

7.3.4 Power Spectral Density – U-NII-3 Band

FCC §15.407(a)

Test Mode : Set to Lowest channel, Middle channel and Highest channel

Result

802.11a mode

Ch	Frequency (MHz)	Measured PSD (dBm/500kHz)	Duty Factor (dB)	*Maximum PSD (dBm/500kHz)	FCC Limit (dBm/500kHz)
149	5 745	-1.87	0.44	-1.43	30.00
157	5 785	-1.71	0.44	-1.27	30.00
165	5 825	-2.24	0.44	-1.80	30.00

802.11n(20 MHz) mode

Ch	Frequency (MHz)	Measured PSD (dBm/500kHz)	Duty Factor (dB)	*Maximum PSD (dBm/500kHz)	FCC Limit (dBm/500kHz)
149	5 745	-2.38	0.39	-1.99	30.00
157	5 785	-2.06	0.39	-1.67	30.00
165	5 825	-2.57	0.39	-2.18	30.00

802.11ac(20 MHz) mode

Ch	Frequency (MHz)	Measured PSD (dBm/500kHz)	Duty Factor (dB)	*Maximum PSD (dBm/500kHz)	FCC Limit (dBm/500kHz)
149	5 745	-2.19	0.46	-1.73	30.00
157	5 785	-2.00	0.46	-1.54	30.00
165	5 825	-2.76	0.46	-2.30	30.00

802.11n(40 MHz) mode

Ch	Frequency (MHz)	Measured PSD (dBm/500kHz)	Duty Factor (dB)	*Maximum PSD (dBm/500kHz)	FCC Limit (dBm/500kHz)
151	5 755	-6.11	0.83	-5.28	30.00
159	5 795	-6.07	0.83	-5.24	30.00

802.11ac(40 MHz) mode

Ch	Frequency (MHz)	Measured PSD (dBm/500kHz)	Duty Factor (dB)	*Maximum PSD (dBm/500kHz)	FCC Limit (dBm/500kHz)
151	5 755	-5.96	0.92	-5.04	30.00
159	5 795	-5.84	0.92	-4.92	30.00

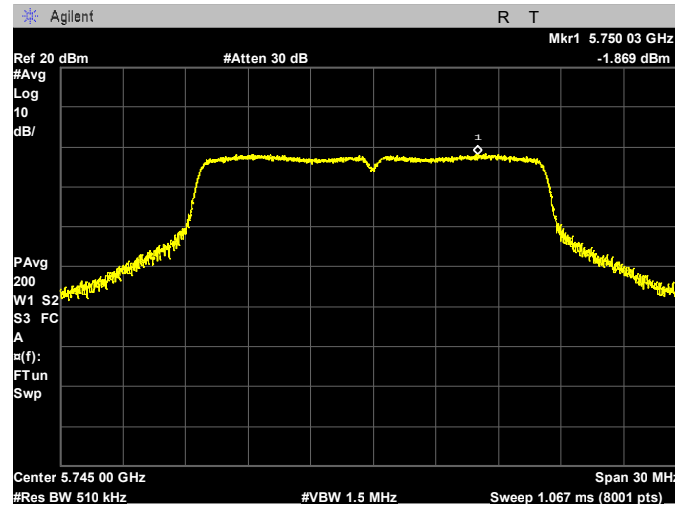
Notes:

- * Maximum PSD = Measured PSD + Duty Factor
- The following equation was used for spectrum offset:
Spectrum offset (dB) = Attenuator (dB) + Cable Loss (dB) + SMA Type Connector Loss (dB)

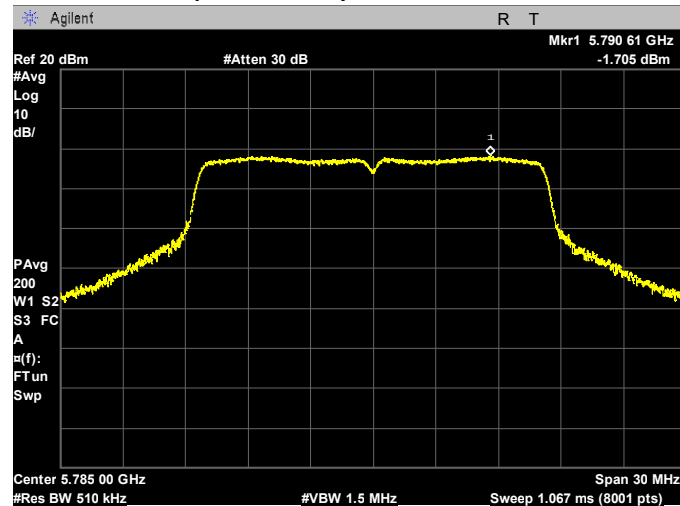
PLOTS OF EMISSIONS

802.11a mode

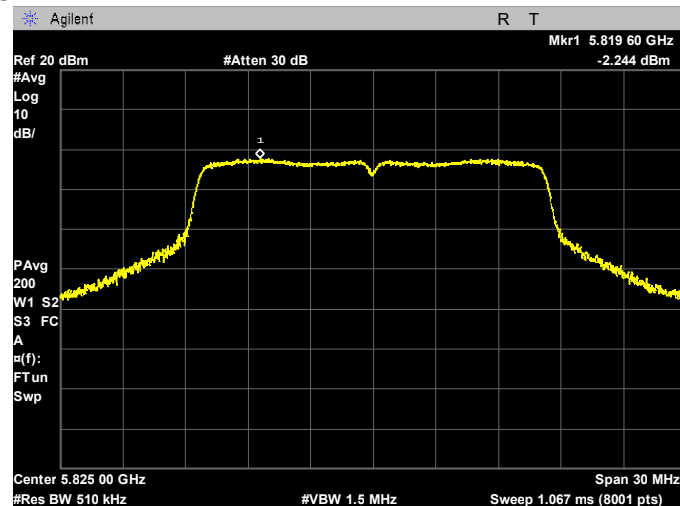
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

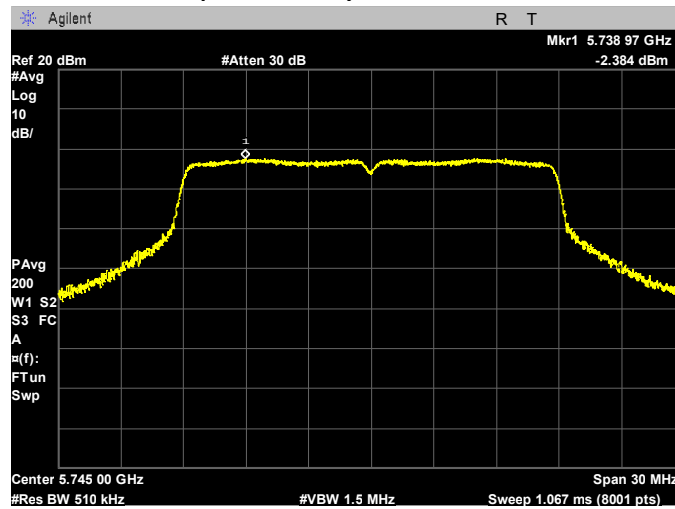


Highest Channel (5 825 MHz)

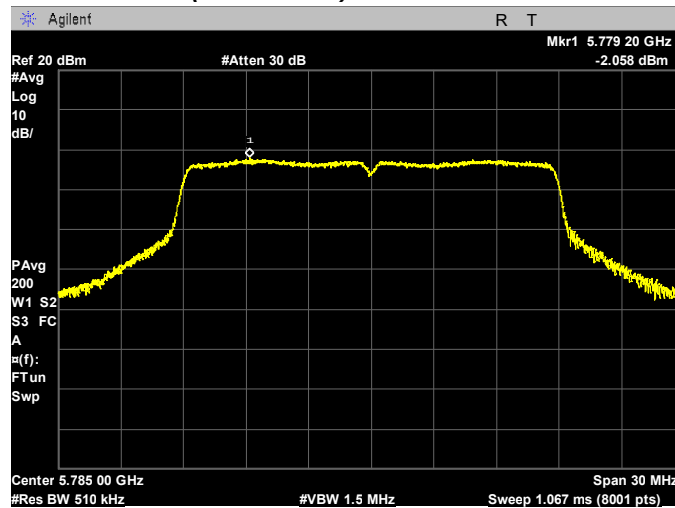


802.11n(20 MHz) mode

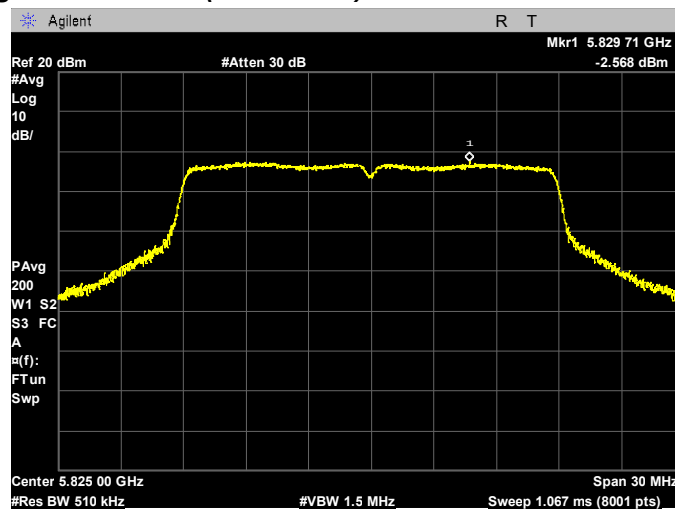
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

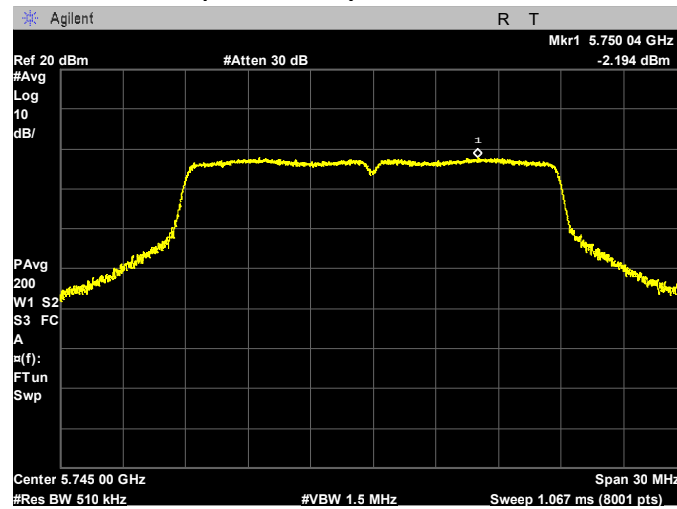


Highest Channel (5 825 MHz)

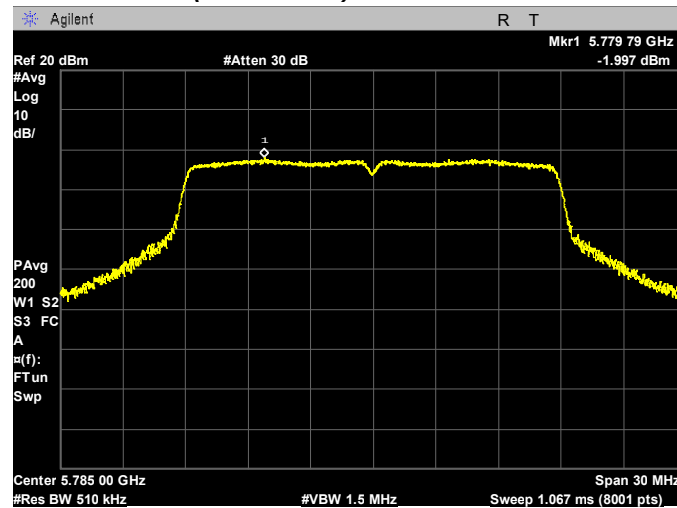


802.11ac(20 MHz) mode

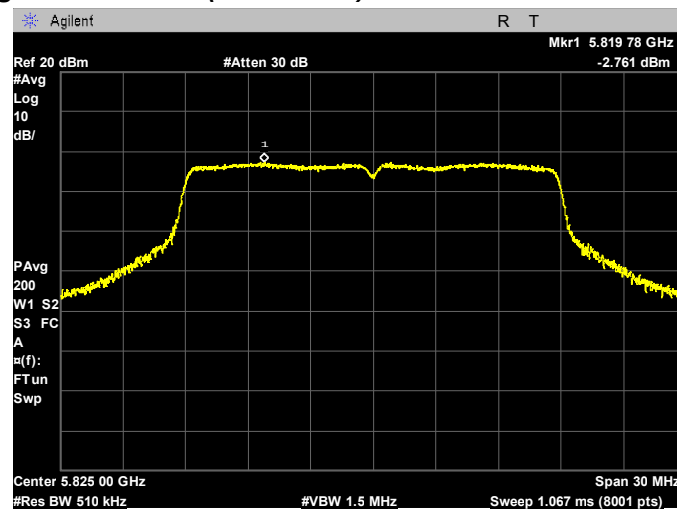
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

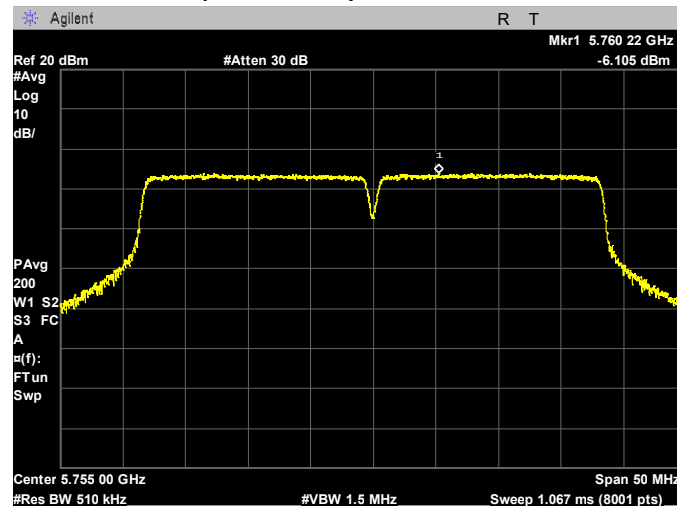


Highest Channel (5 825 MHz)

