Radiated Spurious Emission Measurement Result (below 1GHz)

(Band UNII-1 / Band UNII-2A, 802.11ac VHT80 mode)

Operation Mode	TX MODE	Test Date	2019/12/13
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	143.49	47.23	-6.29	40.94	43.50	-2.56	Peak	VERTICAL
2	239.52	46.68	-6.98	39.70	46.00	-6.30	Peak	VERTICAL
3	300.63	36.31	-4.82	31.49	46.00	-14.51	Peak	VERTICAL
4	335.55	34.83	-4.25	30.58	46.00	-15.42	Peak	VERTICAL
5	450.01	32.95	-2.07	30.88	46.00	-15.12	Peak	VERTICAL
6	675.05	29.06	1.44	30.50	46.00	-15.50	Peak	VERTICAL
1	143.49	41.39	-6.29	35.10	43.50	-8.40	Peak	HORIZONTAL
2	215.27	41.88	-8.34	33.54	43.50	-9.96	Peak	HORIZONTAL
3	335.55	34.64	-4.25	30.39	46.00	-15.61	Peak	HORIZONTAL
4	378.23	34.19	-3.43	30.76	46.00	-15.24	Peak	HORIZONTAL
5	431.58	33.80	-2.41	31.39	46.00	-14.61	Peak	HORIZONTAL
6	676.99	28.96	1.49	30.45	46.00	-15.55	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

5 The IF bandwidth of SPA between 9kHz to 30MHz was 10kHz, VBW= 30kHz; between 30MHz to 1GHz was 100kHz, VBW=300kHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	TX MODE	Test Date	2019/12/13
Channel Number	CH High	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	60.07	15.18	21.01	36.19	40.00	-3.81	Peak	VERTICAL
2	143.49	15.23	20.58	35.81	43.50	-7.69	Peak	VERTICAL
3	203.63	16.65	18.59	35.24	43.50	-8.26	Peak	VERTICAL
4	239.52	15.67	20.04	35.71	46.00	-10.29	Peak	VERTICAL
5	288.02	11.21	21.59	32.80	46.00	-13.20	Peak	VERTICAL
6	336.52	9.66	22.98	32.64	46.00	-13.36	Peak	VERTICAL
1	59.10	9.12	21.10	30.22	40.00	-9.78	Peak	HORIZONTAL
2	143.49	16.21	20.58	36.79	43.50	-6.71	Peak	HORIZONTAL
3	239.52	14.85	20.04	34.89	46.00	-11.11	Peak	HORIZONTAL
4	288.02	15.37	21.59	36.96	46.00	-9.04	Peak	HORIZONTAL
5	336.52	13.66	22.98	36.64	46.00	-9.36	Peak	HORIZONTAL
6	577.08	1.75	28.12	29.87	46.00	-16.13	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

5 The IF bandwidth of SPA between 9kHz to 30MHz was 10kHz, VBW= 30kHz; between 30MHz to 1GHz was 100kHz, VBW=300kHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

(Band UNII-2C, 802.11a mode)

Operation Mode	TX MODE	Test Date	2019/12/13
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	125.06	38.42	-8.04	30.38	43.50	-13.12	Peak	VERTICAL
2	250.19	33.25	-6.67	26.58	46.00	-19.42	Peak	VERTICAL
3	395.69	45.55	-3.06	42.49	46.00	-3.51	Peak	VERTICAL
4	500.45	32.50	-1.64	30.86	46.00	-15.14	Peak	VERTICAL
5	625.58	37.92	0.71	38.63	46.00	-7.37	Peak	VERTICAL
6	750.71	30.34	3.09	33.43	46.00	-12.57	Peak	VERTICAL
1	125.06	38.99	-8.04	30.95	43.50	-12.55	Peak	HORIZONTAL
2	250.19	41.31	-6.67	34.64	46.00	-11.36	Peak	HORIZONTAL
3	395.69	39.80	-3.06	36.74	46.00	-9.26	Peak	HORIZONTAL
4	545.07	36.82	-0.90	35.92	46.00	-10.08	Peak	HORIZONTAL
5	594.54	33.69	0.29	33.98	46.00	-12.02	Peak	HORIZONTAL
6	625.58	42.30	0.71	43.01	46.00	-2.99	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

5 The IF bandwidth of SPA between 9kHz to 30MHz was 10kHz, VBW= 30kHz; between 30MHz to 1GHz was 100kHz, VBW=300kHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	TX MODE	Test Date	2019/12/13
Channel Number	CH Mid	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	125.06	38.54	-8.04	30.50	43.50	-13.00	Peak	VERTICAL
2	250.19	33.44	-6.67	26.77	46.00	-19.23	Peak	VERTICAL
3	395.69	45.71	-3.06	42.65	46.00	-3.35	Peak	VERTICAL
4	500.45	32.18	-1.64	30.54	46.00	-15.46	Peak	VERTICAL
5	625.58	38.21	0.71	38.92	46.00	-7.08	Peak	VERTICAL
6	750.71	30.63	3.09	33.72	46.00	-12.28	Peak	VERTICAL
1	125.06	38.43	-8.04	30.39	43.50	-13.11	Peak	HORIZONTAL
2	250.19	41.30	-6.67	34.63	46.00	-11.37	Peak	HORIZONTAL
3	395.69	36.61	-3.06	33.55	46.00	-12.45	Peak	HORIZONTAL
4	500.45	34.56	-1.64	32.92	46.00	-13.08	Peak	HORIZONTAL
5	625.58	42.20	0.71	42.91	46.00	-3.09	Peak	HORIZONTAL
6	750.71	34.89	3.09	37.98	46.00	-8.02	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

5 The IF bandwidth of SPA between 9kHz to 30MHz was 10kHz, VBW= 30kHz; between 30MHz to 1GHz was 100kHz, VBW=300kHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	TX MODE	Test Date	2019/12/13
Channel Number	CH High	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	125.06	38.63	-8.04	30.59	43.50	-12.91	Peak	VERTICAL
2	395.69	38.27	-3.06	35.21	46.00	-10.79	Peak	VERTICAL
3	500.45	33.08	-1.64	31.44	46.00	-14.56	Peak	VERTICAL
4	625.58	38.41	0.71	39.12	46.00	-6.88	Peak	VERTICAL
5	750.71	30.05	3.09	33.14	46.00	-12.86	Peak	VERTICAL
6	875.84	31.89	4.85	36.74	46.00	-9.26	Peak	VERTICAL
1	125.06	38.68	-8.04	30.64	43.50	-12.86	Peak	HORIZONTAL
2	250.19	41.03	-6.67	34.36	46.00	-11.64	Peak	HORIZONTAL
3	395.69	41.00	-3.06	37.94	46.00	-8.06	Peak	HORIZONTAL
4	514.03	34.69	-1.42	33.27	46.00	-12.73	Peak	HORIZONTAL
5	625.58	41.10	0.71	41.81	46.00	-4.19	Peak	HORIZONTAL
6	750.71	34.57	3.09	37.66	46.00	-8.34	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

5 The IF bandwidth of SPA between 9kHz to 30MHz was 10kHz, VBW= 30kHz; between 30MHz to 1GHz was 100kHz, VBW=300kHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

(Band UNII-2C, 802.11n HT40 mode)

Operation Mode	TX MODE	Test Date	2019/12/13
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	59.10	37.06	-6.70	30.36	40.00	-9.64	Peak	VERTICAL
2	125.06	38.38	-8.04	30.34	43.50	-13.16	Peak	VERTICAL
3	395.69	38.61	-3.06	35.55	46.00	-10.45	Peak	VERTICAL
4	521.79	32.83	-1.28	31.55	46.00	-14.45	Peak	VERTICAL
5	625.58	37.75	0.71	38.46	46.00	-7.54	Peak	VERTICAL
6	750.71	30.71	3.09	33.80	46.00	-12.20	Peak	VERTICAL
1	125.06	38.83	-8.04	30.79	43.50	-12.71	Peak	HORIZONTAL
2	250.19	41.26	-6.67	34.59	46.00	-11.41	Peak	HORIZONTAL
3	395.69	40.87	-3.06	37.81	46.00	-8.19	Peak	HORIZONTAL
4	500.45	34.89	-1.64	33.25	46.00	-12.75	Peak	HORIZONTAL
5	625.58	42.33	0.71	43.04	46.00	-2.96	Peak	HORIZONTAL
6	750.71	34.95	3.09	38.04	46.00	-7.96	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

5 The IF bandwidth of SPA between 9kHz to 30MHz was 10kHz, VBW= 30kHz; between 30MHz to 1GHz was 100kHz, VBW=300kHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	TX MODE	Test Date	2019/12/13
Channel Number	CH Mid	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	125.06	38.89	-8.04	30.85	43.50	-12.65	Peak	VERTICAL
2	395.69	42.01	-3.06	38.95	46.00	-7.05	Peak	VERTICAL
3	500.45	31.78	-1.64	30.14	46.00	-15.86	Peak	VERTICAL
4	625.58	37.93	0.71	38.64	46.00	-7.36	Peak	VERTICAL
5	750.71	29.68	3.09	32.77	46.00	-13.23	Peak	VERTICAL
6	875.84	31.20	4.85	36.05	46.00	-9.95	Peak	VERTICAL
1	125.06	38.75	-8.04	30.71	43.50	-12.79	Peak	HORIZONTAL
2	250.19	41.31	-6.67	34.64	46.00	-11.36	Peak	HORIZONTAL
3	395.69	37.55	-3.06	34.49	46.00	-11.51	Peak	HORIZONTAL
4	522.76	37.45	-1.27	36.18	46.00	-9.82	Peak	HORIZONTAL
5	625.58	41.04	0.71	41.75	46.00	-4.25	Peak	HORIZONTAL
6	750.71	35.44	3.09	38.53	46.00	-7.47	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

5 The IF bandwidth of SPA between 9kHz to 30MHz was 10kHz, VBW= 30kHz; between 30MHz to 1GHz was 100kHz, VBW=300kHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	TX MODE	Test Date	2019/12/13
Channel Number	CH High	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	59.10	38.27	-6.70	31.57	40.00	-8.43	Peak	VERTICAL
2	125.06	38.76	-8.04	30.72	43.50	-12.78	Peak	VERTICAL
3	395.69	39.43	-3.06	36.37	46.00	-9.63	Peak	VERTICAL
4	520.82	32.05	-1.30	30.75	46.00	-15.25	Peak	VERTICAL
5	625.58	37.58	0.71	38.29	46.00	-7.71	Peak	VERTICAL
6	875.84	30.65	4.85	35.50	46.00	-10.50	Peak	VERTICAL
1	125.06	38.83	-8.04	30.79	43.50	-12.71	Peak	HORIZONTAL
2	250.19	41.23	-6.67	34.56	46.00	-11.44	Peak	HORIZONTAL
3	395.69	36.53	-3.06	33.47	46.00	-12.53	Peak	HORIZONTAL
4	500.45	34.25	-1.64	32.61	46.00	-13.39	Peak	HORIZONTAL
5	625.58	41.33	0.71	42.04	46.00	-3.96	Peak	HORIZONTAL
6	750.71	35.48	3.09	38.57	46.00	-7.43	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

5 The IF bandwidth of SPA between 9kHz to 30MHz was 10kHz, VBW= 30kHz; between 30MHz to 1GHz was 100kHz, VBW=300kHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

(Band UNII-2C, 802.11ac VHT80 mode)

Operation Mode	TX MODE	Test Date	2019/12/13
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	59.10	38.31	-6.70	31.61	40.00	-8.39	Peak	VERTICAL
2	125.06	38.53	-8.04	30.49	43.50	-13.01	Peak	VERTICAL
3	250.19	33.78	-6.67	27.11	46.00	-18.89	Peak	VERTICAL
4	395.69	38.94	-3.06	35.88	46.00	-10.12	Peak	VERTICAL
5	625.58	37.57	0.71	38.28	46.00	-7.72	Peak	VERTICAL
6	875.84	31.62	4.85	36.47	46.00	-9.53	Peak	VERTICAL
1	125.06	38.31	-8.04	30.27	43.50	-13.23	Peak	HORIZONTAL
2	250.19	41.11	-6.67	34.44	46.00	-11.56	Peak	HORIZONTAL
3	395.69	35.87	-3.06	32.81	46.00	-13.19	Peak	HORIZONTAL
4	500.45	34.82	-1.64	33.18	46.00	-12.82	Peak	HORIZONTAL
5	625.58	42.02	0.71	42.73	46.00	-3.27	Peak	HORIZONTAL
6	750.71	35.26	3.09	38.35	46.00	-7.65	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

5 The IF bandwidth of SPA between 9kHz to 30MHz was 10kHz, VBW= 30kHz; between 30MHz to 1GHz was 100kHz, VBW=300kHz.

Operation Mode	TX MODE	Test Date	2019/12/13
Channel Number	CH High	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	125.06	38.52	-8.04	30.48	43.50	-13.02	Peak	VERTICAL
2	395.69	47.15	-3.06	44.09	46.00	-1.91	Peak	VERTICAL
3	513.06	33.65	-1.43	32.22	46.00	-13.78	Peak	VERTICAL
4	625.58	37.65	0.71	38.36	46.00	-7.64	Peak	VERTICAL
5	750.71	29.92	3.09	33.01	46.00	-12.99	Peak	VERTICAL
6	875.84	31.52	4.85	36.37	46.00	-9.63	Peak	VERTICAL
1	125.06	38.57	-8.04	30.53	43.50	-12.97	Peak	HORIZONTAL
2	250.19	40.98	-6.67	34.31	46.00	-11.69	Peak	HORIZONTAL
3	395.69	35.71	-3.06	32.65	46.00	-13.35	Peak	HORIZONTAL
4	500.45	35.55	-1.64	33.91	46.00	-12.09	Peak	HORIZONTAL
5	625.58	42.03	0.71	42.74	46.00	-3.26	Peak	HORIZONTAL
6	750.71	35.31	3.09	38.40	46.00	-7.60	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

