27.8	-14.28
300	12.9	1.91	27.5	-12.69
600	19.2	2.92	27	-4.88
800	21.1	3.54	26.6	-1.96
1000	22.3	4.17	26.2	0.27
1000	25.6	1.76	41.4	-14.04
3000	28.9	3.27	43.2	-11.03
5000	31.1	4.2	44.6	-9.3
8000	36.2	5.95	44.7	-2.55
10000	38.4	6.3	43.9	0.8
12000	38.5	7.14	42.3	3.34
15000	40.2	8.15	41.4	6.95
18000	45.4	9.02	41.3	13.12
18000	37.9	1.81	47.9	-8.19
21000	37.9	1.95	48.7	-8.85
25000	39.3	2.01	42.8	-1.49
28000	39.6	2.16	46.0	-4.24
31000	41.2	2.24	44.5	-1.06
34000	41.5	2.29	46.6	-2.81
37000	43.8	2.30	46.4	-0.3
40000	43.2	2.50	42.2	3.5

--- End of Report ---

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