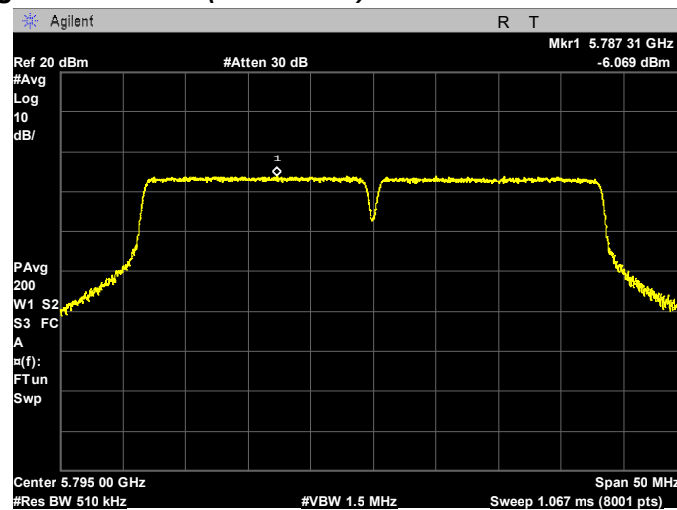


802.11n(40 MHz) mode

Lowest Channel (5 755 MHz)

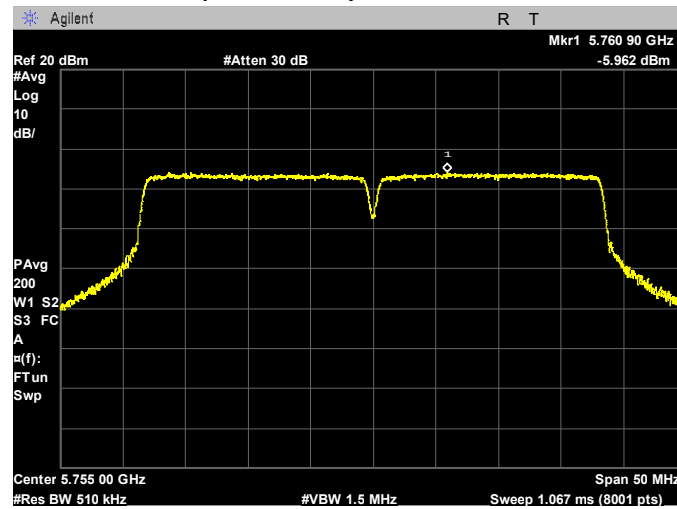


Highest Channel (5 795 MHz)

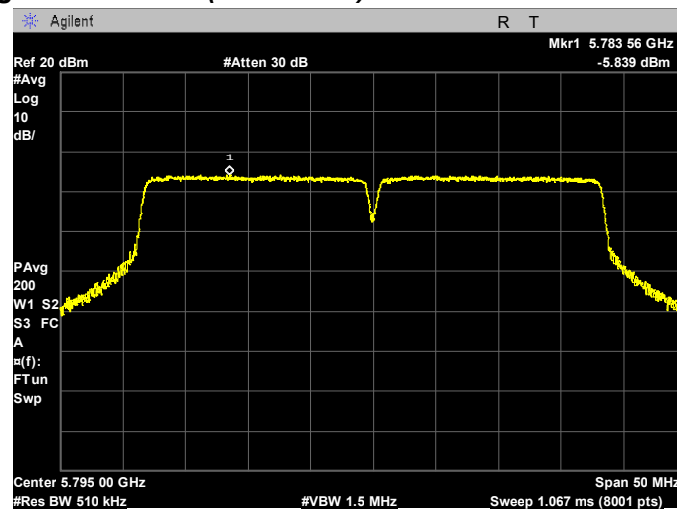


802.11ac(40 MHz) mode

Lowest Channel (5 755 MHz)



Highest Channel (5 795 MHz)



7.4 Radiated Spurious Emissions

7.4.1 Radiated Spurious Emissions – U-NII-1 Band

FCC §15.209, §15.407(b)

Test Mode : Set to Lowest channel, Middle channel and Highest channel

Result

802.11 a mode

Lowest channel (5 180 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
6 208.18	49.06	H	PK	6.8	55.86	68.20	12.34
6 208.87	40.58	H	AV	6.8	47.38	54.00	6.62
10 359.88	37.95	V	PK	17.9	55.85	68.20	12.35
10 359.74	32.19	V	AV	17.9	50.09	54.00	3.91

Middle channel (5 220 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
6 257.41	47.90	H	PK	7.1	55.00	68.20	13.20
6 256.56	40.87	H	AV	7.1	47.97	54.00	6.03
10 439.87	36.65	V	PK	18.5	55.15	68.20	13.05
10 439.79	31.37	V	AV	18.5	49.87	54.00	4.13

Highest channel (5 240 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
6 280.98	48.08	H	PK	7.0	55.08	68.20	13.12
6 280.73	41.32	H	AV	7.0	48.32	54.00	5.68
10 480.00	37.55	V	PK	18.5	56.05	68.20	12.15
10 479.90	33.12	V	AV	18.5	51.62	54.00	2.38

802.11 ac(20 MHz) mode

Lowest channel (5 180 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
6 207.68	49.09	H	PK	6.8	55.89	68.20	12.31
6 207.94	41.11	H	AV	6.8	47.91	54.00	6.09
10 359.76	35.67	V	PK	17.9	53.57	68.20	14.63
10 359.97	31.08	V	AV	18.0	49.08	54.00	4.92

Middle channel (5 220 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
6 256.06	50.30	H	PK	7.1	57.40	68.20	10.80
6 255.47	40.98	H	AV	7.1	48.08	54.00	5.92
10 440.17	37.88	V	PK	18.5	56.38	68.20	11.82
10 439.98	32.97	V	AV	18.5	51.47	54.00	2.53

Highest channel (5 240 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
6 279.78	49.35	H	PK	7.0	56.35	68.20	11.85
6 279.73	40.70	H	AV	7.0	47.70	54.00	6.30
10 479.88	37.63	V	PK	18.5	56.13	68.20	12.07
10 479.97	33.30	V	AV	18.5	51.80	54.00	2.20

802.11 ac(40 MHz) mode

Lowest channel (5 190 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
6 212.36	52.28	H	PK	6.8	59.08	68.20	9.12
6 210.72	43.86	H	AV	6.8	50.66	54.00	3.34
10 382.68	35.29	V	PK	18.1	53.39	68.20	14.81
10 379.81	30.16	V	AV	18.1	48.26	54.00	5.74

Highest channel (5 230 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
6 258.38	51.64	H	PK	7.1	58.74	68.20	9.46
6 258.32	43.84	H	AV	7.1	50.94	54.00	3.06
10 459.64	37.30	V	PK	18.5	55.80	68.20	12.40
10 459.87	31.68	V	AV	18.5	50.18	54.00	3.82

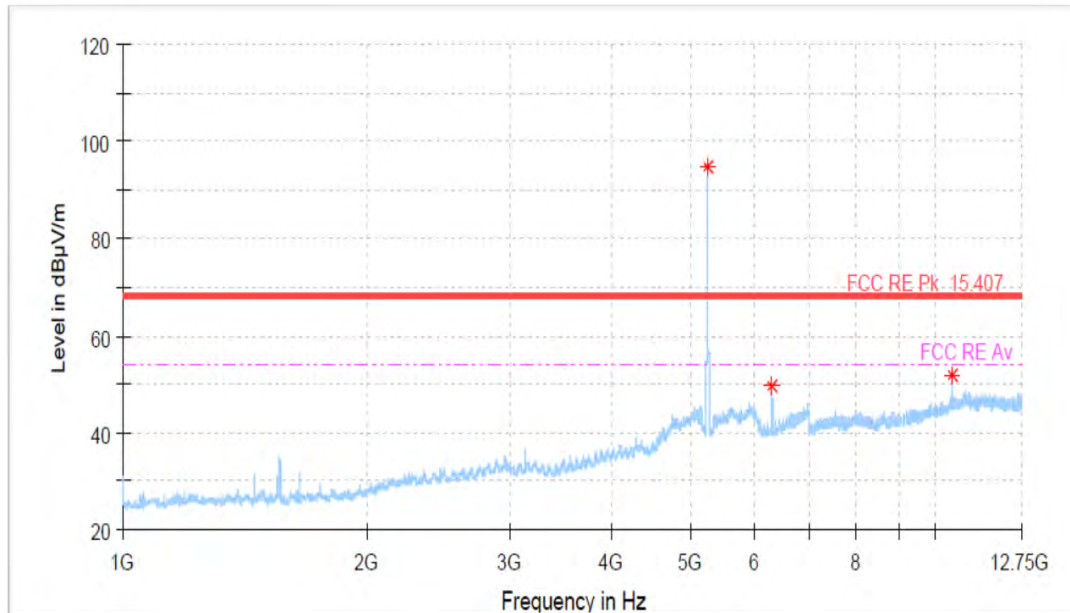
Notes:

- *Pol. : H = Horizontal, V = Vertical, Mode : PK = Peak, AV = Average
- **AF + CL + Amp. = Antenna Factor + Cable Loss + Amplifier.
- Nothing detected above 18GHz
- Other spurious was under 20 dB below Fundamental.
- The radiated emissions testing were made by rotating EUT through three orthogonal axes and rotating the receive antenna with horizontal, vertical polarization.
- Peak emissions were measured using RBW = 1 MHz, VBW = 3 MHz, Detector = Peak.
- Average emissions were measured using RBW = 1 MHz, VBW = 10 kHz, Detector = Peak.
- The spectrum was measured from 1 GHz to 10th harmonic and the worst-case emissions were reported.

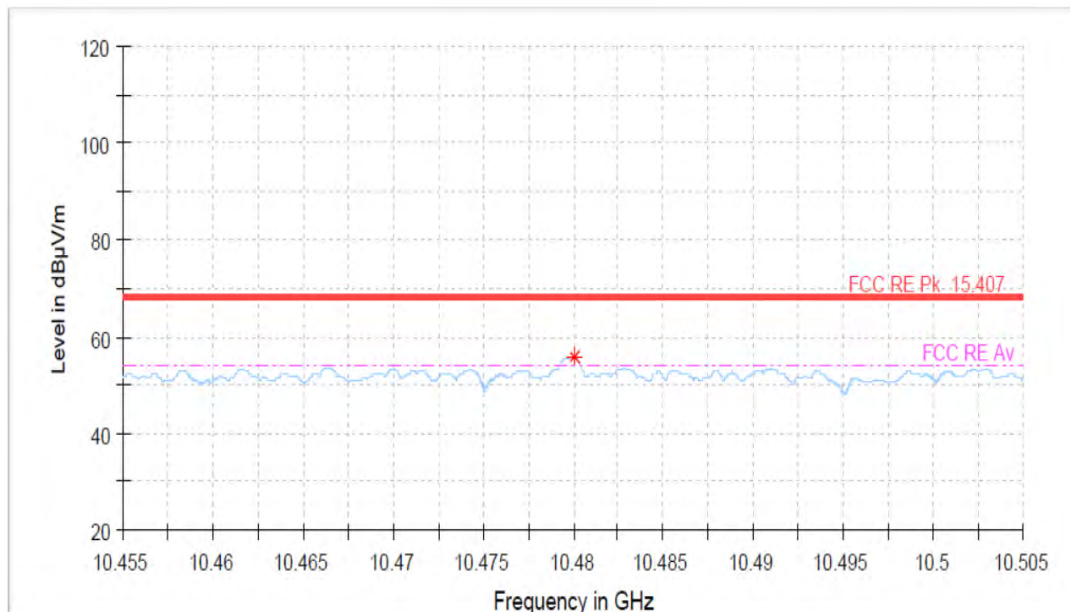
PLOTS OF EMISSIONS

Worst Case

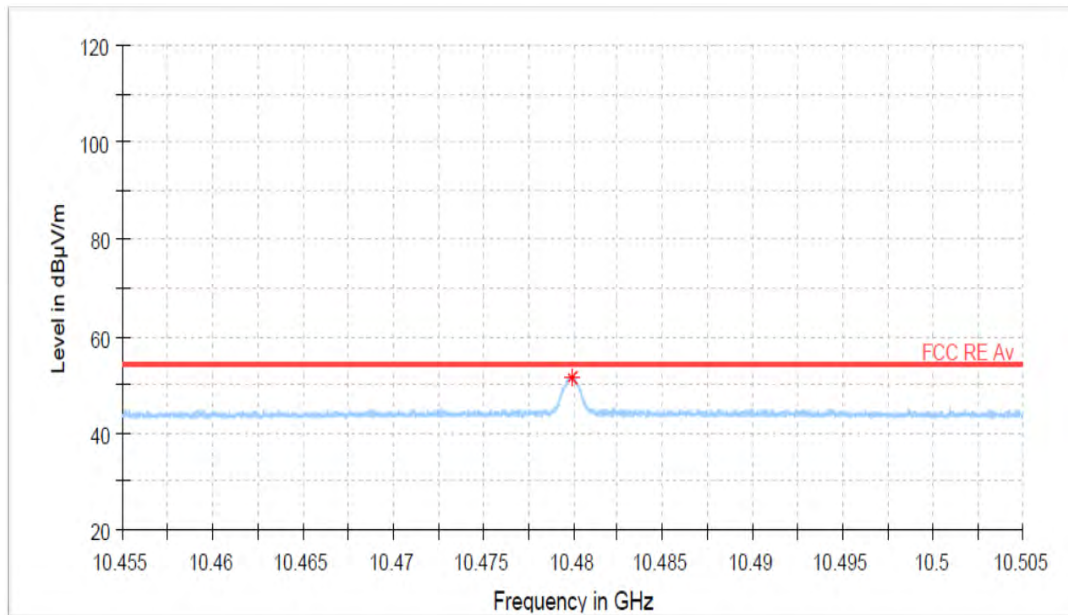
802.11 a mode Highest channel (5 240 MHz) : 1 GHz to 12.75 GHz_Peak