5 The IF bandwidth of SPA between 9kHz to 30MHz was 10kHz, VBW= 30kHz; between 30MHz to 1GHz was 100kHz, VBW=300kHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

(Band UNII-3, 802.11a mode)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	143.49	47.15	-6.29	40.86	43.50	-2.64	Peak	VERTICAL
2	239.52	45.51	-6.98	38.53	46.00	-7.47	Peak	VERTICAL
3	335.55	35.51	-4.25	31.26	46.00	-14.74	Peak	VERTICAL
4	431.58	33.75	-2.41	31.34	46.00	-14.66	Peak	VERTICAL
5	526.64	30.98	-1.20	29.78	46.00	-16.22	Peak	VERTICAL
6	675.05	28.62	1.44	30.06	46.00	-15.94	Peak	VERTICAL
1	143.49	43.58	-6.29	37.29	43.50	-6.21	Peak	HORIZONTAL
2	204.60	41.60	-8.57	33.03	43.50	-10.47	Peak	HORIZONTAL
3	359.80	35.26	-3.82	31.44	46.00	-14.56	Peak	HORIZONTAL
4	431.58	33.50	-2.41	31.09	46.00	-14.91	Peak	HORIZONTAL
5	612.97	29.66	0.57	30.23	46.00	-15.77	Peak	HORIZONTAL
6	733.25	27.33	2.69	30.02	46.00	-15.98	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

5 The IF bandwidth of SPA between 9kHz to 30MHz was 10kHz, VBW= 30kHz; between 30MHz to 1GHz was 100kHz, VBW=300kHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH Mid	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	143.49	47.05	-6.29	40.76	43.50	-2.74	Peak	VERTICAL
2	239.52	45.56	-6.98	38.58	46.00	-7.42	Peak	VERTICAL
3	300.63	36.94	-4.82	32.12	46.00	-13.88	Peak	VERTICAL
4	431.58	33.75	-2.41	31.34	46.00	-14.66	Peak	VERTICAL
5	629.46	28.71	0.77	29.48	46.00	-16.52	Peak	VERTICAL
6	749.74	28.33	3.08	31.41	46.00	-14.59	Peak	VERTICAL
1	143.49	43.43	-6.29	37.14	43.50	-6.36	Peak	HORIZONTAL
2	203.63	42.49	-8.59	33.90	43.50	-9.60	Peak	HORIZONTAL
3	335.55	34.61	-4.25	30.36	46.00	-15.64	Peak	HORIZONTAL
4	431.58	33.37	-2.41	30.96	46.00	-15.04	Peak	HORIZONTAL
5	607.15	27.98	0.51	28.49	46.00	-17.51	Peak	HORIZONTAL
6	676.99	28.35	1.49	29.84	46.00	-16.16	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

5 The IF bandwidth of SPA between 9kHz to 30MHz was 10kHz, VBW= 30kHz; between 30MHz to 1GHz was 100kHz, VBW=300kHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH High	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	143.49	47.03	-6.29	40.74	43.50	-2.76	Peak	VERTICAL
2	239.52	45.03	-6.98	38.05	46.00	-7.95	Peak	VERTICAL
3	299.66	37.24	-4.83	32.41	46.00	-13.59	Peak	VERTICAL
4	431.58	33.82	-2.41	31.41	46.00	-14.59	Peak	VERTICAL
5	531.49	30.21	-1.13	29.08	46.00	-16.92	Peak	VERTICAL
6	752.65	29.84	3.12	32.96	46.00	-13.04	Peak	VERTICAL
1	143.49	42.45	-6.29	36.16	43.50	-7.34	Peak	HORIZONTAL
2	207.51	45.08	-8.56	36.52	43.50	-6.98	Peak	HORIZONTAL
3	335.55	36.94	-4.25	32.69	46.00	-13.31	Peak	HORIZONTAL
4	431.58	32.84	-2.41	30.43	46.00	-15.57	Peak	HORIZONTAL
5	602.30	28.53	0.44	28.97	46.00	-17.03	Peak	HORIZONTAL
6	824.43	28.40	3.97	32.37	46.00	-13.63	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

5 The IF bandwidth of SPA between 9kHz to 30MHz was 10kHz, VBW= 30kHz; between 30MHz to 1GHz was 100kHz, VBW=300kHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

(Band UNII-3, 802.11n HT40 mode)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	143.49	46.86	-6.29	40.57	43.50	-2.93	Peak	VERTICAL
2	239.52	45.40	-6.98	38.42	46.00	-7.58	Peak	VERTICAL
3	361.74	34.66	-3.76	30.90	46.00	-15.10	Peak	VERTICAL
4	498.51	35.70	-1.66	34.04	46.00	-11.96	Peak	VERTICAL
5	675.05	28.18	1.44	29.62	46.00	-16.38	Peak	VERTICAL
6	856.44	27.22	4.48	31.70	46.00	-14.30	Peak	VERTICAL
1	143.49	40.08	-6.29	33.79	43.50	-9.71	Peak	HORIZONTAL
2	201.69	43.66	-8.59	35.07	43.50	-8.43	Peak	HORIZONTAL
3	374.35	36.53	-3.51	33.02	46.00	-12.98	Peak	HORIZONTAL
4	431.58	32.50	-2.41	30.09	46.00	-15.91	Peak	HORIZONTAL
5	621.70	28.00	0.68	28.68	46.00	-17.32	Peak	HORIZONTAL
6	860.32	28.00	4.55	32.55	46.00	-13.45	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

5 The IF bandwidth of SPA between 9kHz to 30MHz was 10kHz, VBW= 30kHz; between 30MHz to 1GHz was 100kHz, VBW=300kHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH Mid	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	143.49	46.95	-6.29	40.66	43.50	-2.84	Peak	VERTICAL
2	239.52	44.88	-6.98	37.90	46.00	-8.10	Peak	VERTICAL
3	300.63	38.26	-4.82	33.44	46.00	-12.56	Peak	VERTICAL
4	449.04	34.26	-2.09	32.17	46.00	-13.83	Peak	VERTICAL
5	604.24	28.48	0.47	28.95	46.00	-17.05	Peak	VERTICAL
6	752.65	27.67	3.12	30.79	46.00	-15.21	Peak	VERTICAL
1	143.49	41.23	-6.29	34.94	43.50	-8.56	Peak	HORIZONTAL
2	203.63	44.91	-8.59	36.32	43.50	-7.18	Peak	HORIZONTAL
3	335.55	35.89	-4.25	31.64	46.00	-14.36	Peak	HORIZONTAL
4	431.58	33.87	-2.41	31.46	46.00	-14.54	Peak	HORIZONTAL
5	624.61	27.82	0.71	28.53	46.00	-17.47	Peak	HORIZONTAL
6	848.68	28.15	4.34	32.49	46.00	-13.51	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

5 The IF bandwidth of SPA between 9kHz to 30MHz was 10kHz, VBW= 30kHz; between 30MHz to 1GHz was 100kHz, VBW=300kHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH High	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	143.49	46.93	-6.29	40.64	43.50	-2.86	Peak	VERTICAL
2	239.52	46.42	-6.98	39.44	46.00	-6.56	Peak	VERTICAL
3	299.66	36.63	-4.83	31.80	46.00	-14.20	Peak	VERTICAL
4	335.55	34.62	-4.25	30.37	46.00	-15.63	Peak	VERTICAL
5	450.01	33.82	-2.07	31.75	46.00	-14.25	Peak	VERTICAL
6	741.98	26.99	2.90	29.89	46.00	-16.11	Peak	VERTICAL
1	143.49	40.32	-6.29	34.03	43.50	-9.47	Peak	HORIZONTAL
2	204.60	43.85	-8.57	35.28	43.50	-8.22	Peak	HORIZONTAL
3	335.55	35.63	-4.25	31.38	46.00	-14.62	Peak	HORIZONTAL
4	376.29	34.94	-3.48	31.46	46.00	-14.54	Peak	HORIZONTAL
5	431.58	33.09	-2.41	30.68	46.00	-15.32	Peak	HORIZONTAL
6	599.39	29.54	0.41	29.95	46.00	-16.05	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

5 The IF bandwidth of SPA between 9kHz to 30MHz was 10kHz, VBW= 30kHz; between 30MHz to 1GHz was 100kHz, VBW=300kHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

(Band UNII-3, 802.11ac VHT80 mode)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	143.49	46.74	-6.29	40.45	43.50	-3.05	Peak	VERTICAL
2	239.52	46.08	-6.98	39.10	46.00	-6.90	Peak	VERTICAL
3	300.63	37.08	-4.82	32.26	46.00	-13.74	Peak	VERTICAL
4	368.53	34.17	-3.64	30.53	46.00	-15.47	Peak	VERTICAL
5	421.88	32.66	-2.58	30.08	46.00	-15.92	Peak	VERTICAL
6	675.05	30.54	1.44	31.98	46.00	-14.02	Peak	VERTICAL
1	143.49	41.16	-6.29	34.87	43.50	-8.63	Peak	HORIZONTAL
2	203.63	43.21	-8.59	34.62	43.50	-8.88	Peak	HORIZONTAL
3	335.55	36.26	-4.25	32.01	46.00	-13.99	Peak	HORIZONTAL
4	383.08	35.19	-3.33	31.86	46.00	-14.14	Peak	HORIZONTAL
5	431.58	34.04	-2.41	31.63	46.00	-14.37	Peak	HORIZONTAL
6	752.65	28.21	3.12	31.33	46.00	-14.67	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

5 The IF bandwidth of SPA between 9kHz to 30MHz was 10kHz, VBW= 30kHz; between 30MHz to 1GHz was 100kHz, VBW=300kHz.

Radiated Spurious Emission Measurement Result (above 1GHz)

(Band UNII-1 / Band UNII-2A, 802.11a mode)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	10360.00	39.19	4.29	43.48	68.20	-24.72	Peak	VERTICAL
2	14030.00	43.65	9.82	53.47	68.20	-14.73	Peak	VERTICAL
1	10360.00	47.32	4.29	51.61	68.20	-16.59	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH Mid	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	10440.00	40.03	4.52	44.55	68.20	-23.65	Peak	VERTICAL
2	14050.00	42.85	9.81	52.66	68.20	-15.54	Peak	VERTICAL
1	10440.00	38.98	4.52	43.50	68.20	-24.70	Peak	HORIZONTAL
2	14020.00	42.02	9.82	51.84	68.20	-16.36	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH High	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	10440.00	39.97	4.52	44.49	68.20	-23.71	Peak	VERTICAL
2	14130.00	41.76	9.75	51.51	68.20	-16.69	Peak	VERTICAL
1	10480.00	40.39	4.63	45.02	68.20	-23.18	Peak	HORIZONTAL
2	14060.00	42.36	9.80	52.16	68.20	-16.04	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

(Band UNII-1 / Band UNII-2A, 802.11n HT40 mode)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	10480.00	38.41	4.63	43.04	68.20	-25.16	Peak	VERTICAL
2	14060.00	41.83	9.80	51.63	68.20	-16.57	Peak	VERTICAL
1	10380.00	40.77	4.35	45.12	68.20	-23.08	Peak	HORIZONTAL
2	14510.00	43.99	9.53	53.52	68.20	-14.68	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH Mid	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	10380.00	38.35	4.35	42.70	68.20	-25.50	Peak	VERTICAL
2	13980.00	41.94	9.79	51.73	68.20	-16.47	Peak	VERTICAL
1	10460.00	41.56	4.56	46.12	68.20	-22.08	Peak	HORIZONTAL
2	14000.00	42.89	9.84	52.73	68.20	-15.47	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH High	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	10460.00	40.15	4.56	44.71	68.20	-23.49	Peak	VERTICAL
2	14080.00	43.08	9.79	52.87	68.20	-15.33	Peak	VERTICAL
1	10500.00	37.65	4.68	42.33	68.20	-25.87	Peak	HORIZONTAL
2	14090.00	41.98	9.79	51.77	68.20	-16.43	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

(Band UNII-1 / Band UNII-2A, 802.11ac VHT80 mode)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	10420.00	40.93	4.20	45.13	68.20	-23.07	Peak	VERTICAL
2	14090.00	43.17	9.79	52.96	68.20	-15.24	Peak	VERTICAL
1	10420.00	40.07	4.20	44.27	68.20	-23.93	Peak	HORIZONTAL
2	14030.00	42.74	9.82	52.56	68.20	-15.64	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH High	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	10580.00	27.85	4.65	32.50	68.20	-35.70	Peak	VERTICAL
2	14030.00	33.97	9.50	43.47	68.20	-24.73	Peak	VERTICAL
1	10580.00	27.97	4.65	32.62	68.20	-35.58	Peak	HORIZONTAL
2	14080.00	32.14	9.47	41.61	68.20	-26.59	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

(Band UNII-2C, 802.11a mode)

Operation Mode	TX MODE	Test Date	2019/12/13
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	11000.00	28.42	5.97	34.39	74.00	-39.61	Peak	VERTICAL
2	14030.00	33.97	9.50	43.47	68.20	-24.73	Peak	VERTICAL
1	14080.00	32.14	9.47	41.61	68.20	-26.59	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	TX MODE	Test Date	2019/12/13
Channel Number	CH Mid	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	11200.00	28.65	6.15	34.80	74.00	-39.20	Peak	VERTICAL
2	14050.00	33.17	9.49	42.66	68.20	-25.54	Peak	VERTICAL
1	11200.00	27.48	6.15	33.63	74.00	-40.37	Peak	HORIZONTAL
2	14020.00	32.35	9.49	41.84	68.20	-26.36	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	TX MODE	Test Date	2019/12/13
Channel Number	CH High	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	11400.00	28.24	6.32	34.56	74.00	-39.44	Peak	VERTICAL
2	14130.00	33.08	9.43	42.51	68.20	-25.69	Peak	VERTICAL
1	11400.00	27.26	6.32	33.58	74.00	-40.42	Peak	HORIZONTAL
2	14060.00	31.69	9.47	41.16	68.20	-27.04	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