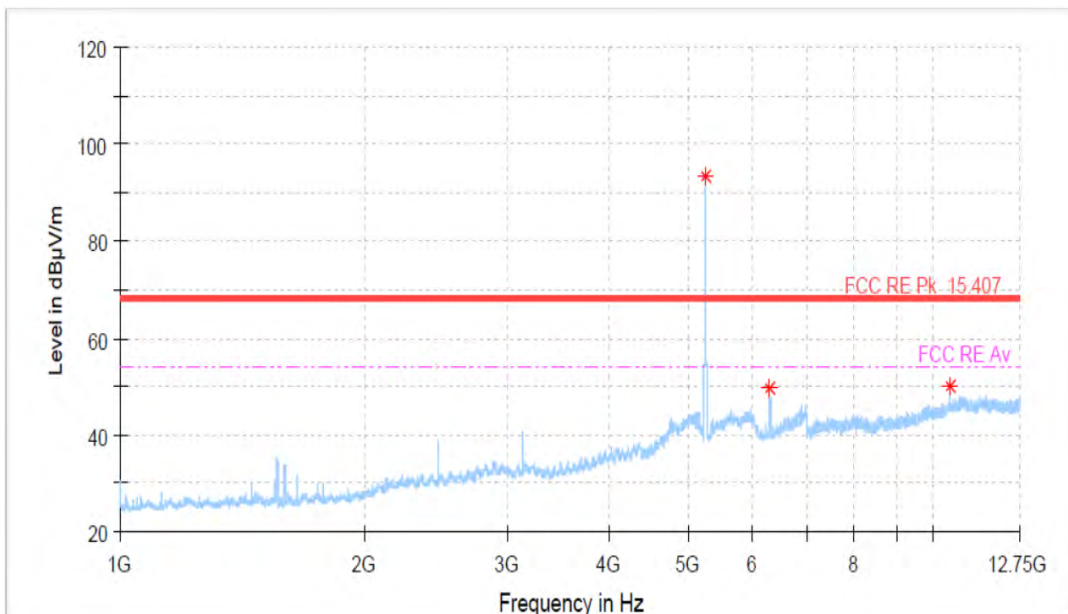
802.11 a mode Highest channel (5 240 MHz) : 10 480 MHz Zoom scan_Peak



802.11 a mode Highest channel (5 240 MHz) : 10 480 MHz Zoom scan_Average



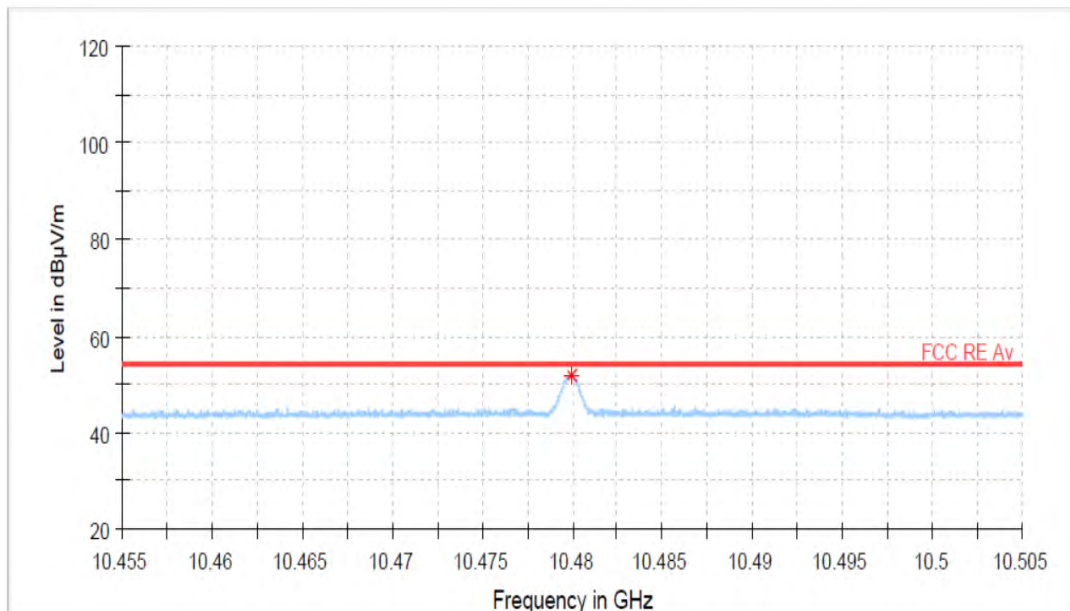
802.11 ac20 mode Highest channel (5 240 MHz) : 1 GHz to 12.75 GHz_Peak



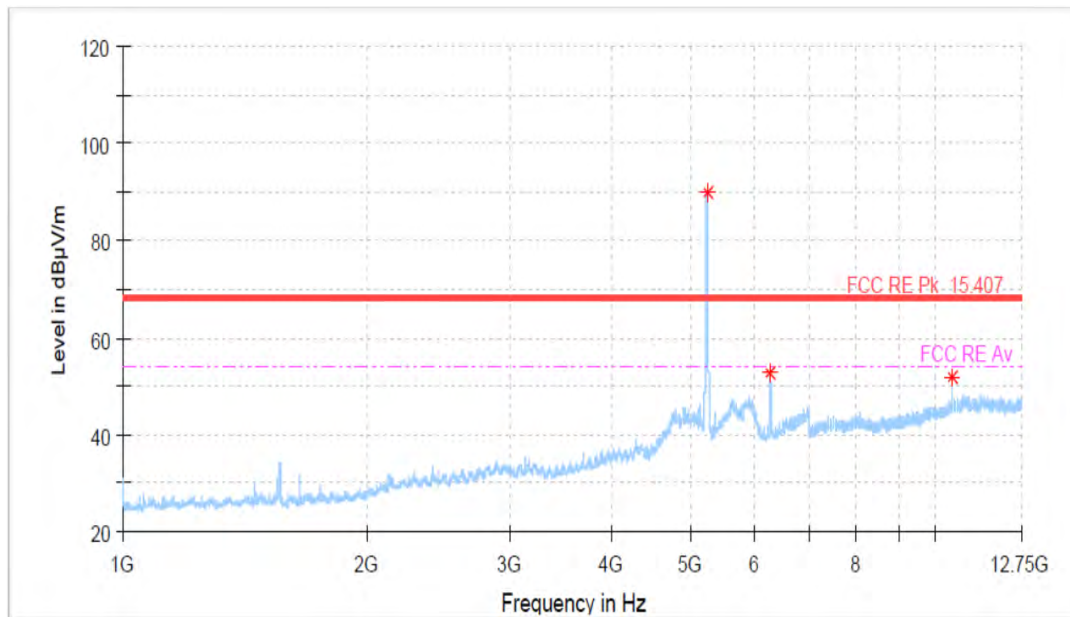
802.11 ac20 mode Highest channel (5 240 MHz) : 10 480 MHz Zoom scan_Peak



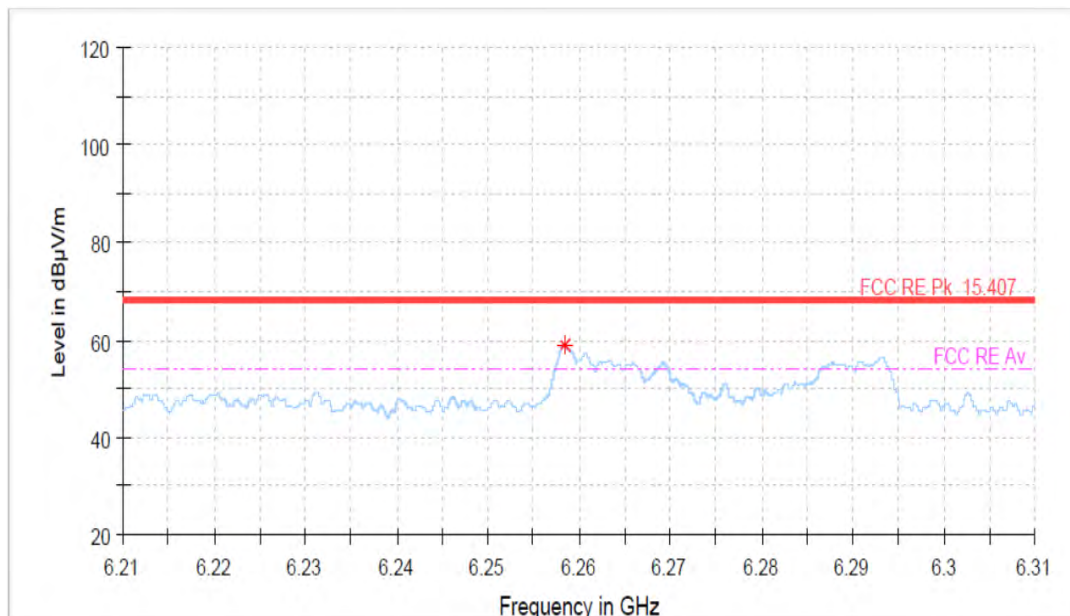
802.11 ac20 mode Highest channel (5 240 MHz) : 10 480 MHz Zoom scan_Average



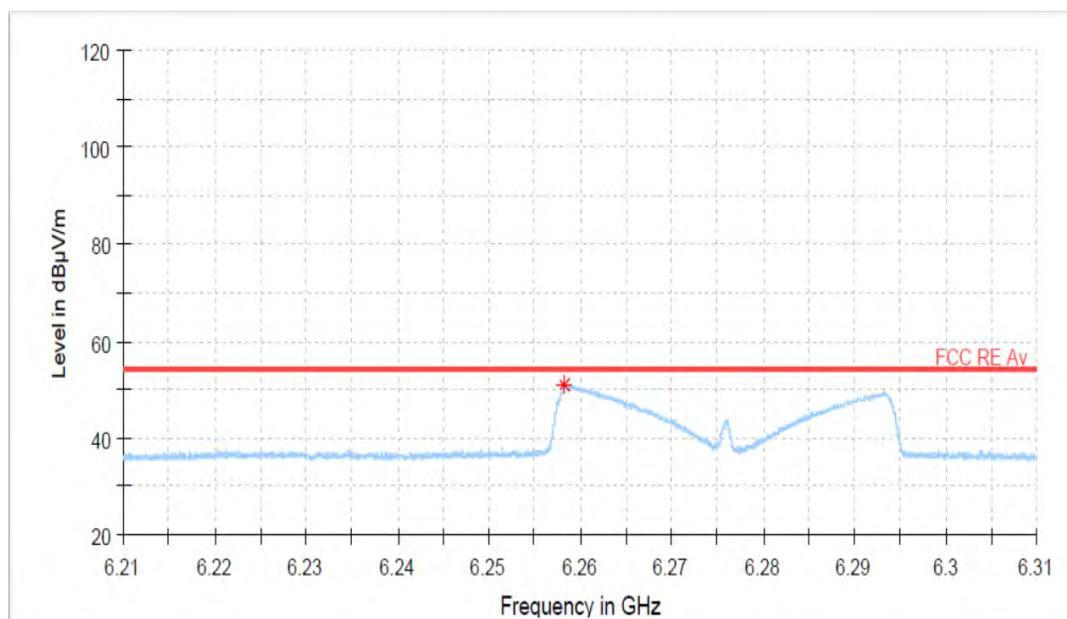
802.11 ac40 mode Highest channel (5 230 MHz) : 1 GHz to 12.75 GHz_Peak



802.11 ac40 mode Highest channel (5 230 MHz) : 6 258 MHz Zoom scan_Peak



802.11 ac40 mode Highest channel (5 230 MHz) : 6 258 MHz Zoom scan_Average



7.4.2 Radiated Spurious Emissions – U-NII-2A Band

FCC §15.209, §15.407(b)

Test Mode : Set to Lowest channel, Middle channel and Highest channel

Result

802.11 a mode

Lowest channel (5 260 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
6 304.20	49.15	H	PK	6.9	56.05	68.20	12.15
6 304.53	40.64	H	AV	6.9	47.54	54.00	6.46
10 520.17	37.11	V	PK	18.6	55.71	68.20	12.49
10 520.00	32.20	V	AV	18.6	50.80	54.00	3.20

Middle channel (5 300 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
6 352.36	48.12	H	PK	7.2	55.32	68.20	12.88
6 352.56	41.00	H	AV	7.2	48.20	54.00	5.80
10 599.65	36.57	V	PK	18.7	55.27	68.20	12.93
10 600.05	31.38	V	AV	18.7	50.08	54.00	3.92

Highest channel (5 320 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
6 376.47	49.62	H	PK	7.3	56.92	68.20	11.28
6 376.60	40.86	H	AV	7.3	48.16	54.00	5.84
10 639.88	36.37	V	PK	18.8	55.17	68.20	13.03
10 639.90	31.31	V	AV	18.8	50.11	54.00	3.89

802.11 ac(20 MHz) mode

Lowest channel (5 260 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
6 303.80	47.96	H	PK	6.9	54.86	68.20	13.34
6 304.03	40.84	H	AV	6.9	47.74	54.00	6.26
10 520.17	36.99	V	PK	18.6	55.59	68.20	12.61
10 519.91	33.19	V	AV	18.6	51.79	54.00	2.21

Middle channel (5 300 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
6 352.12	47.43	H	PK	7.2	54.63	68.20	13.57
6 351.56	40.19	H	AV	7.2	47.39	54.00	6.61
10 600.13	36.49	V	PK	18.7	55.19	68.20	13.01
10 599.98	30.96	V	AV	18.7	49.66	54.00	4.34

Highest channel (5 320 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
6 376.65	48.07	H	PK	7.3	55.37	68.20	12.83
6 375.48	42.21	H	AV	7.3	49.51	54.00	4.49
10 639.82	36.31	V	PK	18.8	55.11	68.20	13.09
10 639.74	29.70	V	AV	18.8	48.50	54.00	5.50

802.11 ac(40 MHz) mode

Lowest channel (5 270 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
6 306.15	50.23	H	PK	7.0	57.23	68.20	10.97
6 306.32	43.47	H	AV	7.0	50.47	54.00	3.53
10 539.86	37.15	V	PK	18.6	55.75	68.20	12.45
10 539.92	33.13	V	AV	18.6	51.73	54.00	2.27

Highest channel (5 310 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
6 354.46	48.94	H	PK	7.2	56.14	68.20	12.06
6 354.35	42.88	H	AV	7.2	50.08	54.00	3.92
10 619.67	37.58	V	PK	18.8	56.38	68.20	11.82
10 619.96	32.76	V	AV	18.8	51.56	54.00	2.44