(Band UNII-2C, 802.11n HT40 mode)

Operation Mode	TX MODE	Test Date	2019/12/13
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	11020.00	27.52	5.98	33.50	74.00	-40.50	Peak	VERTICAL
2	14060.00	32.16	9.47	41.63	68.20	-26.57	Peak	VERTICAL
1	11020.00	28.05	5.98	34.03	74.00	-39.97	Peak	HORIZONTAL
2	14510.00	33.28	9.24	42.52	68.20	-25.68	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	TX MODE	Test Date	2019/12/13
Channel Number	CH Mid	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	11180.00	25.68	6.14	31.82	74.00	-42.18	Peak	VERTICAL
2	14650.00	31.76	9.22	40.98	68.20	-27.22	Peak	VERTICAL
1	11180.00	27.19	6.14	33.33	74.00	-40.67	Peak	HORIZONTAL
2	14000.00	32.22	9.51	41.73	68.20	-26.47	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	TX MODE	Test Date	2019/12/13
Channel Number	CH High	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	11340.00	27.57	6.27	33.84	74.00	-40.16	Peak	VERTICAL
2	14080.00	32.40	9.47	41.87	68.20	-26.33	Peak	VERTICAL
1	11340.00	27.32	6.27	33.59	74.00	-40.41	Peak	HORIZONTAL
2	14090.00	32.30	9.47	41.77	68.20	-26.43	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

(Band UNII-2C, 802.11ac VHT80 mode)

Operation Mode	TX MODE	Test Date	2019/12/13
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	11060.00	32.24	6.03	38.27	74.00	-35.73	Peak	VERTICAL
2	14090.00	33.49	9.47	42.96	68.20	-25.24	Peak	VERTICAL
1	11060.00	29.55	6.03	35.58	74.00	-38.42	Peak	HORIZONTAL
2	14030.00	33.06	9.50	42.56	68.20	-25.64	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	TX MODE	Test Date	2019/12/13
Channel Number	CH High	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	11220.00	27.14	6.16	33.30	74.00	-40.70	Peak	VERTICAL
2	14100.00	33.21	9.46	42.67	68.20	-25.53	Peak	VERTICAL
1	11220.00	27.27	6.16	33.43	74.00	-40.57	Peak	HORIZONTAL
2	14070.00	32.58	9.47	42.05	68.20	-26.15	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

(Band UNII-3, 802.11a mode)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	10420.00	38.01	4.47	42.48	68.20	-25.72	Peak	VERTICAL
2	14100.00	41.89	9.78	51.67	68.20	-16.53	Peak	VERTICAL
1	11490.00	38.27	6.72	44.99	74.00	-29.01	Peak	HORIZONTAL
2	14070.00	42.26	9.79	52.05	68.20	-16.15	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH Mid	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	11490.00	36.61	6.72	43.33	74.00	-30.67	Peak	VERTICAL
2	14030.00	44.30	9.82	54.12	68.20	-14.08	Peak	VERTICAL
1	11570.00	38.14	6.74	44.88	74.00	-29.12	Peak	HORIZONTAL
2	14030.00	43.22	9.82	53.04	68.20	-15.16	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH High	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	11570.00	40.02	6.74	46.76	74.00	-27.24	Peak	VERTICAL
2	14030.00	43.04	9.82	52.86	68.20	-15.34	Peak	VERTICAL
1	11650.00	37.24	6.75	43.99	74.00	-30.01	Peak	HORIZONTAL
2	14080.00	42.46	9.79	52.25	68.20	-15.95	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

(Band UNII-3, 802.11n HT40 mode)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	11650.00	40.35	6.75	47.10	74.00	-26.90	Peak	VERTICAL
2	14130.00	45.63	9.75	55.38	68.20	-12.82	Peak	VERTICAL
1	11510.00	40.17	6.73	46.90	74.00	-27.10	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH Mid	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	11510.00	40.71	6.73	47.44	74.00	-26.56	Peak	VERTICAL
2	13940.00	44.74	9.69	54.43	68.20	-13.77	Peak	VERTICAL
1	11550.00	39.95	6.73	46.68	74.00	-27.32	Peak	HORIZONTAL
2	14050.00	44.48	9.81	54.29	68.20	-13.91	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH High	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	11550.00	38.39	6.73	45.12	74.00	-28.88	Peak	VERTICAL
2	14070.00	42.95	9.79	52.74	68.20	-15.46	Peak	VERTICAL
1	11630.00	38.48	6.75	45.23	74.00	-28.77	Peak	HORIZONTAL
2	14070.00	42.78	9.79	52.57	68.20	-15.63	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

(Band UNII-3, 802.11ac VHT80 mode)

Operation Mode	TX MODE	Test Date	2019/05/09
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	11630.00	38.45	6.75	45.20	74.00	-28.80	Peak	VERTICAL
2	14070.00	41.93	9.79	51.72	68.20	-16.48	Peak	VERTICAL
1	11550.00	42.01	6.73	48.74	74.00	-25.26	Peak	HORIZONTAL
2	13980.00	44.57	9.79	54.36	68.20	-13.84	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Band Edges test (Band UNII-1 / Band UNII-2A, 802.11a mode) -Radiated

Operation Mode	TX CH Low	Test Date	2019/12/13
Channel Number	5180 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5150.00	58.14	-8.53	49.61	68.20	-18.59	Peak	VERTICAL
1	5150.00	59.54	-8.53	51.01	68.20	-17.19	Peak	HORIZONTAL

Operation Mode	TX CH High	Test Date	2019/12/13
Channel Number	5240MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5350.00	59.07	4.13	63.20	68.20	-5.00	Peak	VERTICAL
2	5350.68	43.35	4.14	47.49	54.00	-6.51	Average	VERTICAL
3	5350.68	58.29	4.14	62.43	74.00	-11.57	Peak	VERTICAL
1	5350.00	59.79	-8.12	51.67	68.20	-16.53	Peak	HORIZONTAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Band Edges test (Band UNII-1 / Band UNII-2A, 802.11n HT20 mode) -Radiated

Operation Mode	TX CH Low	Test Date	2019/12/13
Channel Number	5180 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5150.00	57.70	-8.53	49.17	68.20	-19.03	Peak	VERTICAL
1	5150.00	59.02	-8.39	50.63	68.20	-17.57	Peak	HORIZONTAL

Operation Mode	TX CH High	Test Date	2019/12/13
Channel Number	5240MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5350.00	62.67	-8.12	54.55	68.20	-13.65	Peak	VERTICAL
1	5350.00	62.40	-8.12	54.28	68.20	-13.92	Peak	HORIZONTAL
2	5352.12	51.27	-8.10	43.17	54.00	-10.83	Average	HORIZONTAL
3	5352.12	63.09	-8.10	54.99	74.00	-19.01	Peak	HORIZONTAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Band Edges test (Band UNII-1 / Band UNII-2A, 802.11n HT40 mode) -Radiated

Operation Mode	TX CH Low	Test Date	2019/12/13
Channel Number	5190 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5150.00	58.12	-8.39	49.73	68.20	-18.47	Peak	VERTICAL
1	5150.00	57.96	-8.53	49.43	68.20	-18.77	Peak	HORIZONTAL

Operation Mode	TX CH High	Test Date	2019/12/13
Channel Number	5230MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5350.00	75.62	-8.12	67.50	68.20	-0.70	Peak	VERTICAL
2	5350.39	60.62	-8.11	52.51	54.00	-1.49	Average	VERTICAL
3	5350.39	75.45	-8.11	67.34	74.00	-6.66	Peak	VERTICAL
1	5350.00	75.21	-8.12	67.09	68.20	-1.11	Peak	HORIZONTAL
2	5350.50	59.24	-8.11	51.13	54.00	-2.87	Average	HORIZONTAL
3	5350.50	74.57	-8.11	66.46	74.00	-7.54	Peak	HORIZONTAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Band Edges test (Band UNII-1 / Band UNII-2A, 802.11ac VHT80 mode) -Radiated

Operation Mode	TX CH Low	Test Date	2019/12/13
Channel Number	5210 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5150.00	57.53	-8.39	49.14	68.20	-19.06	Peak	VERTICAL
1	5150.00	56.92	-8.39	48.53	68.20	-19.67	Peak	HORIZONTAL

Operation Mode	TX CH High	Test Date	2019/12/13
Channel Number	5290MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5350.00	70.30	-8.12	62.18	68.20	-6.02	Peak	VERTICAL
2	5353.35	59.93	-8.10	51.83	54.00	-2.17	Average	VERTICAL
3	5353.35	74.21	-8.10	66.11	74.00	-7.89	Peak	VERTICAL
1	5350.00	73.49	-8.12	65.37	68.20	-2.83	Peak	HORIZONTAL
2	5351.85	60.91	-8.11	52.80	54.00	-1.20	Average	HORIZONTAL
3	5351.85	75.05	-8.11	66.94	74.00	-7.06	Peak	HORIZONTAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Band Edges test (Band UNII-2C, 802.11a mode) -Radiated

Operation Mode	TX CH Low	Test Date	2019/12/13
Channel Number	5500 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5470.00	55.75	-7.79	47.96	68.20	-20.24	Peak	VERTICAL
1	5470.00	56.27	-7.79	48.48	68.20	-19.72	Peak	HORIZONTAL

Operation Mode	TX CH High	Test Date	2019/12/13
Channel Number	5700MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5725.00	70.45	-6.95	63.50	68.20	-4.70	Peak	VERTICAL
1	5725.00	66.40	-6.95	59.45	68.20	-8.75	Peak	HORIZONTAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Band Edges test (Band UNII-2C, 802.11n HT20 mode) -Radiated

Operation Mode	TX CH Low	Test Date	2019/12/13
Channel Number	5500 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5470.00	57.90	-7.79	50.11	68.20	-18.09	Peak	VERTICAL
1	5470.00	57.09	-7.79	49.30	68.20	-18.90	Peak	HORIZONTAL

Operation Mode	TX CH High	Test Date	2019/12/13
Channel Number	5700MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5725.00	74.66	-6.95	67.71	68.20	-0.49	Peak	VERTICAL
1	5725.00	69.55	-6.95	62.60	68.20	-5.60	Peak	HORIZONTAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Band Edges test (Band UNII-2C, 802.11n HT40 mode) -Radiated

Operation Mode	TX CH Low	Test Date	2019/12/13
Channel Number	5510 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5449.01	41.22	-7.86	33.36	54.00	-20.64	Average	VERTICAL
2	5449.01	61.77	-7.86	53.91	74.00	-20.09	Peak	VERTICAL
3	5457.59	42.31	-7.83	34.48	54.00	-19.52	Average	VERTICAL
4	5457.59	62.03	-7.83	54.20	74.00	-19.80	Peak	VERTICAL
5	5470.00	65.71	-7.79	57.92	68.20	-10.28	Peak	VERTICAL
1	5470.00	68.06	-7.79	60.27	68.20	-7.93	Peak	HORIZONTAL

Operation Mode	TX CH High	Test Date	2019/12/13
Channel Number	5670MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5725.00	69.68	-6.95	62.73	68.20	-5.47	Peak	VERTICAL
1	5725.00	66.93	-6.95	59.98	68.20	-8.22	Peak	HORIZONTAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Band Edges test (Band UNII-2C, 802.11ac VHT80 mode) -Radiated

Operation Mode	TX CH Low	Test Date	2019/12/13
Channel Number	5530 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5455.76	46.25	-7.83	38.42	54.00	-15.58	Average	VERTICAL
2	5455.76	66.22	-7.83	58.39	74.00	-15.61	Peak	VERTICAL
3	5470.00	66.78	-7.79	58.99	68.20	-9.21	Peak	VERTICAL
1	5455.76	47.40	-7.83	39.57	54.00	-14.43	Average	HORIZONTAL
2	5455.76	66.29	-7.83	58.46	74.00	-15.54	Peak	HORIZONTAL
3	5470.00	68.19	-7.79	60.40	68.20	-7.80	Peak	HORIZONTAL

Operation Mode	TX CH High	Test Date	2019/12/13
Channel Number	5610MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5725.00	56.90	-6.95	49.95	68.20	-18.25	Peak	VERTICAL
1	5725.00	56.64	-6.95	49.69	68.20	-18.51	Peak	HORIZONTAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

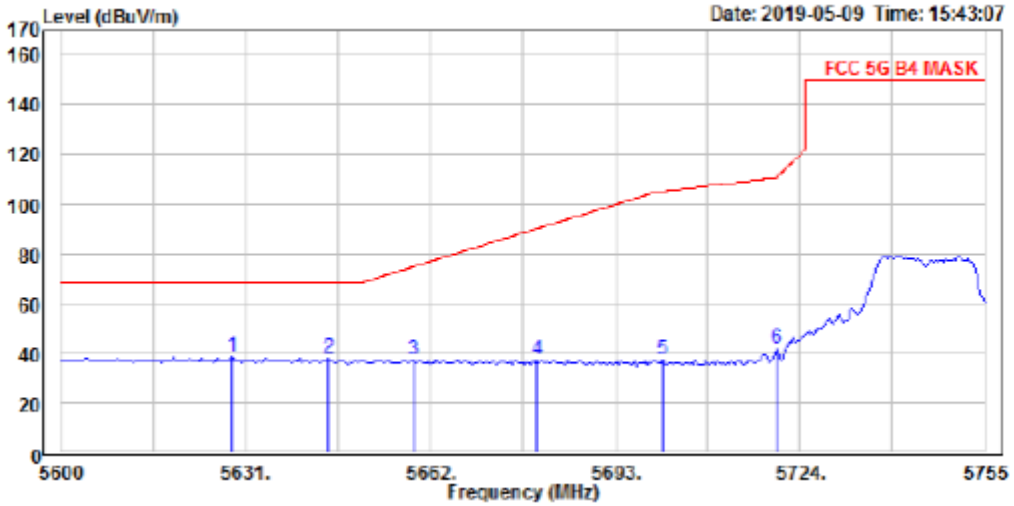
3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