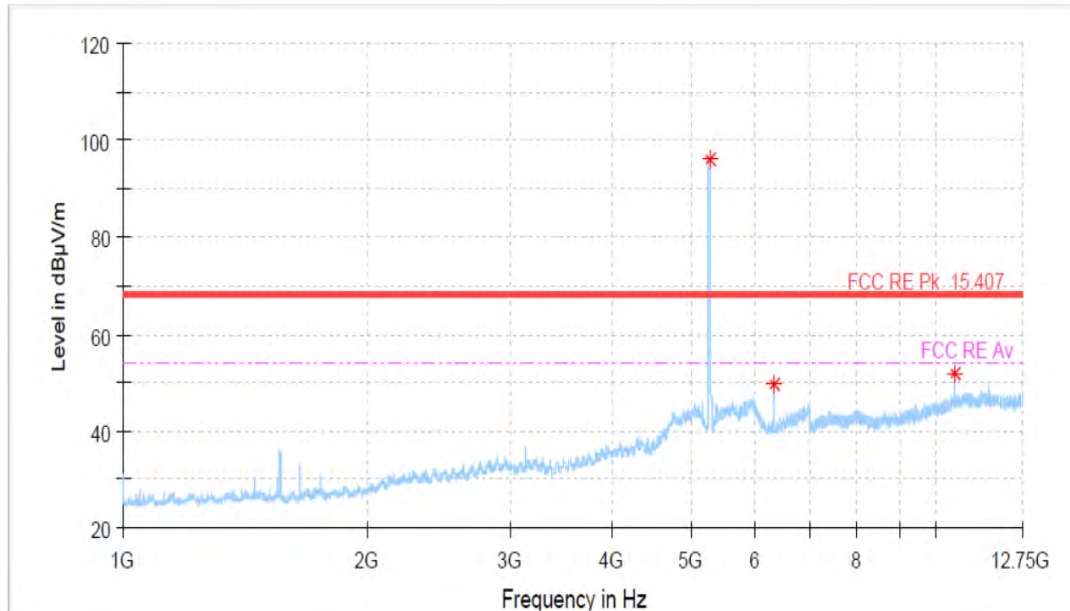
Notes:

- *Pol. : H = Horizontal, V = Vertical, Mode : PK = Peak, AV = Average
- **AF + CL + Amp. = Antenna Factor + Cable Loss + Amplifier.
- Nothing detected above 18GHz
- Other spurious was under 20 dB below Fundamental.
- The radiated emissions testing were made by rotating EUT through three orthogonal axes and rotating the receive antenna with horizontal, vertical polarization.
- Peak emissions were measured using RBW = 1 MHz, VBW = 3 MHz, Detector = Peak.
- Average emissions were measured using RBW = 1 MHz, VBW = 10 kHz, Detector = Peak.
- The spectrum was measured from 1 GHz to 10th harmonic and the worst-case emissions were reported.

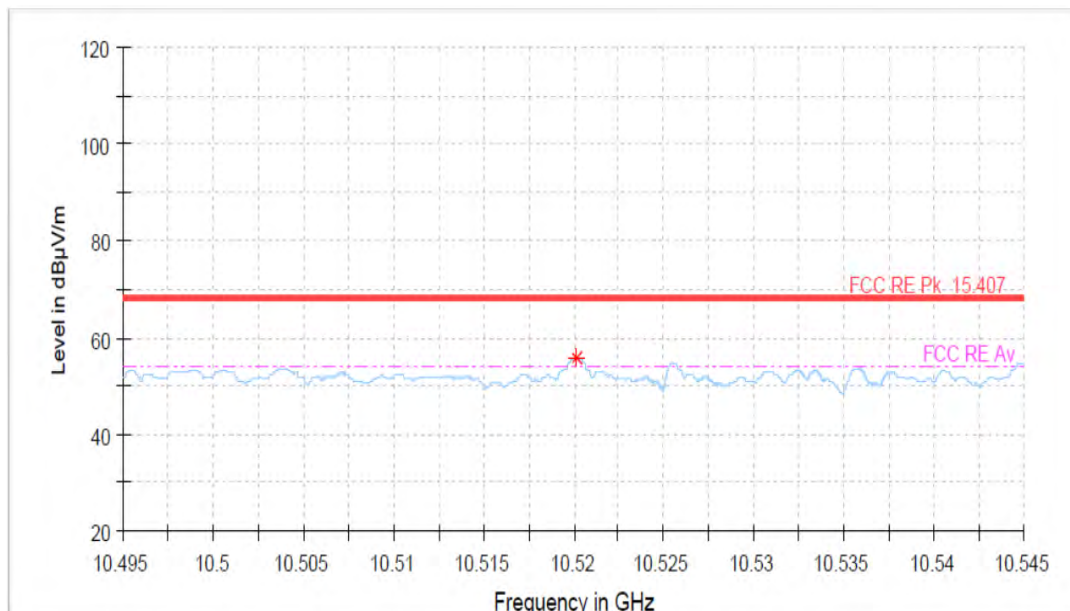
PLOTS OF EMISSIONS

Worst Case

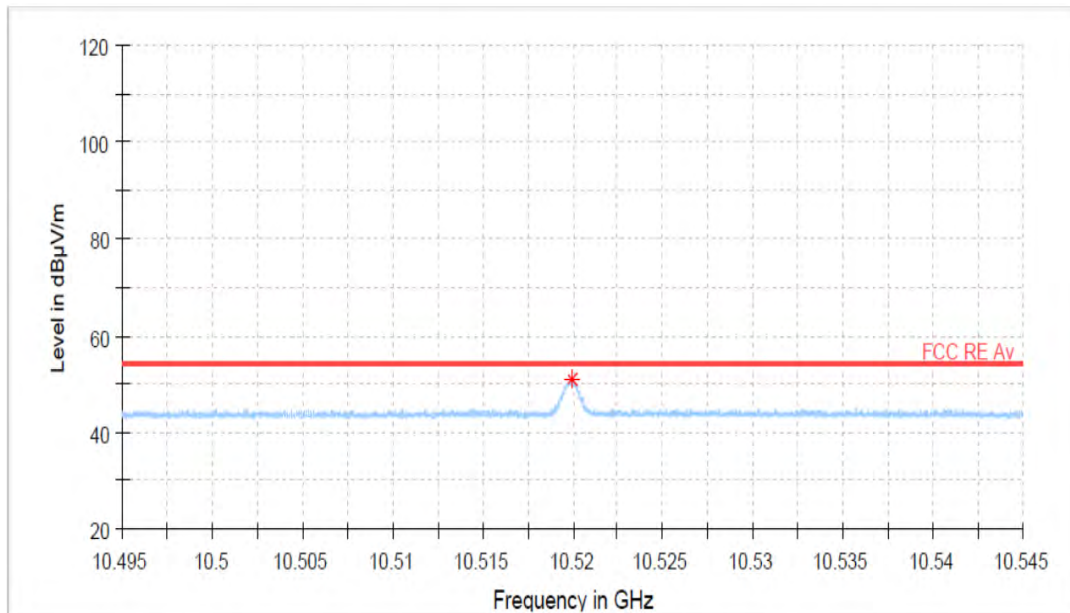
802.11 a mode Lowest Channel (5 260 MHz) : 1 GHz to 12.75 GHz_Peak



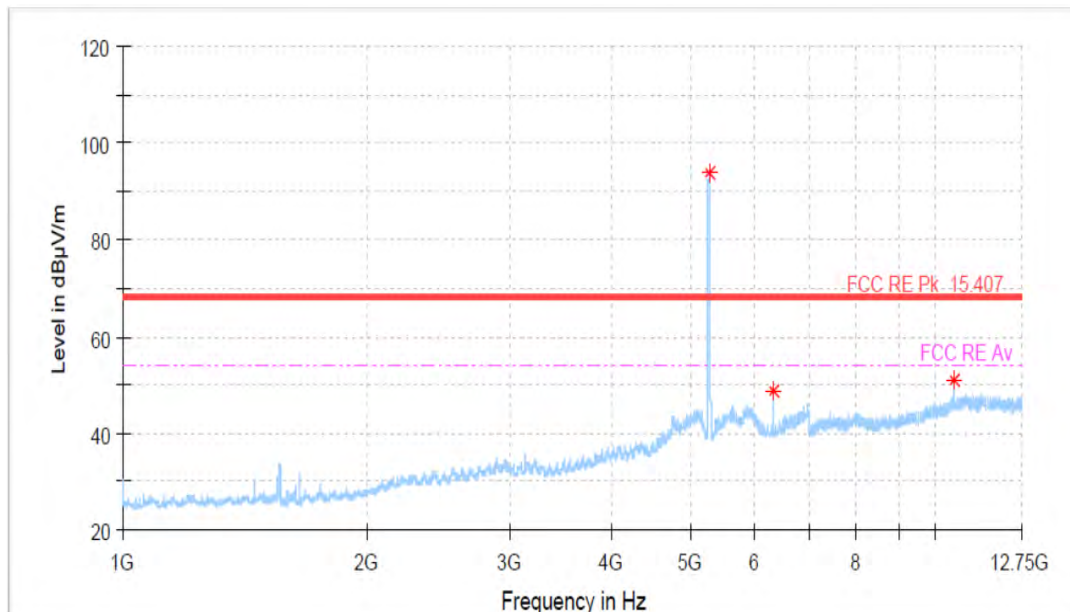
802.11 a mode Lowest Channel (5 260 MHz) : 10 520 MHz Zoom scan_Peak



802.11 a mode Lowest Channel (5 260 MHz) : 10 520 MHz Zoom scan_Average



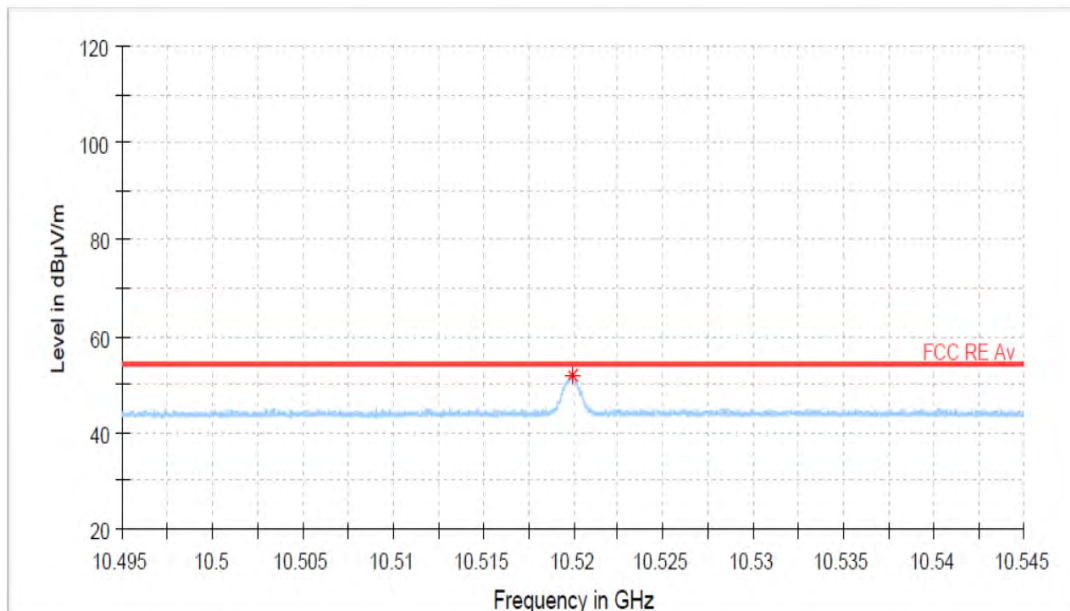
802.11 ac20 mode Lowest Channel (5 260 MHz) : 1 GHz to 12.75 GHz_Peak



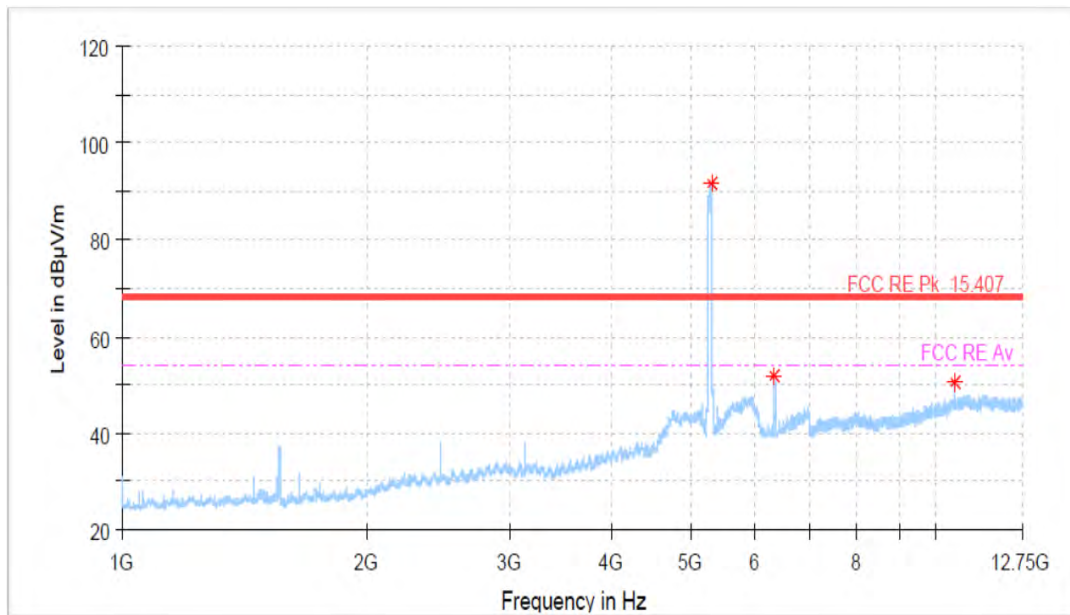
802.11 ac20 mode Lowest Channel (5 260 MHz) : 10 520 MHz Zoom scan_Peak