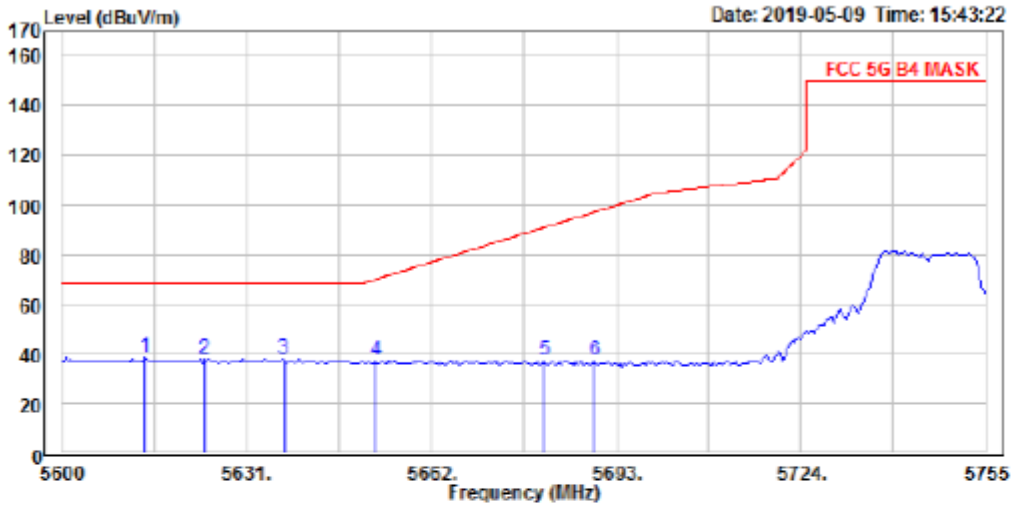
Band Edges test (Band UNII-3, 802.11a mode) –Radiated

Operation Mode	TX CH Low	Test Date	2019/05/09
Channel Number	5745 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %




```
Condition: limit\FCC\FCC 5G B4 MASK.csv 3m  Vertical
         : RBW:1000kHz VBW:3000kHz SWT:Auto DET:Positive
EUT      : GA-RT0001
Mode     : Wifi 5G Mask B4 802.11a Low Ch
Note     :
```

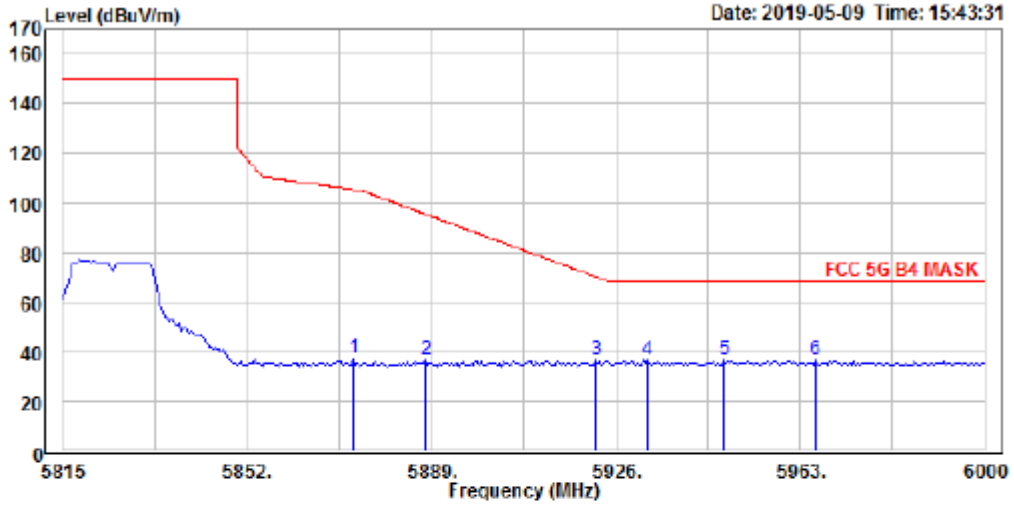
		Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	PP	5628.830	52.18	-13.17	39.01	68.20	-29.19	Vertical
2		5644.950	51.61	-13.20	38.41	68.20	-29.79	Vertical
3		5659.210	50.70	-13.22	37.48	75.04	-37.56	Vertical
4		5679.980	50.65	-13.26	37.39	90.42	-53.03	Vertical
5		5701.060	50.84	-13.29	37.55	105.50	-67.95	Vertical
6		5719.970	55.35	-13.32	42.03	110.79	-68.76	Vertical



Condition: limit\FCC\FCC 5G B4 MASK.csv 3m Horizontal
: RBW:1000kHz VBW:3000kHz SWT:Auto DET:Positive
EUT : GA-RT0001
Mode : Wifi 5G Mask B4 802.11a Low Ch
Note :

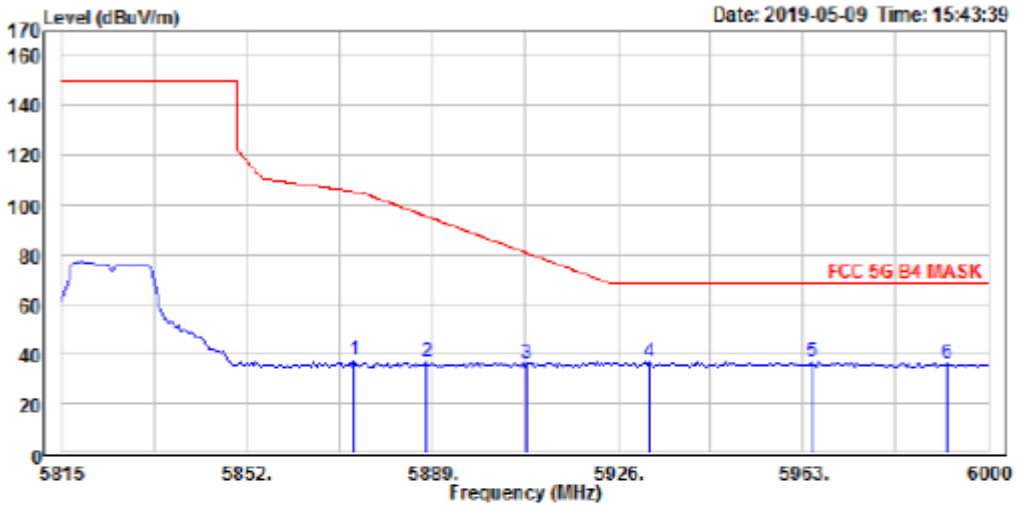
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1 PP	5613.950	51.56	-13.10	38.46	68.20	-29.74	Horizontal
2	5623.870	51.23	-13.11	38.12	68.20	-30.08	Horizontal
3	5637.200	51.19	-13.14	38.05	68.20	-30.15	Horizontal
4	5652.700	50.77	-13.16	37.61	70.21	-32.60	Horizontal
5	5680.910	50.58	-13.22	37.36	91.11	-53.75	Horizontal
6	5689.280	50.65	-13.23	37.42	97.29	-59.87	Horizontal

Operation Mode	TX CH High	Test Date	2019/05/09
Channel Number	5825MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



Condition: limit\FCC\FCC 5G B4 MASK.csv 3m Vertical
: RBW:1000kHz VBW:3000kHz SWT:Auto DET:Positive
EUT : GA-RT0001
Mode : Wifi 5G Mask B4 802.11a High Ch
Note :

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	5873.460	51.19	-13.58	37.61	105.63	-68.02	Vertical
2	5887.890	50.23	-13.60	36.63	95.63	-59.00	Vertical
3	5921.930	50.27	-13.66	36.61	70.46	-33.85	Vertical
4 PP	5932.290	50.44	-13.67	36.77	68.20	-31.43	Vertical
5	5947.830	50.28	-13.70	36.58	68.20	-31.62	Vertical
6	5965.960	50.25	-13.73	36.52	68.20	-31.68	Vertical

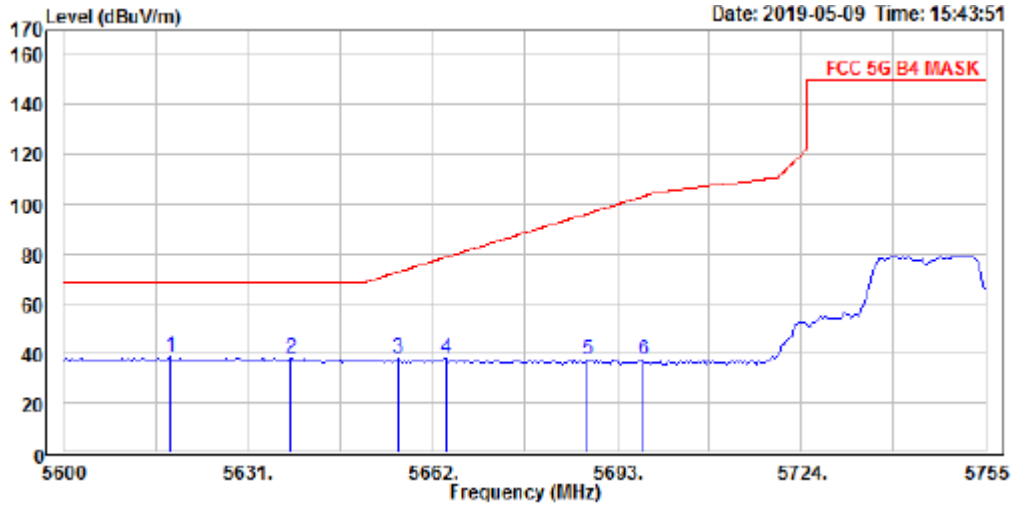


Condition: limit\FCC\FCC 5G B4 MASK.csv 3m Horizontal
: RBW:1000kHz VBW:3000kHz SWT:Auto DET:Positive
EUT : GA-RT0001
Mode : Wifi 5G Mask B4 802.11a High Ch
Note :

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	5873.460	51.19	-13.54	37.65	105.63	-67.98	Horizontal
2	5887.890	50.24	-13.57	36.67	95.63	-58.96	Horizontal
3	5907.870	50.10	-13.60	36.50	80.84	-44.34	Horizontal
4 PP	5932.290	50.43	-13.64	36.79	68.20	-31.41	Horizontal
5	5964.850	50.40	-13.70	36.70	68.20	-31.50	Horizontal
6	5991.860	50.10	-13.75	36.35	68.20	-31.85	Horizontal

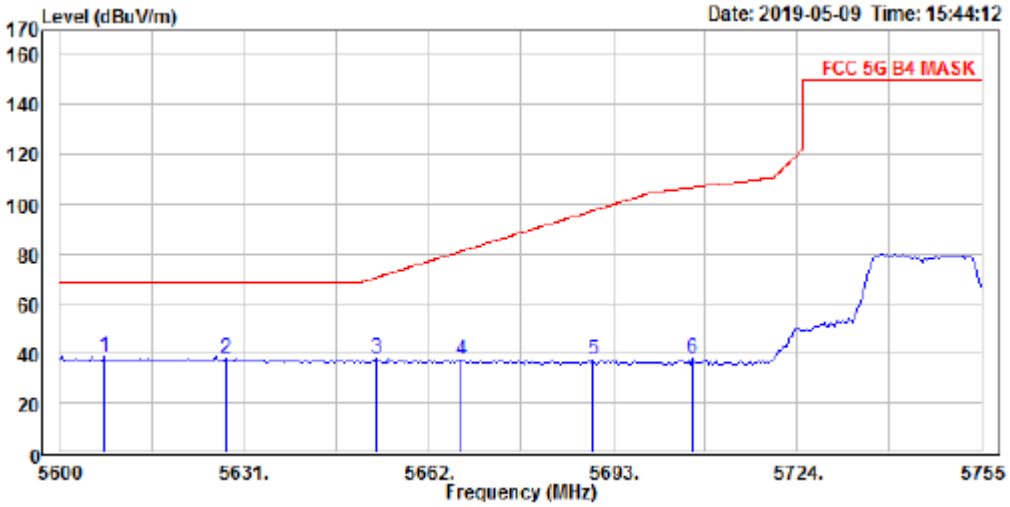
Band Edges test (Band UNII-3, 802.11n HT20 mode) –Radiated

Operation Mode	TX CH Low	Test Date	2019/05/09
Channel Number	5745 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



Condition: limit\FCC\FCC 5G B4 MASK.csv 3m Vertical
: RBW:1000kHz VBW:3000kHz SWT:Auto DET:Positive
EUT : GA-RT0001
Mode : Wifi 5G Mask B4 802.11HT20 Low Ch
Note :