802.11 ac20 mode Lowest Channel (5 260 MHz) : 10 520 MHz Zoom scan_Average



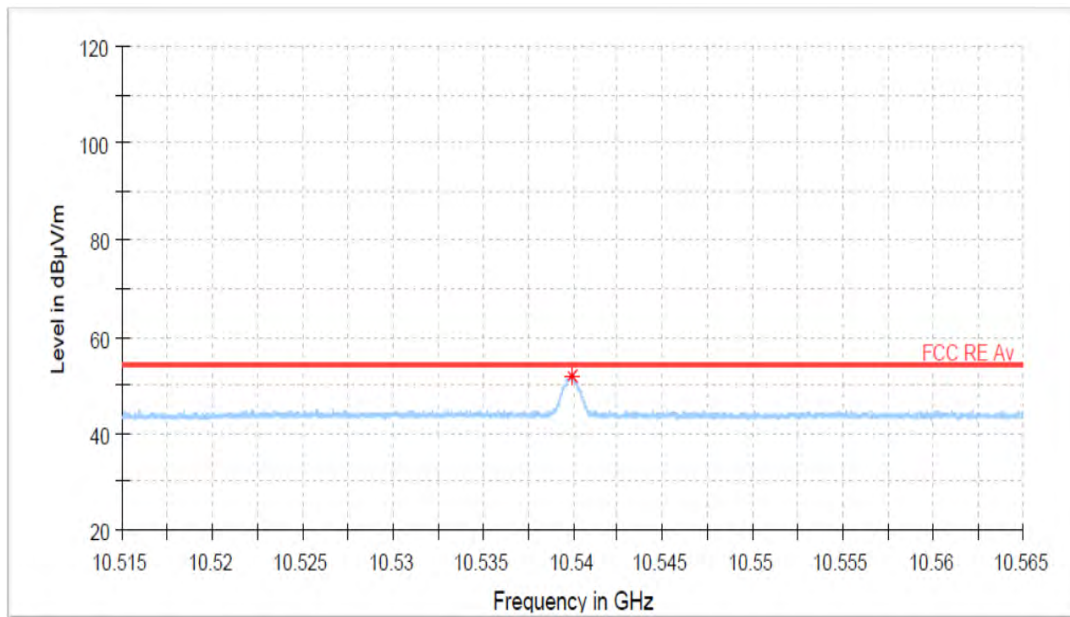
802.11 ac40 mode Lowest Channel (5 270 MHz) : 1 GHz to 12.75 GHz_Peak



802.11 ac40 mode Lowest Channel (5 270 MHz) : 10 540 MHz Zoom scan_Peak



802.11 ac40 mode Lowest Channel (5 270 MHz) : 10 540 MHz Zoom scan_Average



7.4.3 Radiated Spurious Emissions – U-NII-2C Band

FCC §15.209, §15.407(b)

Test Mode : Set to Lowest channel, Middle channel and Highest channel

Result

802.11 a mode

Lowest channel (5 500 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11 000.06	36.07	V	PK	19.3	55.37	68.20	12.83
10 999.91	29.89	V	AV	19.3	49.19	54.00	4.81

Middle channel (5 600 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11 199.02	36.26	V	PK	19.3	55.56	68.20	12.64
11 199.83	30.78	V	AV	19.3	50.08	54.00	3.92

Highest channel (5 700 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4 559.85	52.00	H	PK	2.1	54.10	68.20	14.10
4 559.98	49.79	H	AV	2.1	51.89	54.00	2.11
11 400.06	36.05	V	PK	19.8	55.85	68.20	12.35
11 399.89	30.77	V	AV	19.8	50.57	54.00	3.43

802.11 ac(20 MHz) mode

Lowest channel (5 500 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11 000.03	36.14	V	PK	19.3	55.44	68.20	12.76
10 999.93	31.21	V	AV	19.3	50.51	54.00	3.49

Middle channel (5 600 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11 199.91	37.05	V	PK	19.3	56.35	68.20	11.85
11 199.84	32.42	V	AV	19.3	51.72	54.00	2.28

Highest channel (5 700 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4 560.02	52.93	H	PK	2.1	55.03	68.20	13.17
4 559.88	49.27	H	AV	2.1	51.37	54.00	2.63
11 399.62	35.29	V	PK	19.8	55.09	68.20	13.11
11 399.87	30.07	V	AV	19.8	49.87	54.00	4.13

802.11 ac(40 MHz) mode

Lowest channel (5 510 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11 020.99	35.22	V	PK	19.3	54.52	68.20	13.68
11 019.97	27.00	V	AV	19.3	46.30	54.00	7.70

Middle channel (5 590 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11 179.93	35.78	V	PK	19.4	55.18	68.20	13.02
11 179.80	31.85	V	AV	19.4	51.25	54.00	2.75

Highest channel (5 670 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4 551.83	52.36	H	PK	2.0	54.36	68.20	13.84
4 535.94	48.36	H	AV	1.9	50.26	54.00	3.74
11 339.84	36.00	V	PK	19.5	55.50	68.20	12.70
11 339.96	31.69	V	AV	19.5	51.19	54.00	2.81

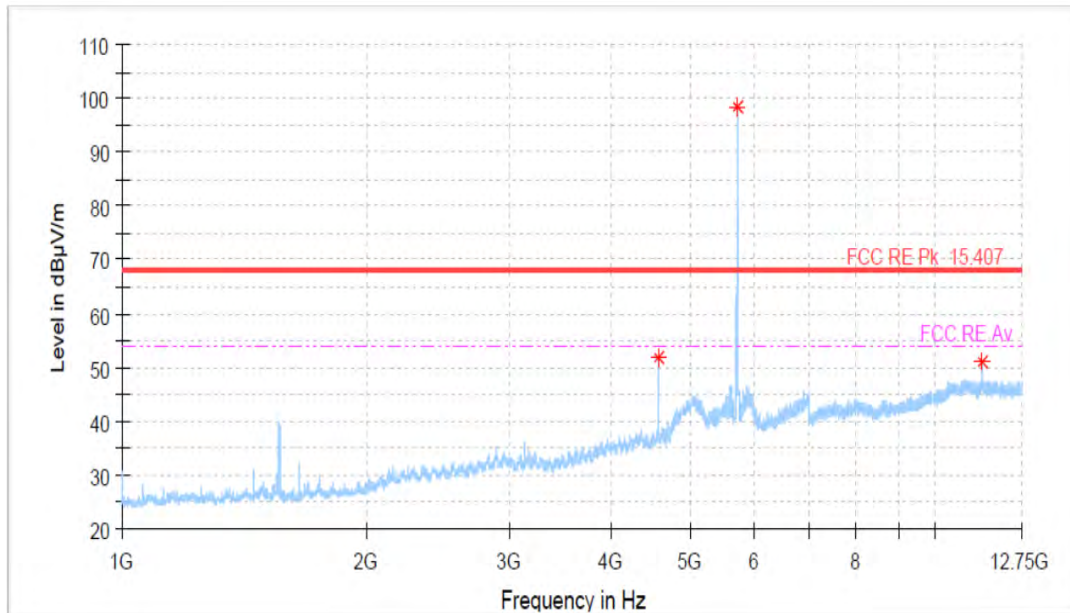
Notes:

- *Pol. : H = Horizontal, V = Vertical, Mode : PK = Peak, AV = Average
- **AF + CL + Amp. = Antenna Factor + Cable Loss + Amplifier.
- Nothing detected above 18GHz
- Other spurious was under 20 dB below Fundamental.
- The radiated emissions testing were made by rotating EUT through three orthogonal axes and rotating the receive antenna with horizontal, vertical polarization.
- Peak emissions were measured using RBW = 1 MHz, VBW = 3 MHz, Detector = Peak.
- Average emissions were measured using RBW = 1 MHz, VBW = 10 kHz, Detector = Peak.
- The spectrum was measured from 1 GHz to 10th harmonic and the worst-case emissions were reported.

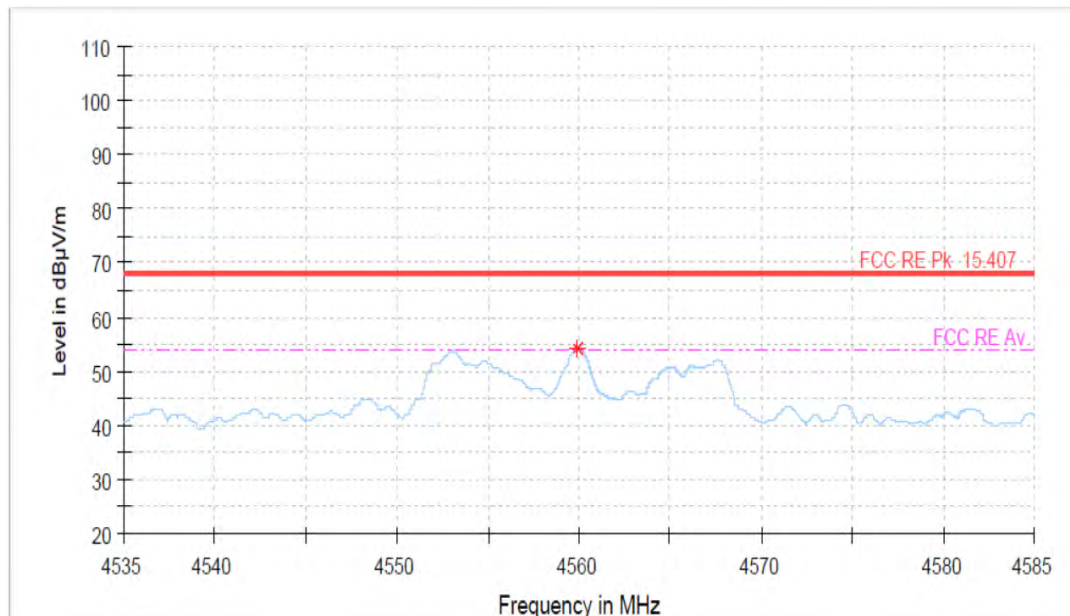
PLOTS OF EMISSIONS

Worst Case

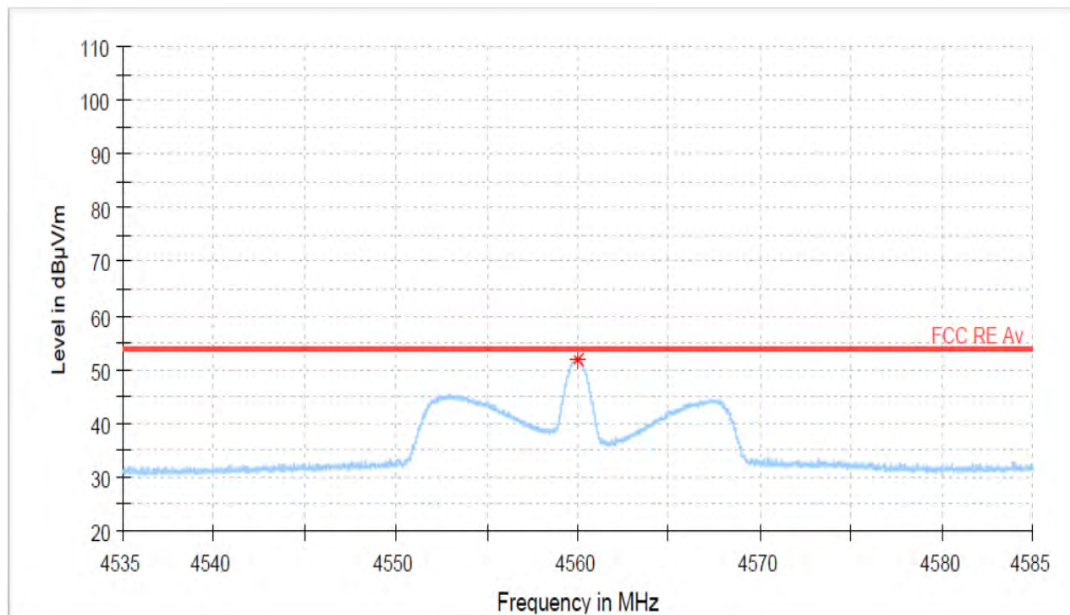
802.11 a mode Highest channel (5 700 MHz) : 1 GHz to 12.75 GHz_Peak



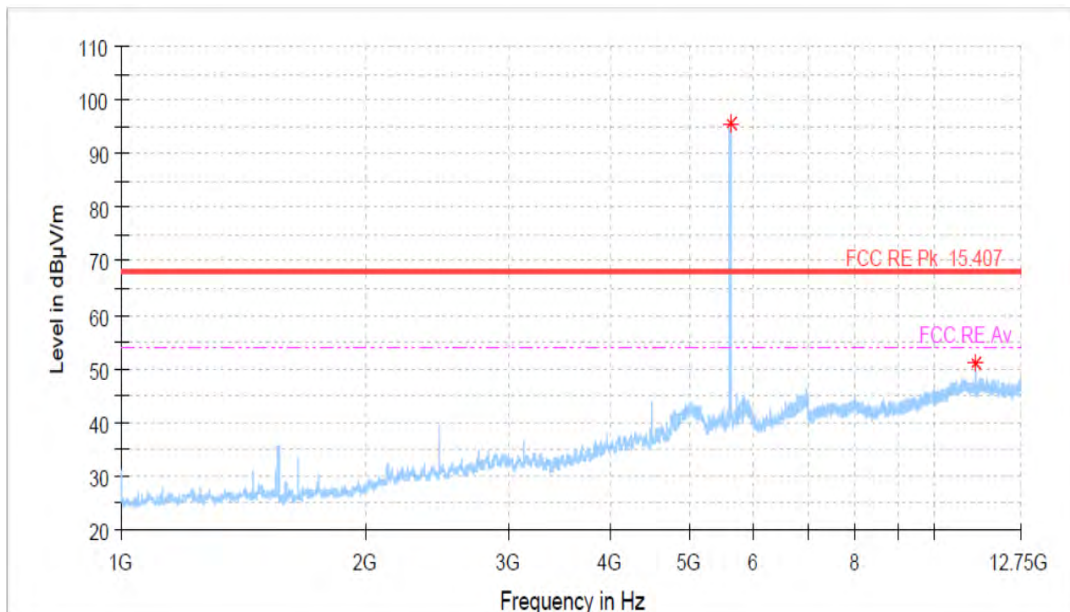
802.11 a mode Highest channel (5 700 MHz) : 4 560 MHz Zoom scan_Peak



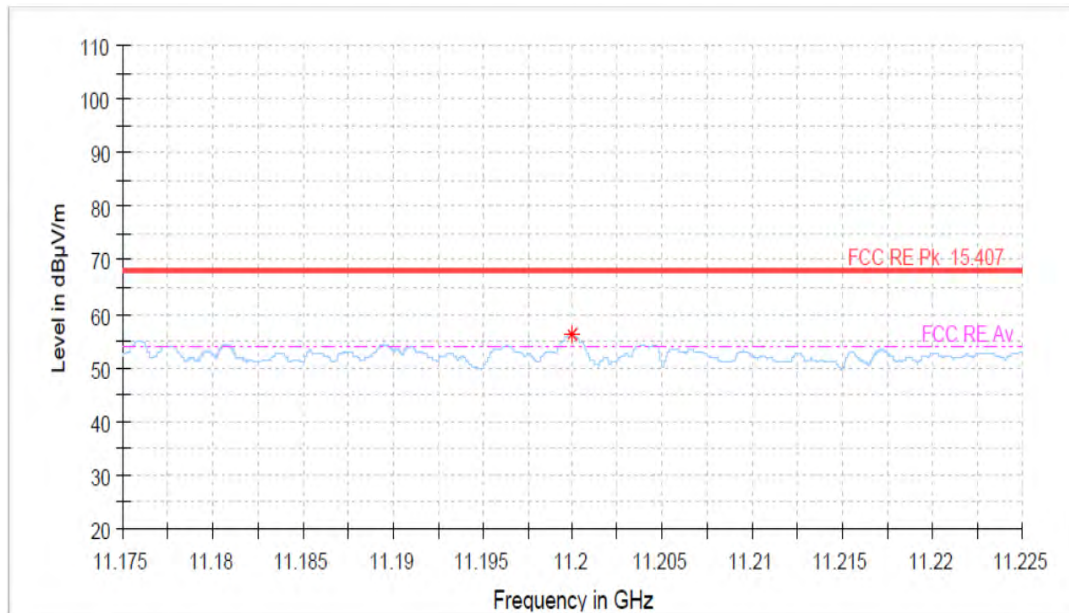
802.11 a mode Highest channel (5 700 MHz) : 4 560 MHz Zoom scan_Average



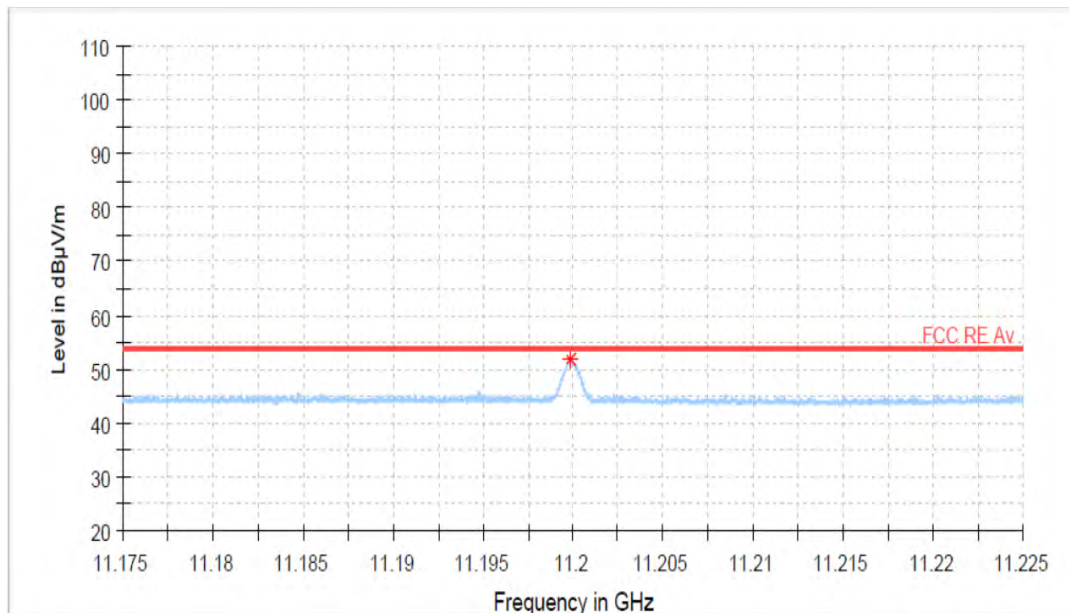
802.11 ac20 mode Middle channel (5 600 MHz) : 1 GHz to 12.75 GHz_Peak



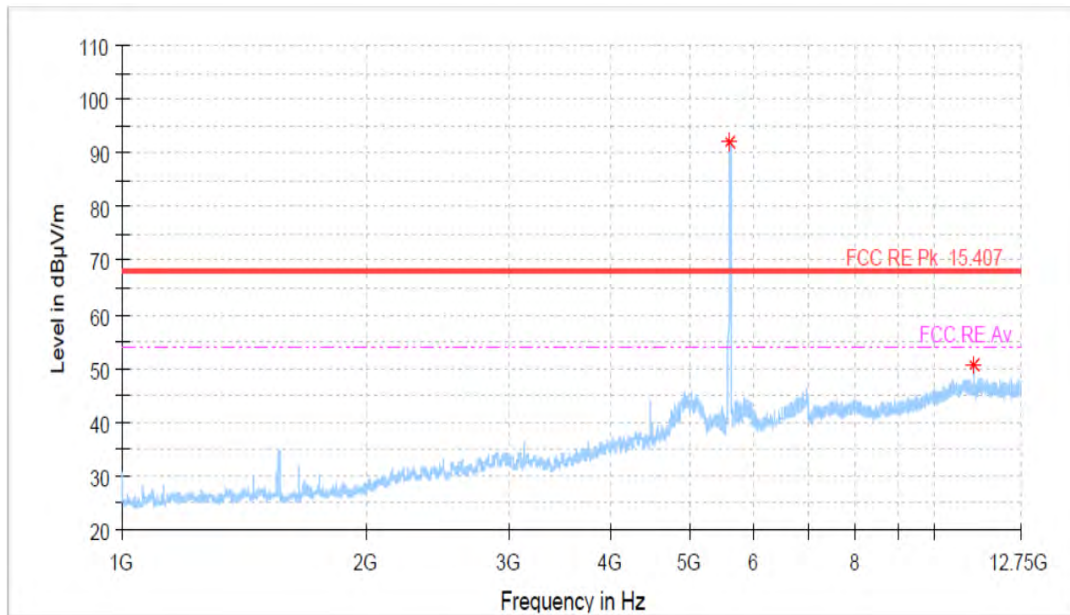
802.11 ac20 mode Middle channel (5 600 MHz) : 11 200 MHz Zoom scan_Peak



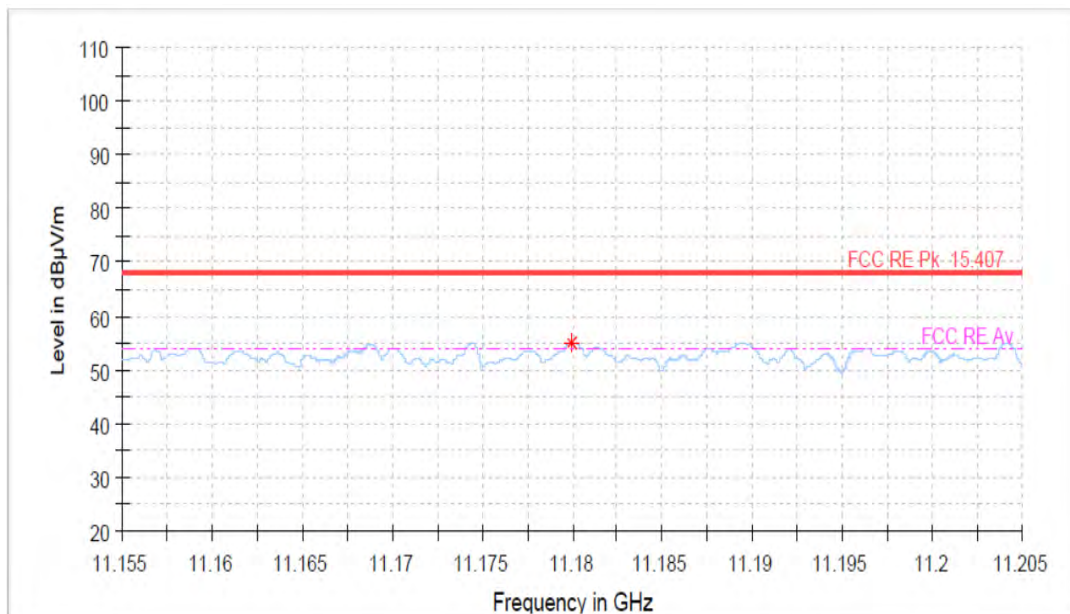
802.11 ac20 mode Middle channel (5 600 MHz) : 11 200 MHz Zoom scan_Average

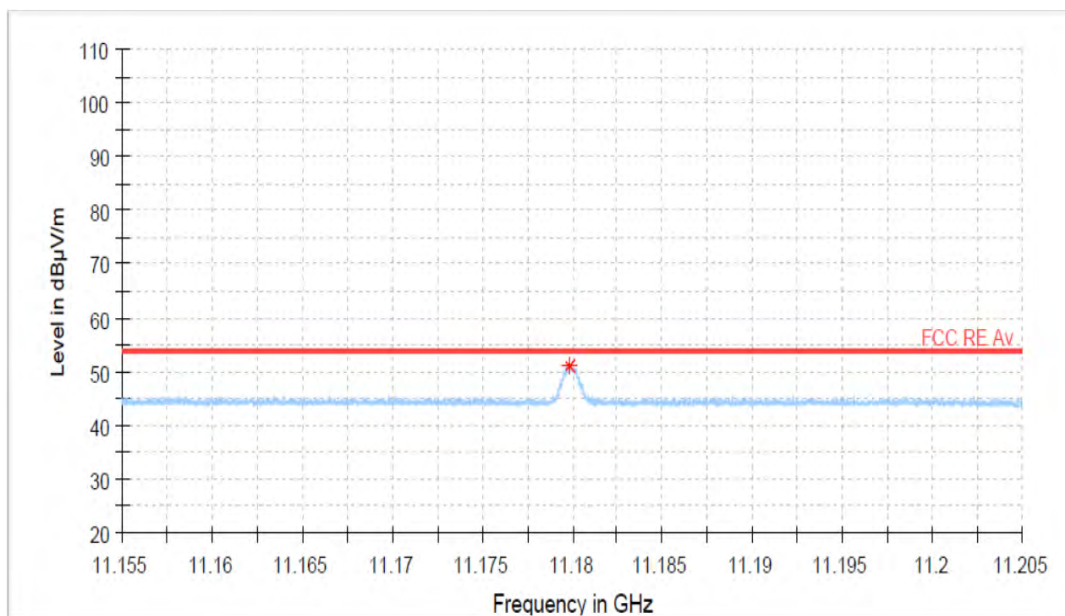


802.11 ac40 mode Middle channel (5 590 MHz) : 1 GHz to 12.75 GHz_Peak



802.11 ac40 mode Middle channel (5 590 MHz) : 11 180 MHz Zoom scan_Peak



802.11 ac40 mode Middle channel (5 590 MHz) : 11 180 MHz Zoom scan_Average

7.4.4 Radiated Spurious Emissions – U-NII-3 Band

FCC §15.209, §15.407(b)

Test Mode : Set to Lowest channel, Middle channel and Highest channel

Result

802.11 a mode

Lowest channel (5 745 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4 595.85	53.38	H	PK	2.3	55.68	68.20	12.52
4 595.96	49.50	H	AV	2.3	51.80	54.00	2.20
11 489.38	34.36	H	PK	19.7	54.06	68.20	14.14
11 489.94	29.26	V	AV	19.7	48.96	54.00	5.04

Middle channel (5 785 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4 627.86	54.41	H	PK	2.6	57.01	68.20	11.19
4 627.97	48.70	H	AV	2.6	51.30	54.00	2.70
11 570.16	36.41	V	PK	19.6	56.01	68.20	12.19
11 569.88	30.61	V	AV	19.6	50.21	54.00	3.79

Highest channel (5 825 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4 659.90	55.19	H	PK	2.3	57.49	68.20	10.71
4 659.92	49.25	H	AV	2.3	51.55	54.00	2.45
11 649.83	37.53	V	PK	19.5	57.03	68.20	11.17
11 649.89	31.48	V	AV	19.5	50.98	54.00	3.02

802.11 ac(20 MHz) mode

Lowest channel (5 745 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4 596.08	53.43	H	PK	2.3	55.73	68.20	12.47
4 595.98	49.02	H	AV	2.3	51.32	54.00	2.68
11 489.28	36.22	V	PK	19.7	55.92	68.20	12.28
11 489.95	30.09	V	AV	19.7	49.79	54.00	4.21

Middle channel (5 785 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4 627.94	51.85	V	PK	2.6	54.45	68.20	13.75
4 627.90	47.55	V	AV	2.6	50.15	54.00	3.85
11 569.68	35.73	V	PK	19.6	55.33	68.20	12.87
11 569.76	29.89	V	AV	19.6	49.49	54.00	4.51

Highest channel (5 825 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4 659.96	50.79	H	PK	2.3	53.09	68.20	15.11
4 659.99	48.52	H	AV	2.3	50.82	54.00	3.18
11 649.76	36.11	V	PK	19.5	55.61	68.20	12.59
11 649.93	30.56	V	AV	19.5	50.06	54.00	3.94

802.11 ac(40 MHz) mode

Lowest channel (5 755 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4 621.10	56.08	H	PK	2.5	58.58	68.20	9.62
4 604.02	49.26	H	AV	2.4	51.66	54.00	2.34
11 510.28	36.35	V	PK	19.7	56.05	68.20	12.15
11 509.81	30.32	V	AV	19.7	50.02	54.00	3.98

Highest channel (5 795 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4 653.04	52.40	V	PK	2.3	54.70	68.20	13.50
4 636.00	47.63	V	AV	2.5	50.13	54.00	3.87
11 590.09	35.19	V	PK	19.6	54.79	68.20	13.41
11 589.98	29.84	V	AV	19.6	49.44	54.00	4.56

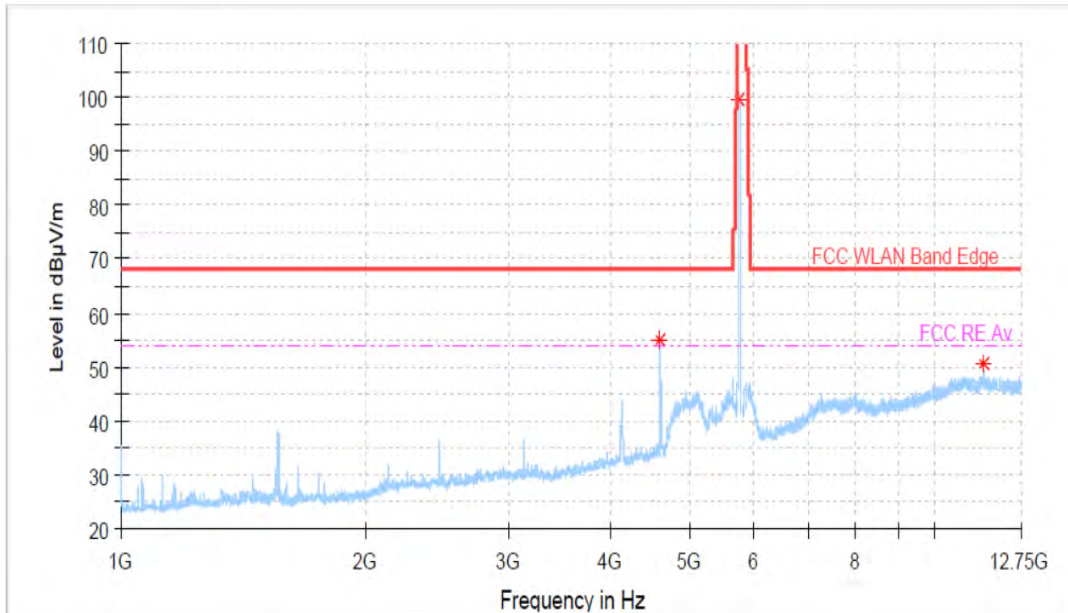
Notes:

- *Pol. : H = Horizontal, V = Vertical, Mode : PK = Peak, AV = Average
- **AF + CL + Amp. = Antenna Factor + Cable Loss + Amplifier.
- Nothing detected above 18GHz
- Other spurious was under 20 dB below Fundamental.
- The radiated emissions testing were made by rotating EUT through three orthogonal axes and rotating the receive antenna with horizontal, vertical polarization.
- Peak emissions were measured using RBW = 1 MHz, VBW = 3 MHz, Detector = Peak.
- Average emissions were measured using RBW = 1 MHz, VBW = 10 kHz, Detector = Peak.
- The spectrum was measured from 1 GHz to 10th harmonic and the worst-case emissions were reported.