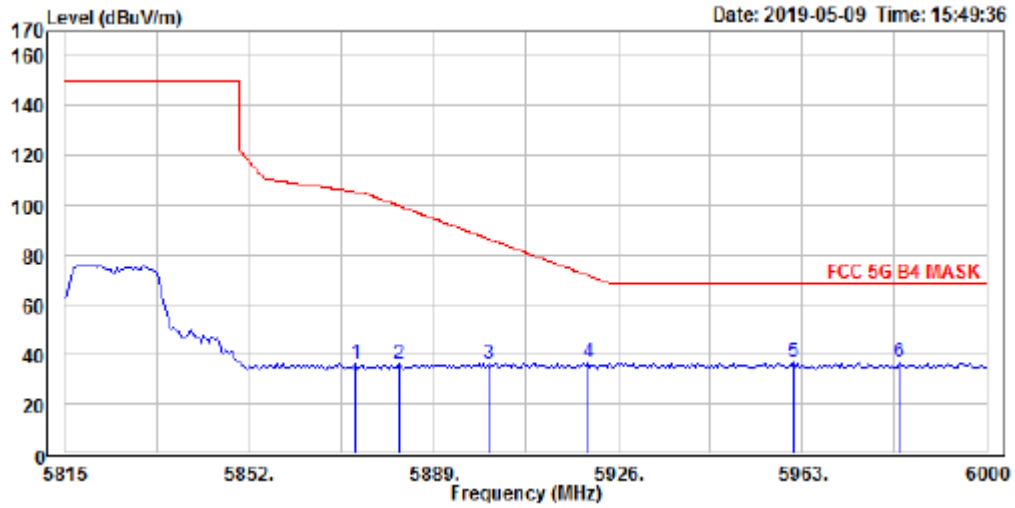
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1 PP	5617.980	51.63	-13.15	38.48	68.20	-29.72	Vertical
2	5638.130	51.45	-13.18	38.27	68.20	-29.93	Vertical
3	5656.110	51.05	-13.22	37.83	72.74	-34.91	Vertical
4	5664.170	51.18	-13.23	37.95	78.72	-40.77	Vertical
5	5688.040	51.07	-13.27	37.80	96.38	-58.58	Vertical
6	5697.340	51.01	-13.29	37.72	103.24	-65.52	Vertical



Condition: limit\FCC\FCC 5G B4 MASK.csv 3m Horizontal
: RBW:1000kHz VBW:3000kHz SWT:Auto DET:Positive
EUT : GA-RT0001
Mode : Wifi 5G Mask B4 802.11HT20 Low Ch
Note :

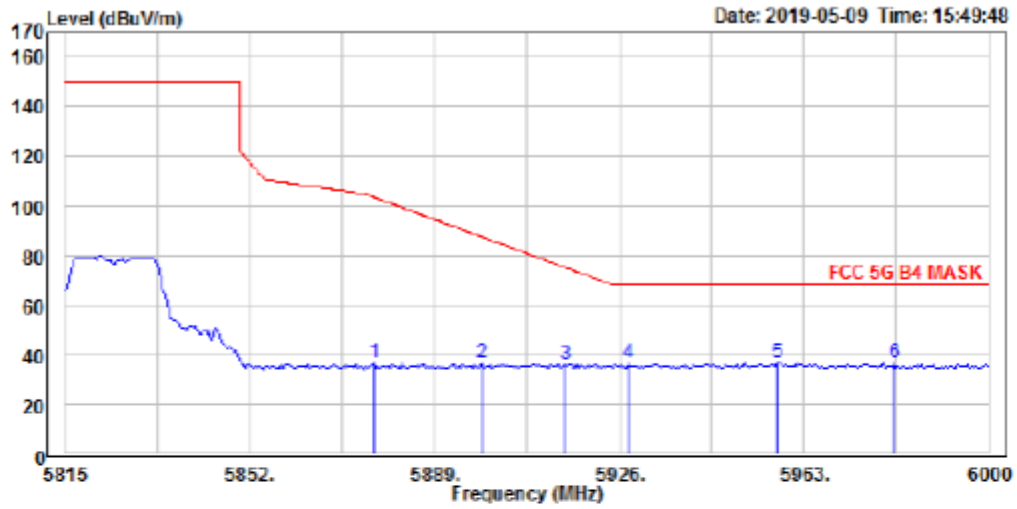
		Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	PP	5607.440	51.78	-13.08	38.70	68.20	-29.50	Horizontal
2		5627.900	51.19	-13.12	38.07	68.20	-30.13	Horizontal
3		5653.320	51.09	-13.17	37.92	70.67	-32.75	Horizontal
4		5667.580	50.98	-13.19	37.79	81.25	-43.46	Horizontal
5		5689.590	50.64	-13.23	37.41	97.52	-60.11	Horizontal
6		5706.330	51.12	-13.26	37.86	106.97	-69.11	Horizontal

Operation Mode	TX CH High	Test Date	2019/05/09
Channel Number	5825 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



Condition: limit\FCC\FCC 5G B4 MASK.csv 3m Vertical
: RBW:1000kHz VBW:3000kHz SWT:Auto DET:Positive
EUT : GA-RT0001
Mode : Wifi 5G Mask B4 802.11HT20 High Ch
Note :

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	5873.460	50.06	-13.58	36.48	105.63	-69.15	Vertical
2	5881.970	50.00	-13.59	36.41	100.02	-63.61	Vertical
3	5900.100	49.89	-13.62	36.27	86.59	-50.32	Vertical
4	5920.080	50.69	-13.65	37.04	71.83	-34.79	Vertical
5	5961.150	50.36	-13.72	36.64	68.20	-31.56	Vertical
6 PP	5982.610	50.82	-13.75	37.07	68.20	-31.13	Vertical

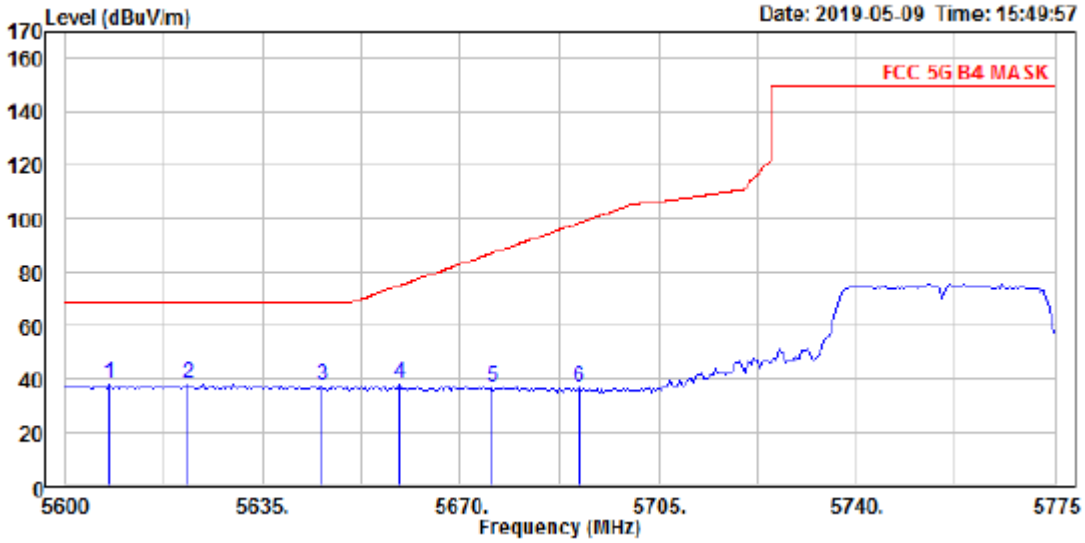


Condition: limit\FCC\FCC 5G B4 MASK.csv 3m Horizontal
: RBW:1000kHz VBW:3000kHz SWT:Auto DET:Positive
EUT : GA-RT0001
Mode : Wifi 5G Mask B4 802.11HT20 High Ch
Note :

	Freq	Read Level	Factor	Limit Level	Line	Over Limit	Pol/Phase
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	5876.790	50.13	-13.55	36.58	103.87	-67.29	Horizontal
2	5898.620	50.36	-13.59	36.77	87.68	-50.91	Horizontal
3	5915.270	49.94	-13.62	36.32	75.38	-39.06	Horizontal
4	5927.850	50.42	-13.64	36.78	68.20	-31.42	Horizontal
5 PP	5957.820	50.62	-13.69	36.93	68.20	-31.27	Horizontal
6	5981.130	50.62	-13.73	36.89	68.20	-31.31	Horizontal

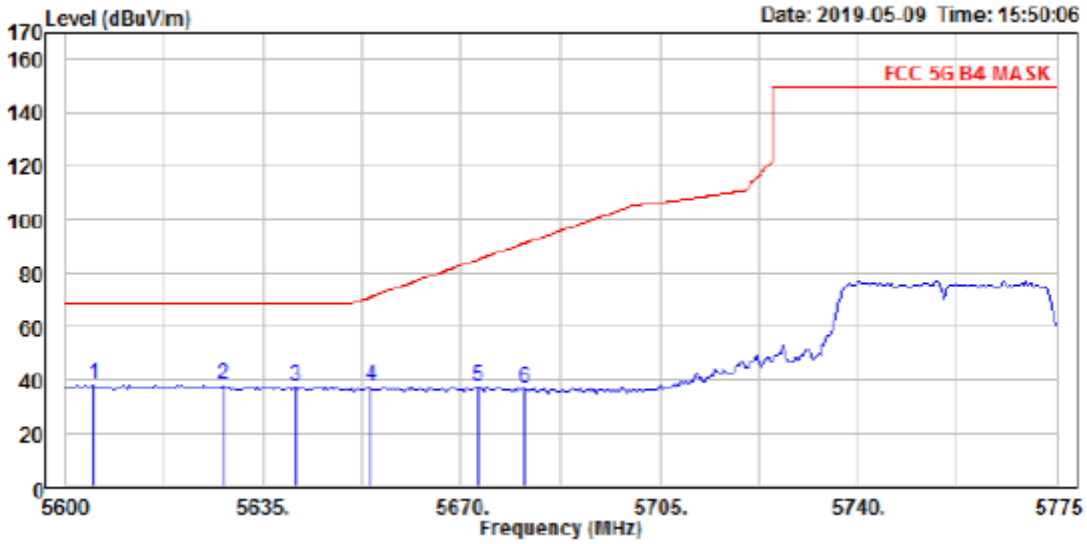
Band Edges test (Band UNII-3, 802.11n HT40 mode) –Radiated

Operation Mode	TX CH Low	Test Date	2019/05/09
Channel Number	5755 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %




```
Condition: limit\FCC\FCC 5G B4 MASK.csv 3m  Vertical
         : RBW:1000kHz VBW:3000kHz SWT:Auto DET:Positive
EUT      : GA-RT0001
Mode     : Wifi 5G Mask B4 802.11HT40 Low Ch
Note     :
```

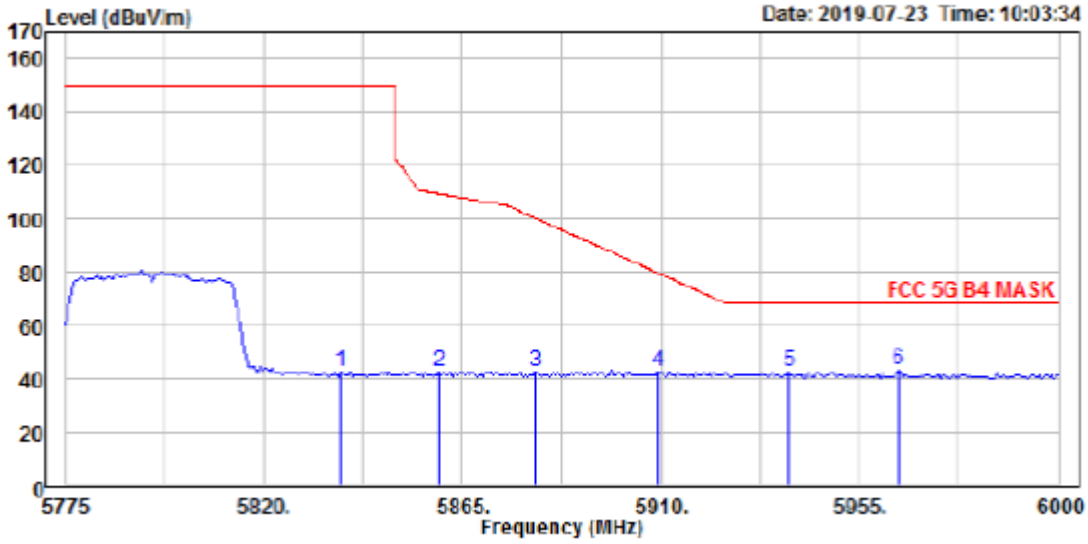
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1 PP	5607.700	51.37	-13.13	38.24	68.20	-29.96	Vertical
2	5621.700	51.16	-13.16	38.00	68.20	-30.20	Vertical
3	5645.500	50.72	-13.20	37.52	68.20	-30.68	Vertical
4	5659.150	51.05	-13.22	37.83	75.00	-37.17	Vertical
5	5675.600	50.27	-13.25	37.02	87.18	-50.16	Vertical
6	5691.000	50.37	-13.27	37.10	98.56	-61.46	Vertical



Condition: limit\FCC\FCC 5G B4 MASK.csv 3m Horizontal
: RBW:1000kHz VBW:3000kHz SWT:Auto DET:Positive
EUT : GA-RT0001
Mode : Wifi 5G Mask B4 802.11HT40 Low Ch
Note :