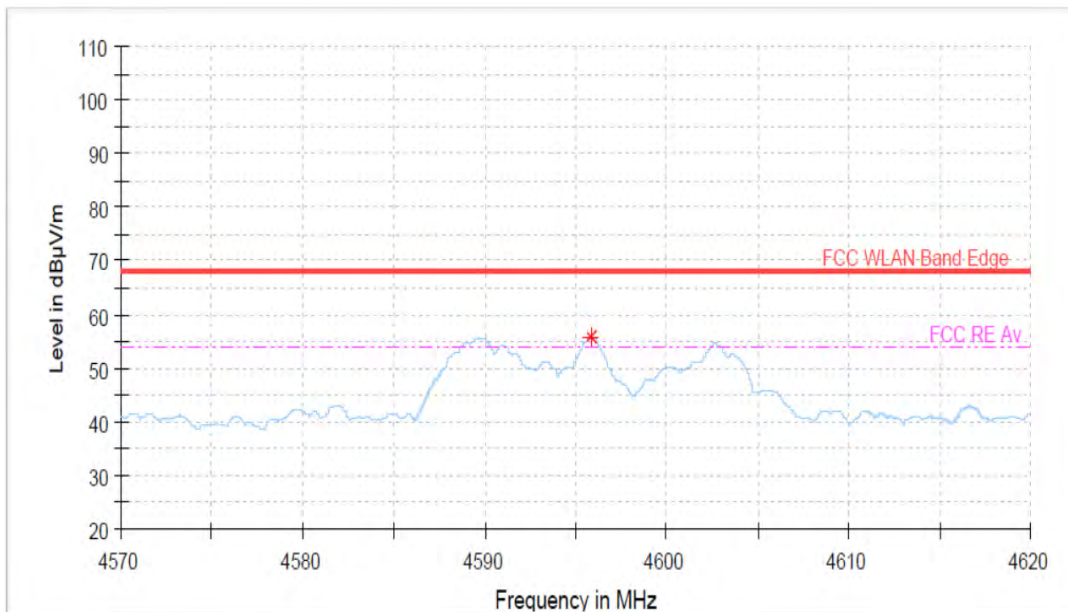
PLOTS OF EMISSIONS

Worst Case

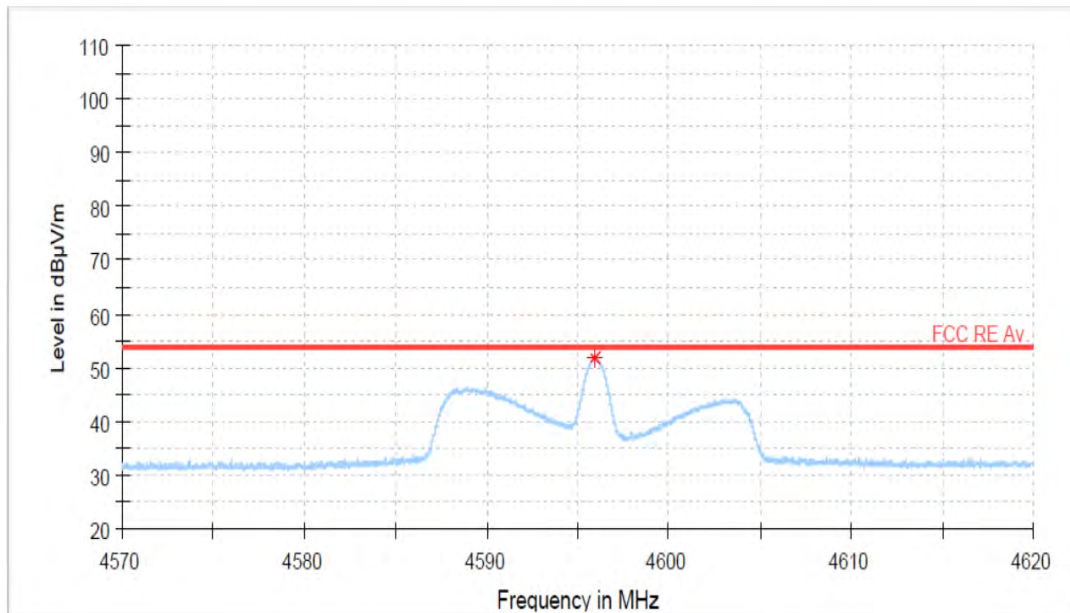
802.11 a mode Lowest channel (5 745 MHz) : 1 GHz to 12.75 GHz_Peak



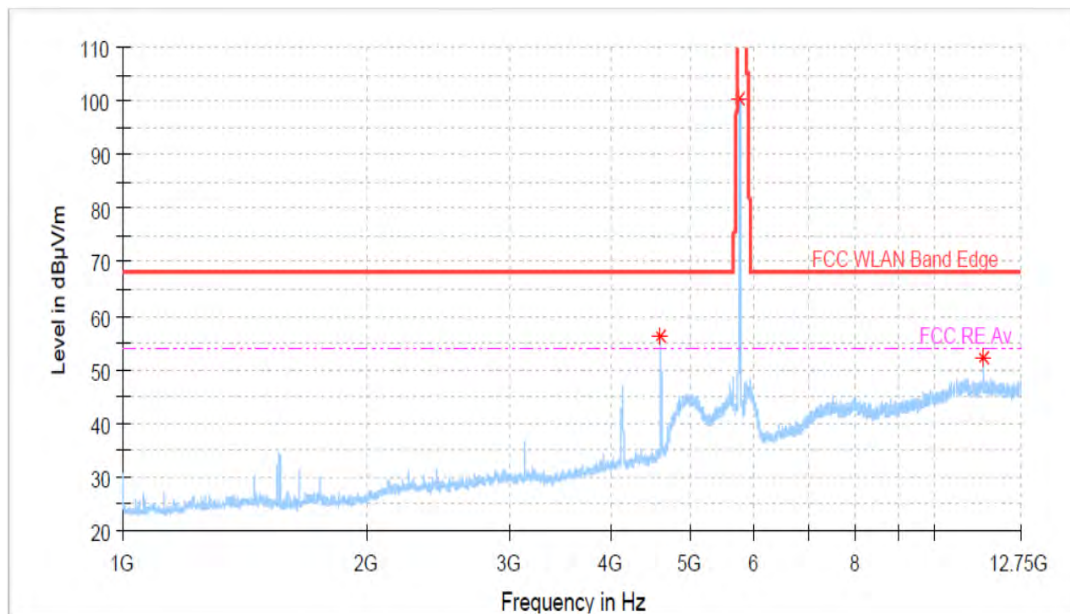
802.11 a mode Lowest channel (5 745 MHz) : 4 596 MHz Zoom scan_Peak



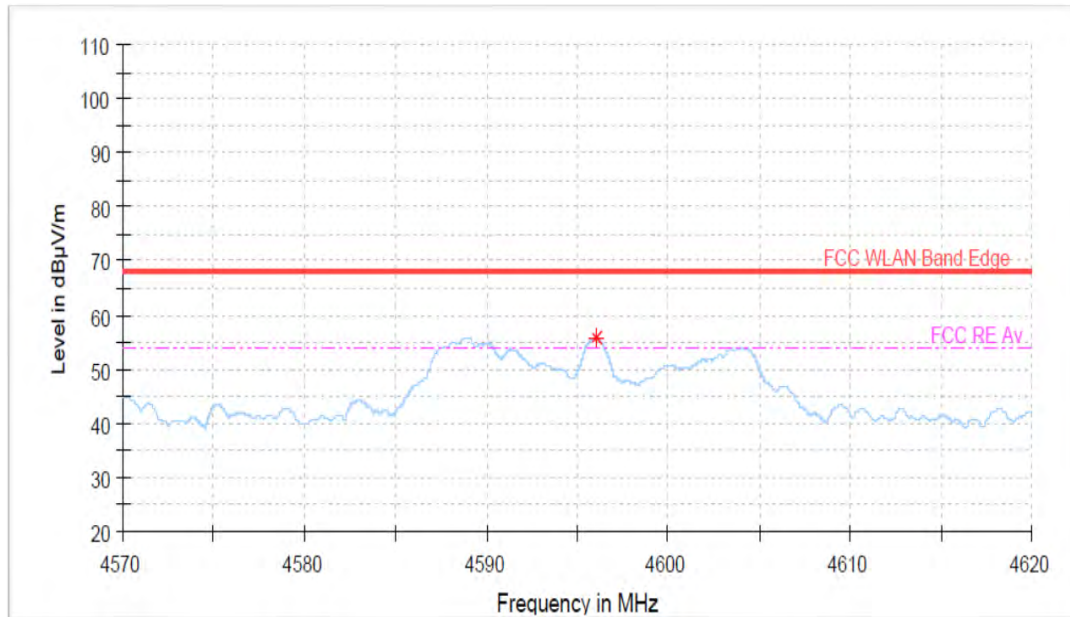
802.11 a mode Lowest channel (5 745 MHz) : 4 596 MHz Zoom scan_Average



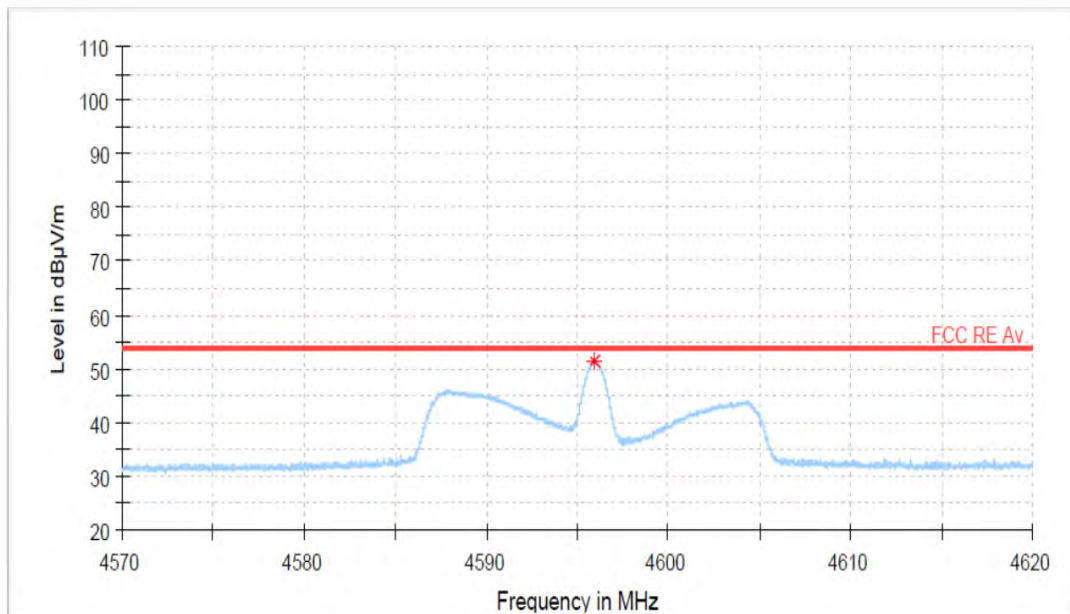
802.11 ac20 mode Lowest channel (5 745 MHz) : 1 GHz to 12.75 GHz_Peak



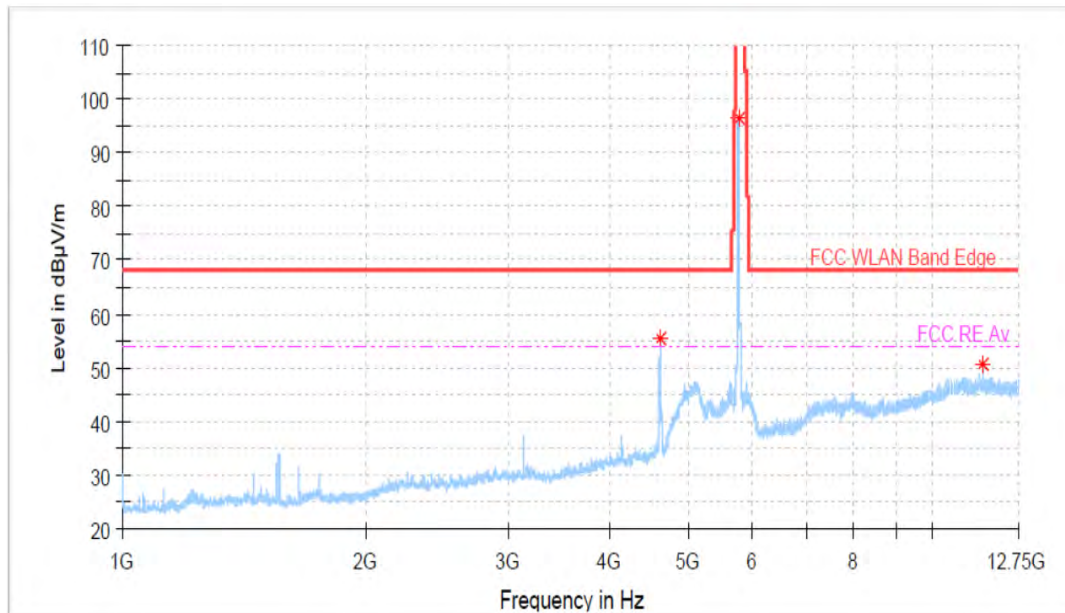
802.11 ac20 mode Lowest channel (5 745 MHz) : 4 596 MHz Zoom scan_Peak