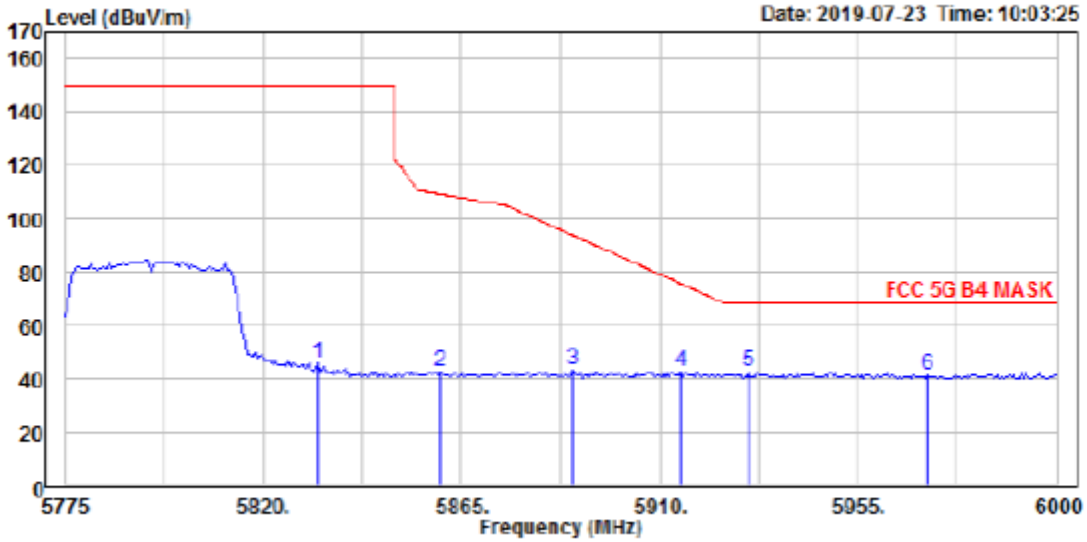
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	PP 5604.900	51.29	-13.08	38.21	68.20	-29.99	Horizontal
2	5628.000	51.28	-13.12	38.16	68.20	-30.04	Horizontal
3	5640.600	50.94	-13.14	37.80	68.20	-30.40	Horizontal
4	5653.900	50.93	-13.17	37.76	71.10	-33.34	Horizontal
5	5672.800	50.85	-13.20	37.65	85.11	-47.46	Horizontal
6	5681.200	50.31	-13.22	37.09	91.33	-54.24	Horizontal

Operation Mode	TX CH High	Test Date	2019/05/09
Channel Number	5795MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



Condition: limit\FCC\FCC 5G B4 MASK.csv 3m Vertical
: RBW:1000kHz VBW:3000kHz SWT:Auto DET:Positive
EUT : GA-RT0001
Mode : Wifi 5G Mask B4 802.11HT40 High Ch
Note :

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	5837.550	56.44	-13.52	42.92	150.00	-107.08	Vertical
2	5859.600	55.94	-13.56	42.38	109.51	-67.13	Vertical
3	5881.650	56.43	-13.59	42.84	100.26	-57.42	Vertical
4	5909.550	56.25	-13.64	42.61	79.60	-36.99	Vertical
5	5939.250	56.17	-13.68	42.49	68.20	-25.71	Vertical
6 PP	5964.000	56.83	-13.72	43.11	68.20	-25.09	Vertical

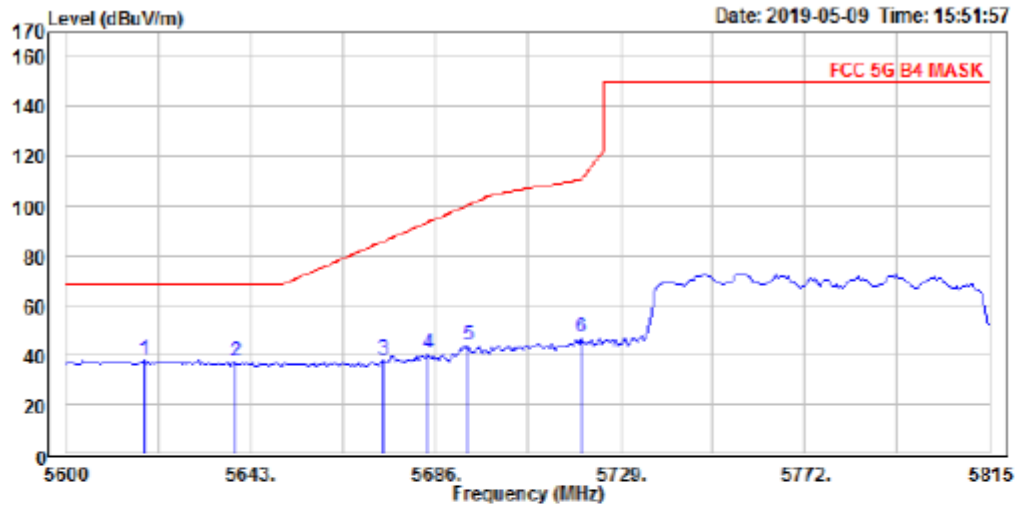


Condition: limit\FCC\FCC 5G B4 MASK.csv 3m Horizontal
: RBW:1000kHz VBW:3000kHz SWT:Auto DET:Positive
EUT : GA-RT0001
Mode : Wifi 5G Mask B4 802.11HT40 High Ch
Note :

		Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1		5832.150	59.55	-13.47	46.08	150.00	-103.92	Horizontal
2		5860.050	56.47	-13.52	42.95	109.38	-66.43	Horizontal
3		5890.200	56.76	-13.57	43.19	93.92	-50.73	Horizontal
4		5914.950	56.54	-13.62	42.92	75.61	-32.69	Horizontal
5	PP	5930.250	56.05	-13.64	42.41	68.20	-25.79	Horizontal
6		5970.750	55.23	-13.71	41.52	68.20	-26.68	Horizontal

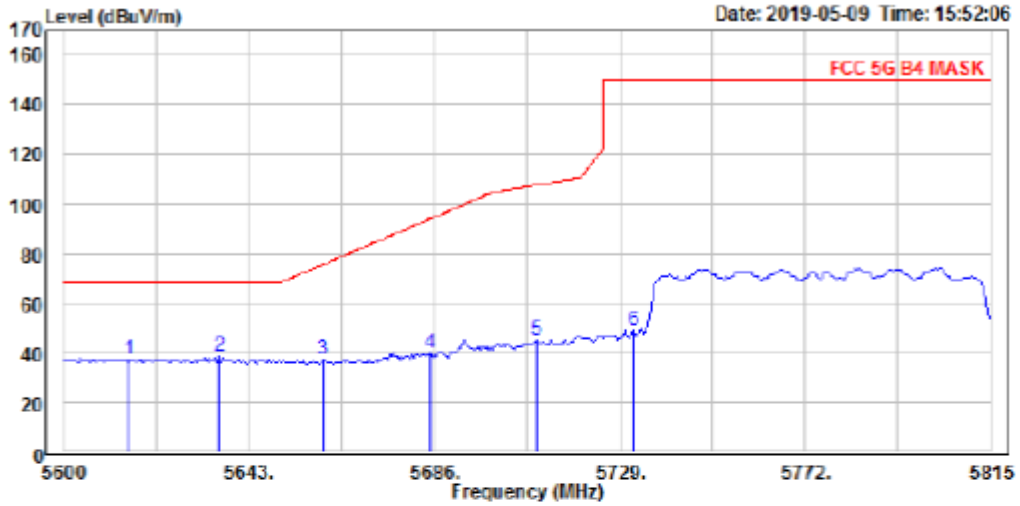
Band Edges test (Band UNII-3, 802.11ac VHT80 mode) –Radiated

Operation Mode	TX CH Low	Test Date	2019/05/09
Channel Number	5775 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %




```
Condition: limit\FCC\FCC 5G B4 MASK.csv 3m  Vertical
         : RBW:1000kHz VBW:3000kHz SWT:Auto DET:Positive
EUT      : GA-RT0001
Mode     : Wifi 5G Mask B4 802.11AC80 Low Ch
Note     :
```

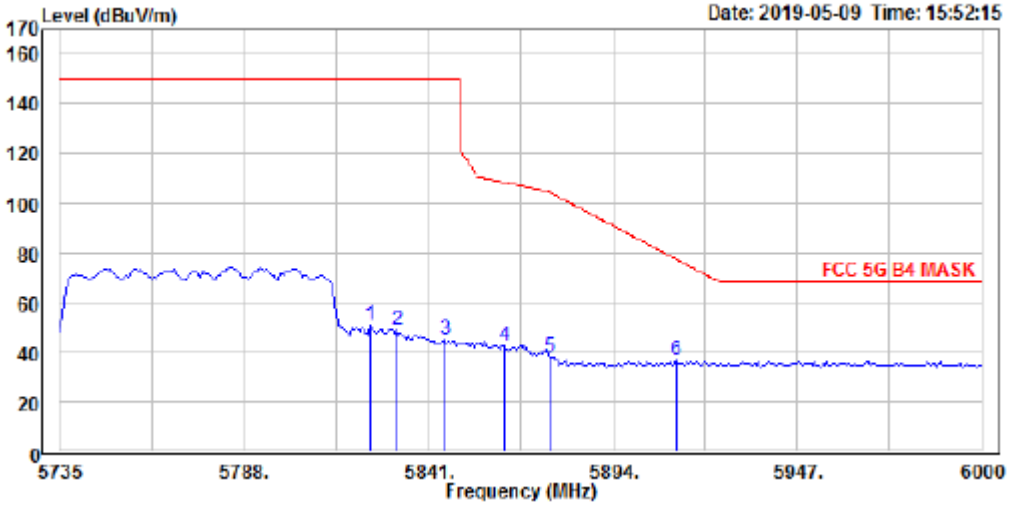
		Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	PP	5618.060	51.03	-13.15	37.88	68.20	-30.32	Vertical
2		5639.560	50.48	-13.19	37.29	68.20	-30.91	Vertical
3		5673.960	51.07	-13.25	37.82	85.97	-48.15	Vertical
4		5684.280	53.82	-13.26	40.56	93.60	-53.04	Vertical
5		5693.740	57.48	-13.28	44.20	100.59	-56.39	Vertical
6		5719.970	60.53	-13.32	47.21	110.79	-63.58	Vertical



Condition: limit\FCC\FCC 5G B4 MASK.csv 3m Horizontal
: RBW:1000kHz VBW:3000kHz SWT:Auto DET:Positive
EUT : GA-RT0001
Mode : Wifi 5G Mask B4 802.11AC80 Low Ch
Note :

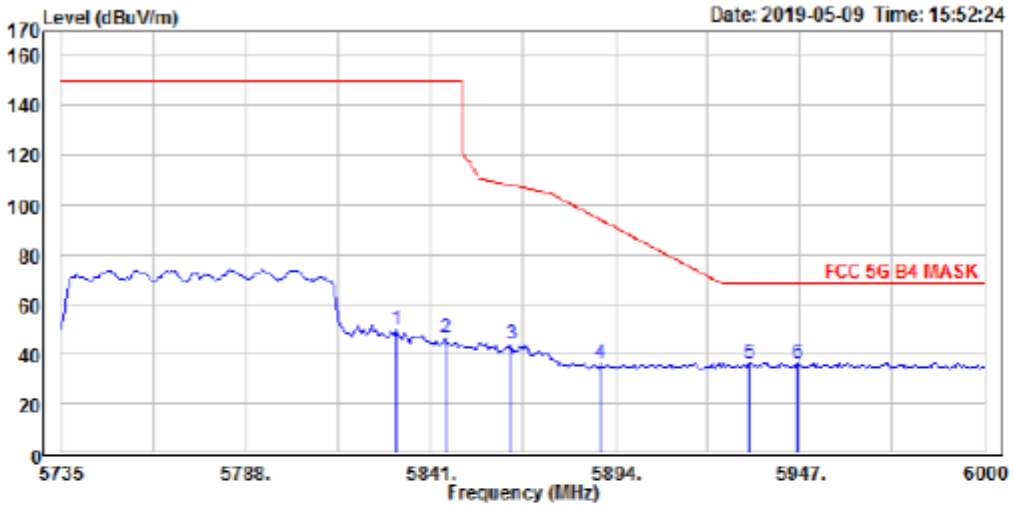
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	5615.050	50.86	-13.10	37.76	68.20	-30.44	Horizontal
2 PP	5636.120	51.65	-13.14	38.51	68.20	-29.69	Horizontal
3	5660.200	50.53	-13.18	37.35	75.77	-38.42	Horizontal
4	5685.140	53.27	-13.22	40.05	94.24	-54.19	Horizontal
5	5709.650	58.51	-13.27	45.24	107.90	-62.66	Horizontal
6	5732.010	62.60	-13.30	49.30	150.00	-100.70	Horizontal

Operation Mode	TX CH High	Test Date	2019/05/20
Channel Number	5795MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



Condition: limit\FCC\FCC 5G B4 MASK.csv 3m Vertical
: RBW:1000kHz VBW:3000kHz SWT:Auto DET:Positive
EUT : GA-RT0001
Mode : Wifi 5G Mask B4 802.11AC80 High Ch
Note :

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	5824.040	64.56	-13.50	51.06	150.00	-98.94	Vertical
2	5831.990	62.59	-13.51	49.08	150.00	-100.92	Vertical
3	5845.770	58.59	-13.53	45.06	150.00	-104.94	Vertical
4	5862.730	56.52	-13.56	42.96	108.63	-65.67	Vertical
5	5875.980	51.91	-13.58	38.33	104.47	-66.14	Vertical
6 PP	5912.020	50.38	-13.64	36.74	77.78	-41.04	Vertical



Condition: limit\FCC\FCC 5G B4 MASK.csv 3m Horizontal
: RBW:1000kHz VBW:3000kHz SWT:Auto DET:Positive
EUT : GA-RT0001
Mode : Wifi 5G Mask B4 802.11AC80 High Ch
Note :

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Pol/Phase
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	5830.930	63.16	-13.47	49.69	150.00	-100.31	Horizontal
2	5845.240	59.87	-13.50	46.37	150.00	-103.63	Horizontal
3	5864.320	57.56	-13.53	44.03	108.19	-64.16	Horizontal
4	5889.760	49.77	-13.57	36.20	94.25	-58.05	Horizontal
5 PP	5932.690	50.16	-13.65	36.51	68.20	-31.69	Horizontal
6	5946.470	50.14	-13.67	36.47	68.20	-31.73	Horizontal

10. Transmission in the Absence of Data

10.1. Standard Applicable

According to §15.407(c)

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

10.2. Result:

Pass, the device is compliance with 802.11 a/ b/g/n ac standard, the short control signal is appear during no transmission period.

11. Frequency Stability

11.1. Standard Applicable

According to §15.407 (g) Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

11.2. Result

Test frequency : 5180 MHz

Temperature test				
Power Supply	Environment	Frequency	Delta (MHz)	frequency drift
Vdc	Temperature (℃)	(MHz)		(PPM)
12	-20	5180.021800	0.021800	4.21
	-10	5180.024700	0.024700	4.77
	0	5180.025900	0.025900	5.00
	10	5180.031400	0.031400	6.06
	20	5180.031600	0.031600	6.10
	30	5180.034900	0.034900	6.74
	40	5180.034700	0.034700	6.70
	50	5180.038700	0.038700	7.47

voltage test				
Power Supply	Environment	Frequency	Delta (KHz)	frequency drift
Vdc	Temperature (℃)	(MHz)		(PPM)
12	20	5180.025800	0.02580	4.98
13.2	20	5180.014600	0.01460	2.82
10.8	20	5180.032100	0.03210	6.20

12. Antenna Requirement

12.1. Standard Applicable

According to §15.203, Antenna requirement.

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 Sections 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 Section 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.

12.2. Antenna Connected Construction

The directional gains of antenna used for transmitting is 3.8 dBi, and the antenna type is PIFA antenna which is designed with permanent attachment and no consideration of replacement. Please see EUT photo for details.

13. TPC and DFS Measurement

13.1. TPC: Standard Applicable

According to §15.407(h)(1), Transmit power control (TPC). U-NII devices operating in the 5.25-5.35 GHz band and the 5.47-5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

13.2. DFS: Standard Applicable

According to §15.407(h)(2), Radar Detection Function of Dynamic Frequency Selection (DFS). U-NII devices operating in the 5.25-5.35 GHz and 5.47-5.725 GHz bands shall employ a DFS radar detection.

13.2.1. Limit

Table 1: Applicability of DFS requirements prior to use of a channel

Requirement	Operational Mode		
	Slave	Client(without radar detection)	Client(with radar detection)
Non-occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
Uniform Spreading	Yes	Not required	Not required
U-NII Detection Band-width	Yes	Not required	Yes

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode		
	Slave	Client(without radar detection)	Client(with radar detection)
DFS Detection Threshold	Yes	Not required	Yes
Channel Closing Transmis-sion Time	Yes	Yes	Yes
Channel Move Time	Yes	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required	Yes

Refer to KDB Number: 905462 APPENDIX B COMPLIANCE MEASUREMENT PROCEDURES FOR UNLICENSED-NATIONAL INFORMATION INFRASTRUCTURE DEVICES OPERATING IN THE 5.25-5.35 GHz AND 5.47-5.725 GHz BANDS INCORPORATING DYNAMIC FREQUENCY SELECTION.

Table 3: Interference Threshold values, Master or Client incorporating In-Service Monitoring

Maximum Transmit Power	Value (see note)
≥ 200 milliwatt	-64 dBm
< 200 milliwatt	-62 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.	

Table 4: DFS Response requirement values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 80% of the U-NII 99% transmission power bandwidth. See Note 3.

Note 1: The instant that the *Channel Move Time* and the *Channel Closing Transmission Time* begins is as follows:

- For the Short Pulse Radar Test Signals this instant is the end of the *Burst*.
- For the Frequency Hopping radar Test Signal, this instant is the end of the last radar *Burst* generated.
- For the Long Pulse Radar Test Signal this instant is the end of the 12 second period defining the *Radar Waveform*.

Note 2: The *Channel Closing Transmission Time* is comprised of 200 milliseconds starting at the beginning of the *Channel Move Time* plus any additional intermittent control signals required to facilitate a *Channel* move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

Note 3: During the *U-NII Detection Bandwidth* detection test, radar type 1 is used and for each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

Table 5: Radar Test Waveforms

Short Pulse Radar

Radar Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Trials
1	1	1428	18	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120

A minimum of 30 unique waveforms are required for each of the Short Pulse Radar Types 2 through 4. For Short Pulse Radar Type 1, the same waveform is used a minimum of 30 times. If more than 30 waveforms are used for Short Pulse Radar Types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms

Long Pulse Radar

Radar Type	Pulse Width (μsec)	Chirp Width (MHz)	PRI (μsec)	Number of Pulses per *Burst*	Number of *Bursts*	Minimum Percentage of Successful Detection	Minimum Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

The parameters for this waveform are randomly chosen. Thirty unique waveforms are required for the Long Pulse Radar Type waveforms. If more than 30 waveforms are used for the Long Pulse Radar Type waveforms, then each additional waveform must also be unique and not repeated from the previous waveforms.

Frequency Hopping Radar

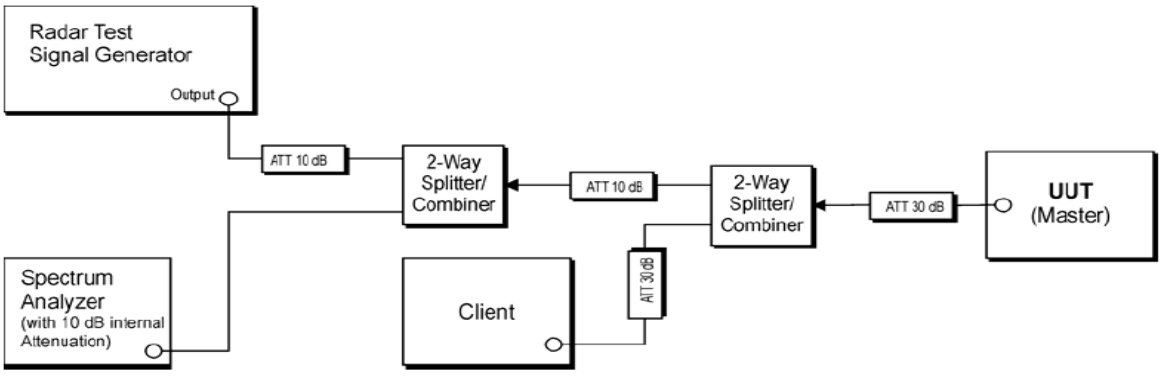
Radar Type	Pulse Width (μsec)	PRI (μsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	9	.333	300	70%	30

For the Frequency Hopping Radar Type, the same *Burst* parameters are used for each waveform. The hopping sequence is different for each waveform and a 100-length segment is selected from the hopping sequence defined by the following algorithm: 3

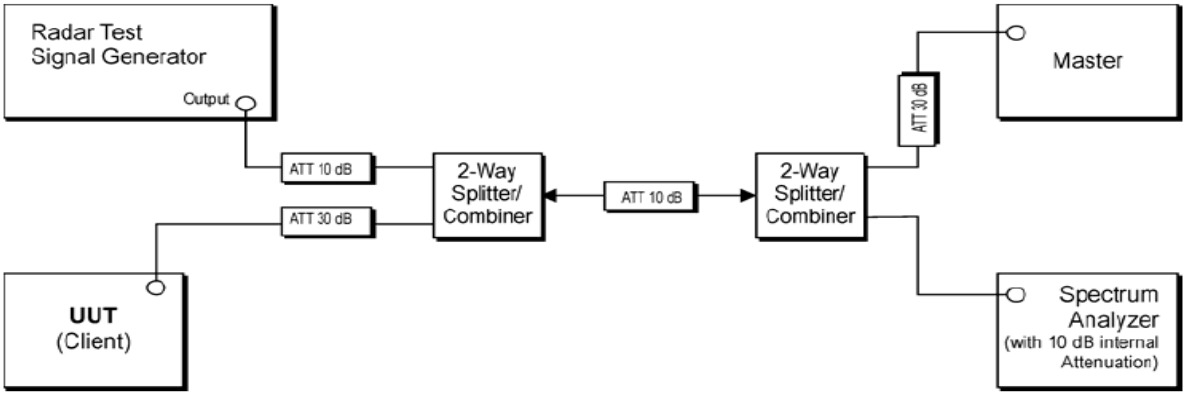
The first frequency in a hopping sequence is selected randomly from the group of 475 integer frequencies from 5250 – 5724 MHz. Next, the frequency that was just chosen is removed from the group and a frequency is randomly selected from the remaining 474 frequencies in the group. This process continues until all 475 frequencies are chosen for the set. For selection of a random frequency, the frequencies remaining within the group are always treated as equally likely.

13.2.2. Test Setup

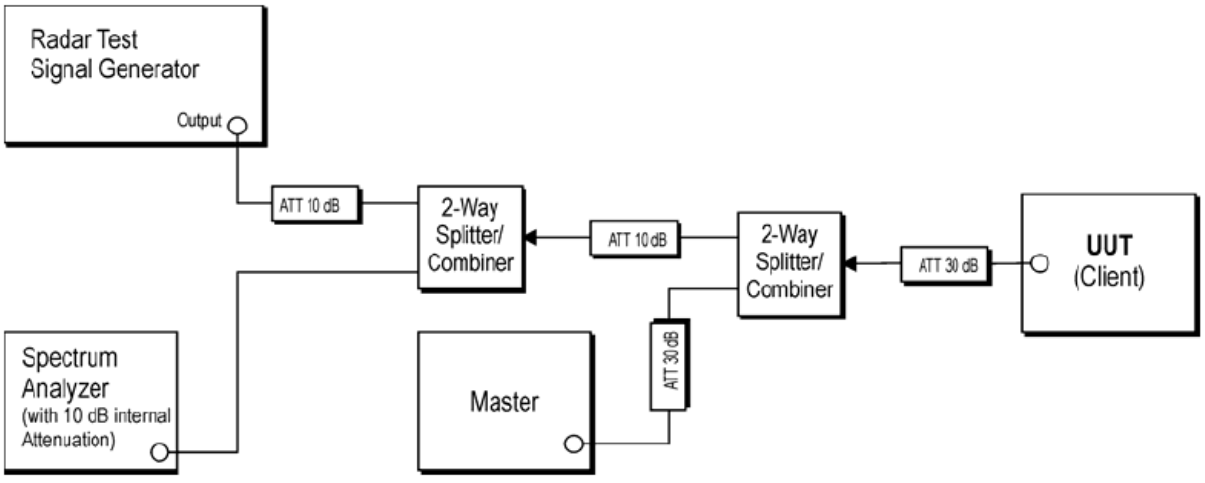
Setup for Master with injection at the Master



Setup for Client with injection at the Master



Setup for Client with injection at the Client



Note: device under test are configured with AP as IP based by streaming MPEG video, 30 frames per seconds

13.3. Test Equipment Used:

Location Conducted	Equipment Name	Brand	Model	S/N	Last Cal. Date	Next Cal. Date
Conducted (DFS)	Signal Generator	Agilent	E4438C	MY49071550	01/16/2019	01/16/2020
Conducted (DFS)	Signal Generator	Agilent	E4438C	MY49071550	01/16/2020	01/16/2021
Conducted (DFS)	Signal Generator	Keysight	N5182B	MY53052399	01/09/2019	01/09/2020
Conducted (DFS)	Signal Generator	Keysight	N5182B	MY53052399	01/09/2020	01/09/2021
Conducted (DFS)	Spectrum analyzer	Keysight	N9010A	MY56070257	10/05/2019	10/05/2020
Conducted (DFS)	AP Router	ASUS	RTAC66U	FTX1220905D	NA	NA
Conducted (DFS)	USB Adapter	D-Link	DWA-182	QBYS1D8000073	NA	NA
Conducted (DFS)	Test Box	Keysight	AD211A	NA	NA	NA
Conducted (DFS)	Test Box	Keysight	AD191A	NA	NA	NA
Conducted (DFS)	Direction Coupler	Krytar	1821S	1461	NA	NA
Conducted (DFS)	Splitter	Mini-Circuits	ZN2PD-63-S	UU97201111	NA	NA
Conducted (DFS)	Attenuator	Woken	Watt-65m3502	11051601	NA	NA
Conducted (DFS)	Software	Agilent	Adaptive TEST	NA	NA	NA
Conducted (DFS)	Cable	Draka	NA	NA	NA	NA
Conducted (DFS)	Test Software	Keysight	N9607B DFS Radar Profiles	NA	NA	NA
Conducted (DFS)	Test Software	Keysight	ETSI Standard test system	NA	NA	NA

13.3.1. Description of EUT :

EUT operates over the 5250-5350MHz and 5470-5725MHz ranges and EUT is a slave device (client equipment) w/o radar detection and DFS capability.

The EUT utilizes the 802.11n architecture, with a nominal channel bandwidth of 40MHz WLAN traffic is generated by streaming the mpeg file from the master to slave in full monitor video mode using the media player.

The rated output power of the master unit is >23dBm(EIRP).therefore the required interference threshold level is -64dBm. The master device as employed for the applicable DFS test is ASUS router whose FCC ID= YOR-RT1900AC

13.4. Test results

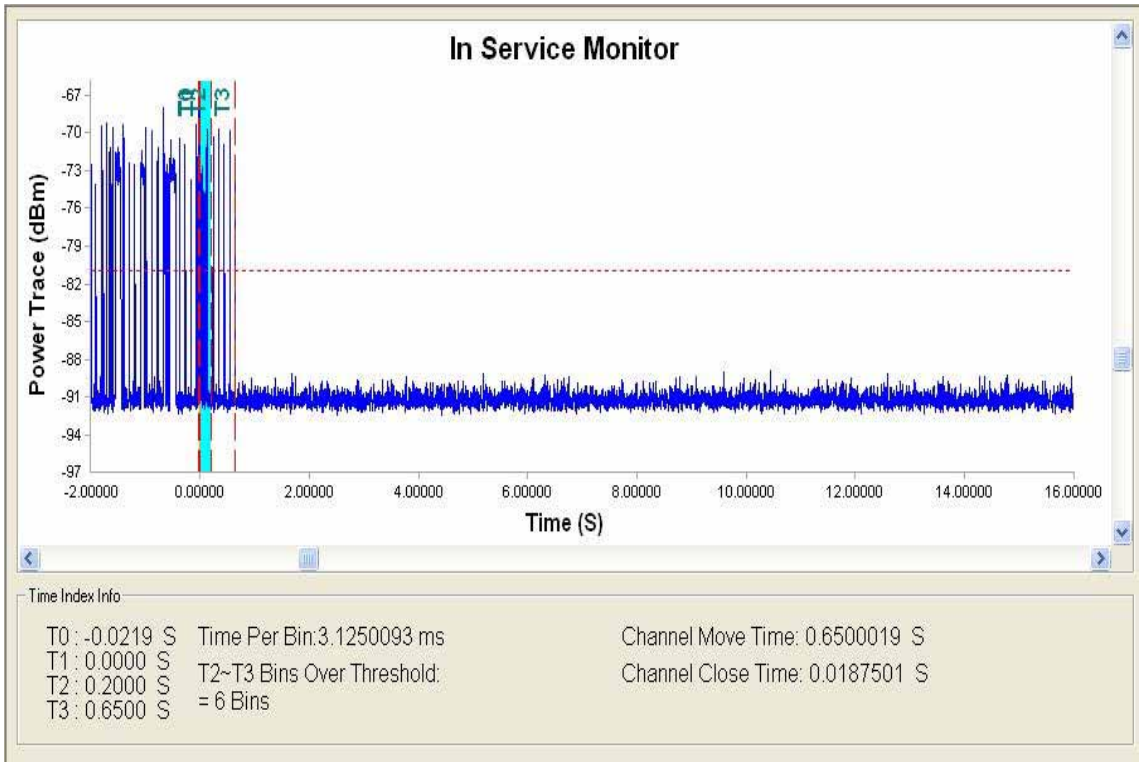
Applicability of DFS requirements during normal operation

Requirement	Operational Mode: Client(without radar detection)	
	Test Result	**Remark**
Non-occupancy Period	No transmission in 30mins. (test results), pass (Remark)	Pass
DFS Detection Threshold	N/A	N/A
Channel Closing Transmission Time	Less than 200ms, Refer to next page for plots.	Pass
Channel Move Time	Less than 10s, Refer to next page for plots.	Pass
U-NII Detection Bandwidth	N/A	N/A

Input Level to Master AP= -64dBm

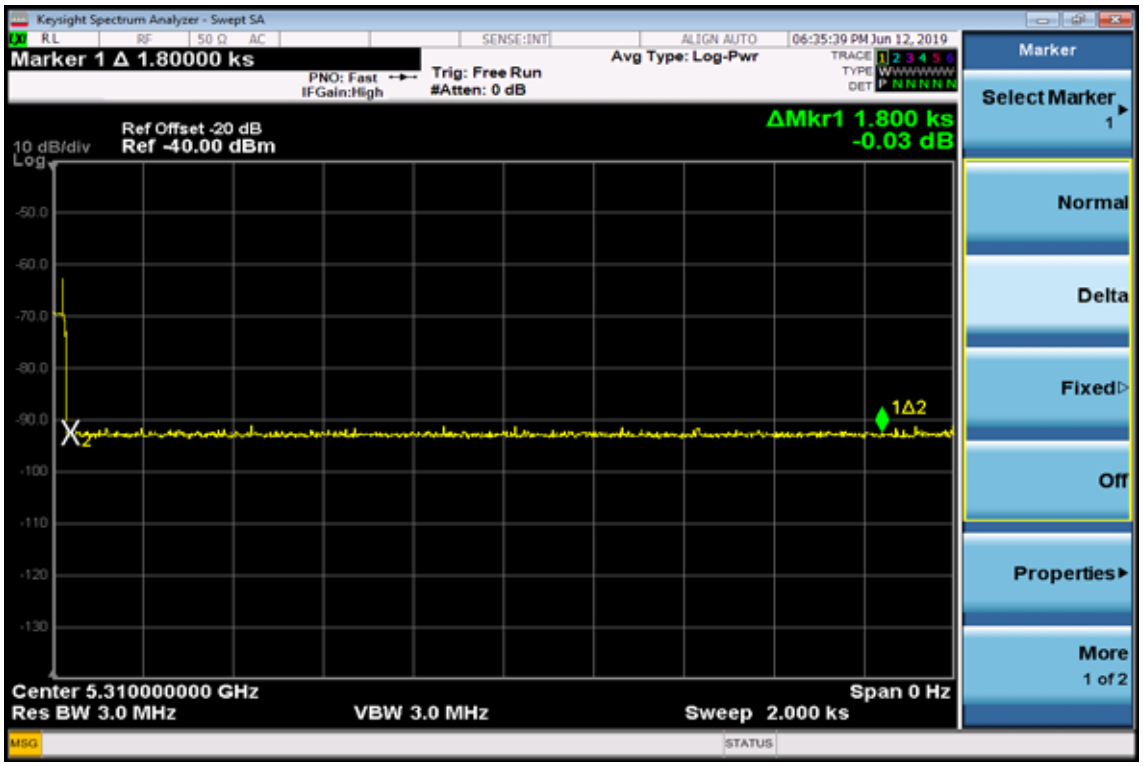
5250MHz ~ 5350MHz

Radar Type 1 Channel Move & Closing Transmission Time



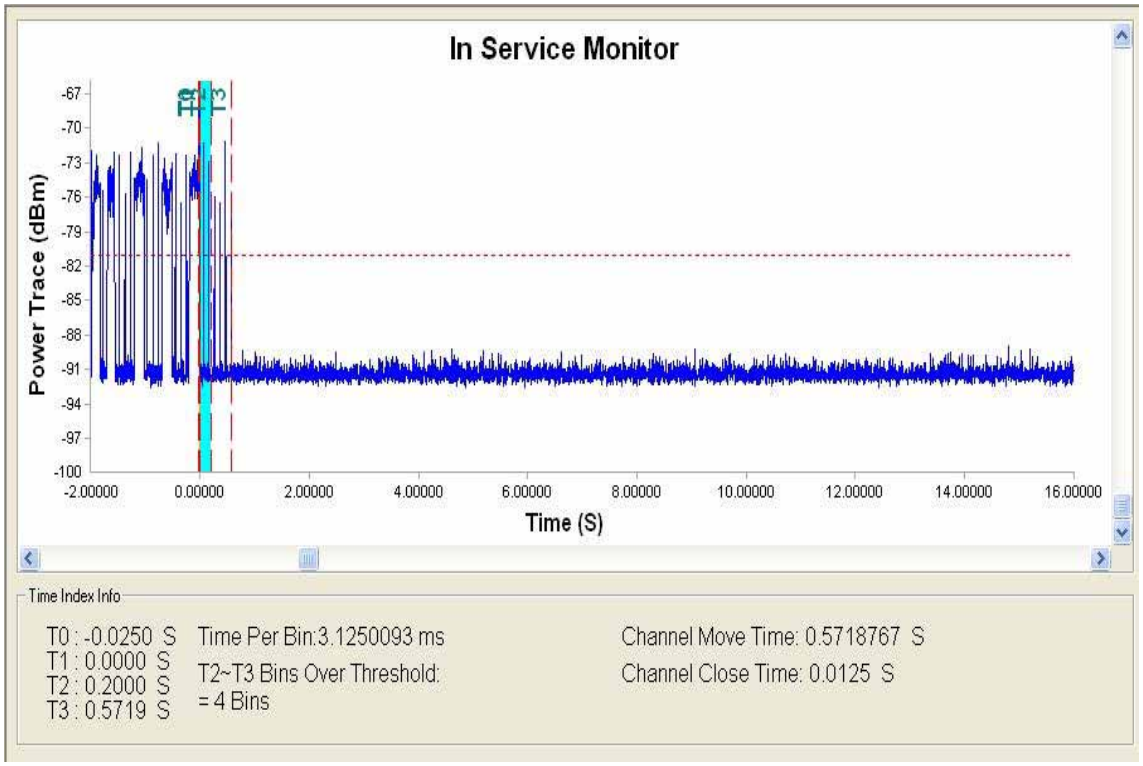
Note: the unit of time per bin is millisecond

Non-occupancy Period



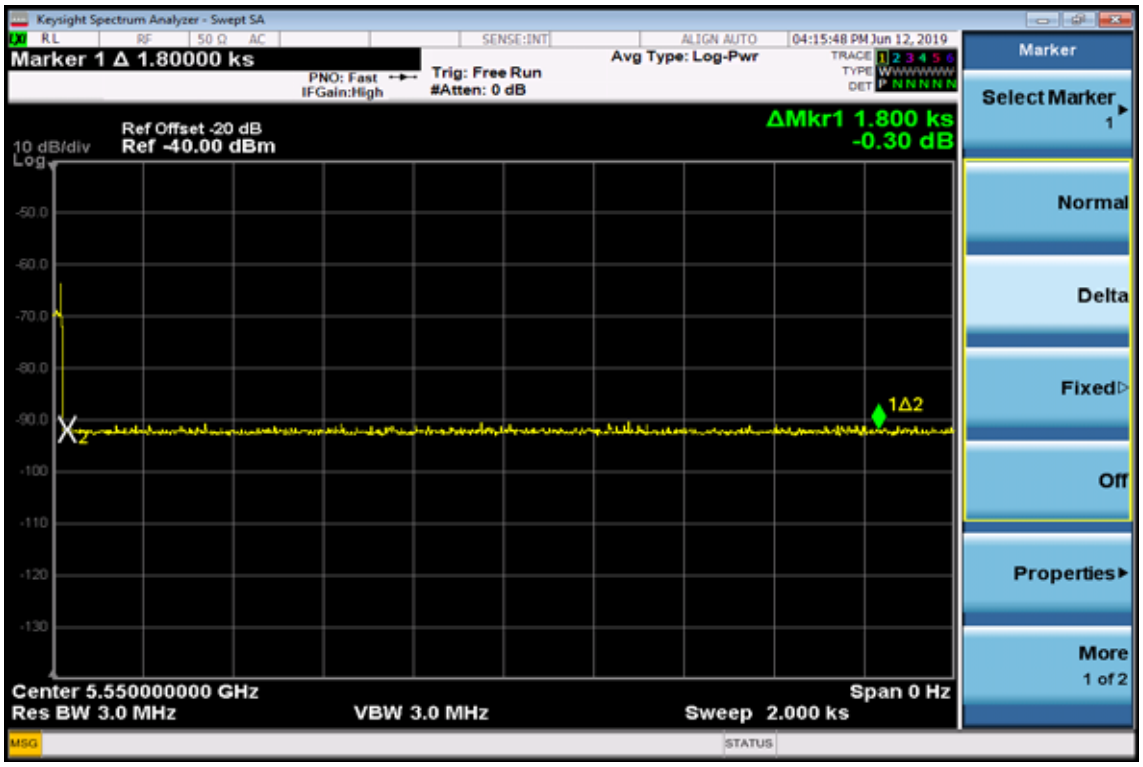
5500MHz ~ 5700MHz

Radar Type 1 Channel Move & Closing Transmission Time



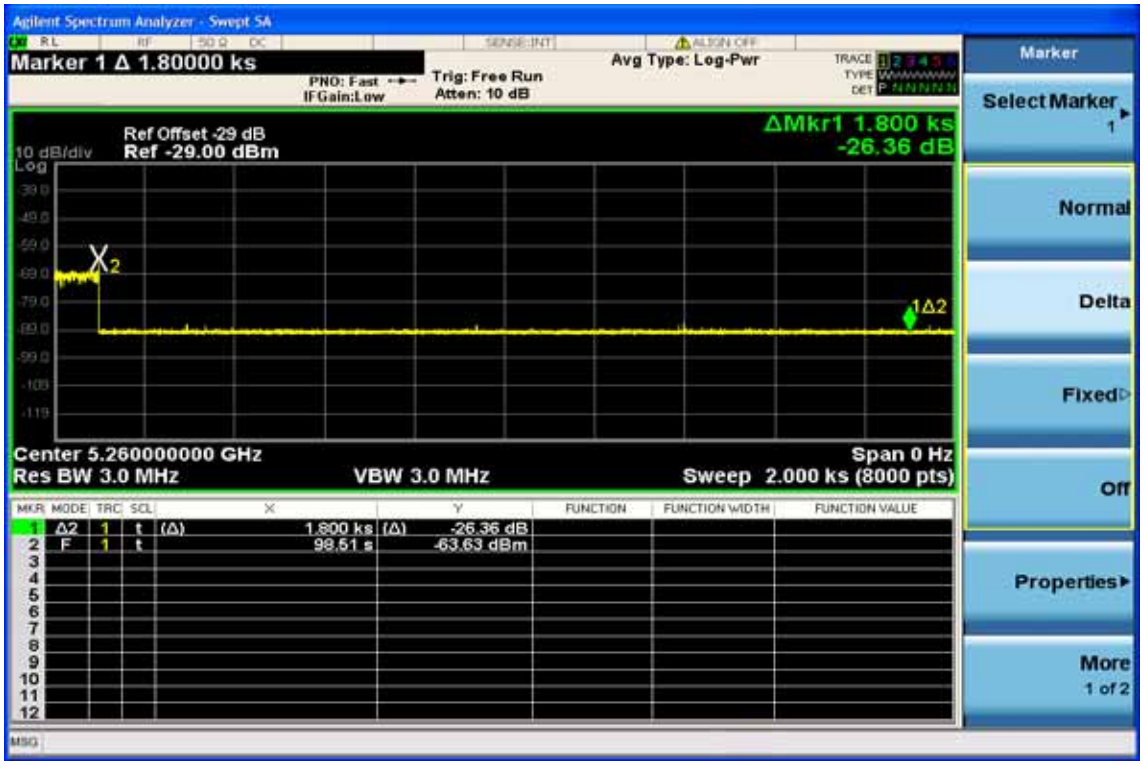
Note: the unit of time per bin is millisecond

Non-occupancy Period



Band 2

WLAN traffic



Band 3

WLAN traffic