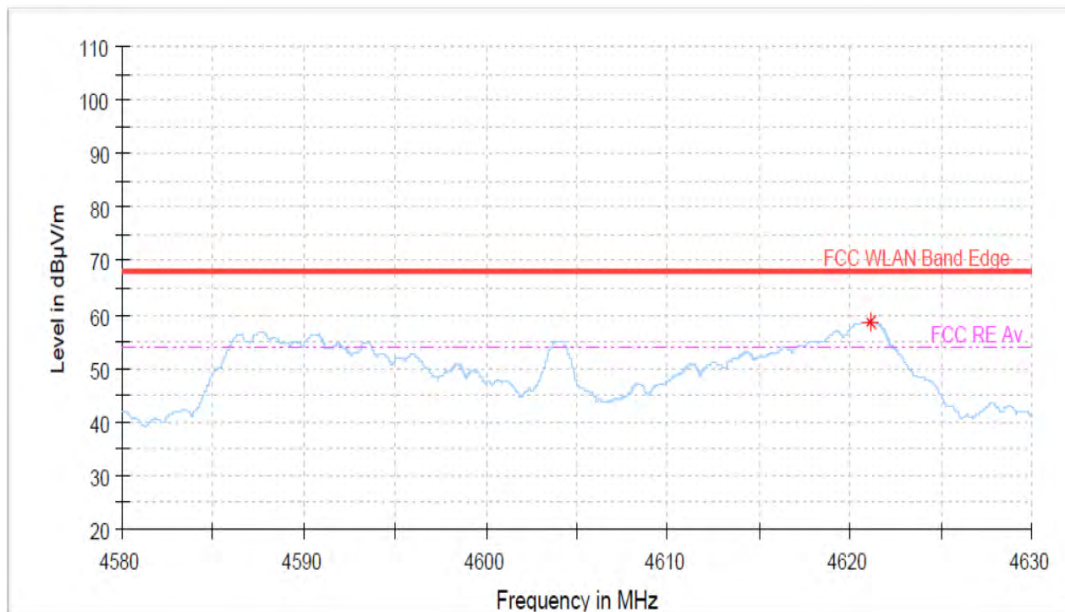
802.11 ac20 mode Lowest channel (5 745 MHz) : 4 596 MHz Zoom scan_Average

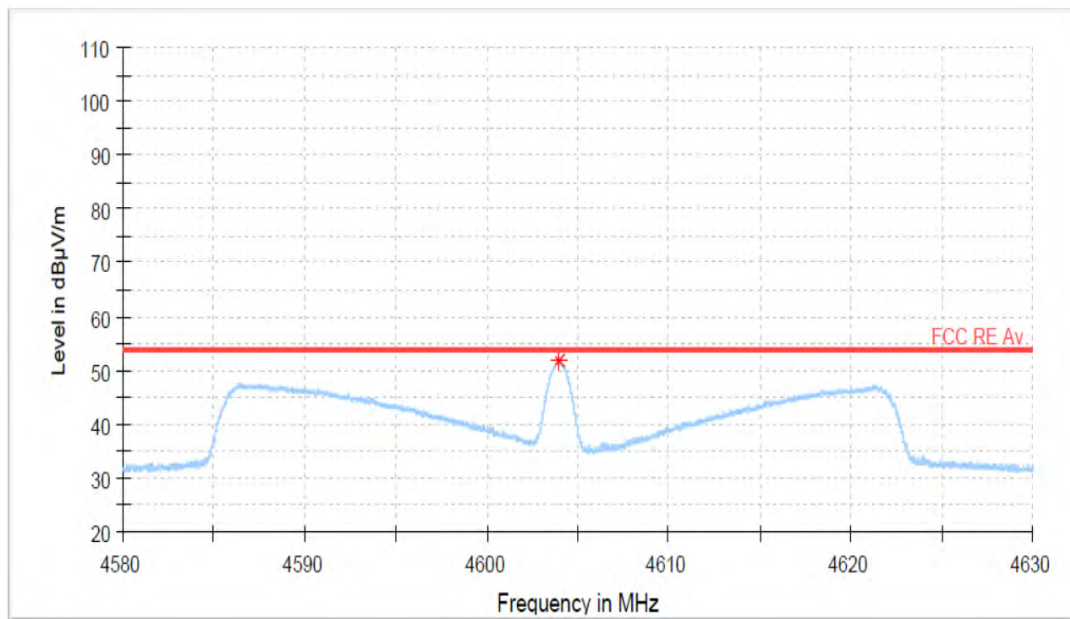


802.11 ac40 mode Lowest channel (5 755 MHz) : 1 GHz to 12.75 GHz_Peak



802.11 ac40 mode Lowest channel (5 755 MHz) : 4 604 MHz Zoom scan_Peak



802.11 ac40 mode Lowest channel (5 755 MHz) : 4 604 MHz Zoom scan_Average

7.5 Radiated Band Edge

7.5.1 Radiated Band Edge – U-NII-1 Band and U-NII-2A Band

FCC §15.209, §15.407(b)

Test Mode : Set to Lowest channel and Highest channel

Result

802.11 a mode

Lowest Channel (5 180 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5 079.28	52.70	H	PK	4.4	57.10	68.20	11.10
5 071.96	41.25	H	AV	4.4	45.65	54.00	8.35
5 150.00	54.16	H	PK	4.2	58.36	68.20	9.84
5 150.00	39.39	H	AV	4.2	43.59	54.00	10.41

Highest Channel (5 320 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5 350.00	47.04	V	PK	4.0	51.04	68.20	17.16
5 350.00	36.31	H	AV	4.0	40.31	54.00	13.69
5 423.21	51.87	H	PK	4.2	56.07	68.20	12.13
5 430.03	40.32	H	AV	4.3	44.62	54.00	9.38

802.11 ac(20 MHz) mode

Lowest Channel (5 180 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5 081.81	51.63	H	PK	4.4	56.03	68.20	12.17
5 074.04	39.03	H	AV	4.4	43.43	54.00	10.57
5 150.00	55.28	H	PK	4.2	59.48	68.20	8.72
5 150.00	39.33	H	AV	4.2	43.53	54.00	10.47

Highest Channel (5 320 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5 350.00	47.79	H	PK	4.0	51.79	68.20	16.41
5 350.00	39.14	H	AV	4.0	43.14	54.00	10.86
5 421.44	53.16	H	PK	4.2	57.36	68.20	10.84
5 429.19	41.54	H	AV	4.3	45.84	54.00	8.16

802.11 ac(40 MHz) mode

Lowest Channel (5 190 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5 145.31	60.57	H	PK	4.2	64.77	68.20	3.43
5 147.95	44.42	H	AV	4.2	48.62	54.00	5.38
5 150.00	58.34	H	PK	4.2	62.54	68.20	5.66
5 150.00	44.12	H	AV	4.2	48.32	54.00	5.68

Highest Channel (5 310 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5 350.00	54.68	H	PK	4.0	58.68	68.20	9.52
5 350.00	45.43	H	AV	4.0	49.43	54.00	4.57
5 356.16	59.49	H	PK	4.0	63.49	68.20	4.71
5 351.27	45.68	H	AV	4.0	49.68	54.00	4.32

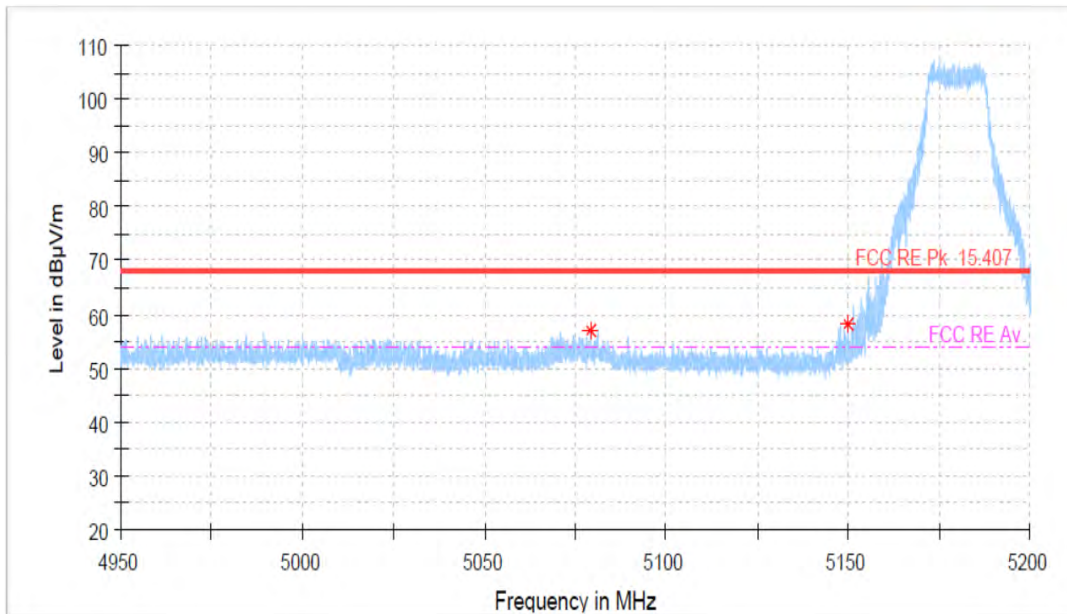
Notes:

- *Pol. : H = Horizontal, V = Vertical, Mode : PK = Peak, AV = Average
- **AF + CL + Amp. = Antenna Factor + Cable Loss + Amplifier.
- Other spurious was under 20 dB below Fundamental.
- The radiated emissions testing were made by rotating EUT through three orthogonal axes and rotating the receive antenna with horizontal, vertical polarization.
- Peak emissions were measured using RBW = 1 MHz, VBW = 3 MHz, Detector = Peak.
- Average emissions were measured using RBW = 1 MHz, VBW = 10 kHz, Detector = Peak.

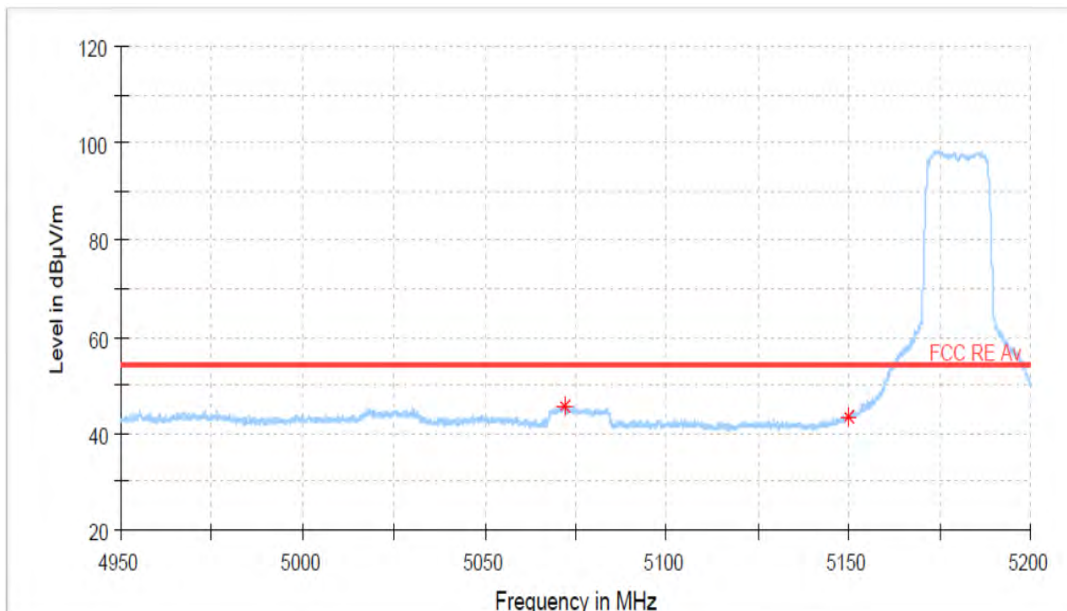
PLOTS OF EMISSIONS

802.11 a mode

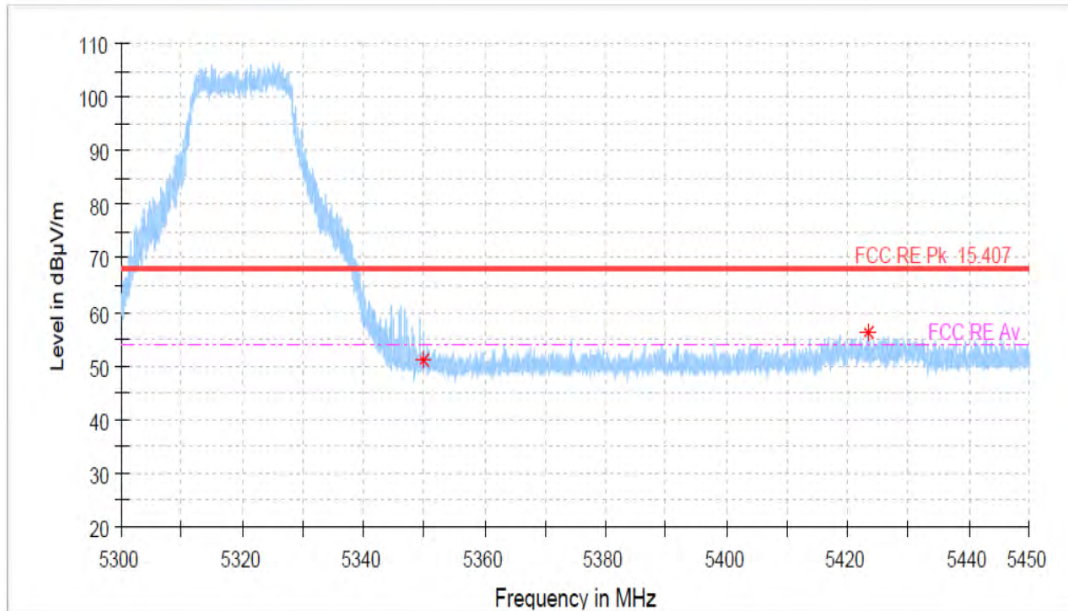
Lowest Channel (5 180 MHz)_Peak



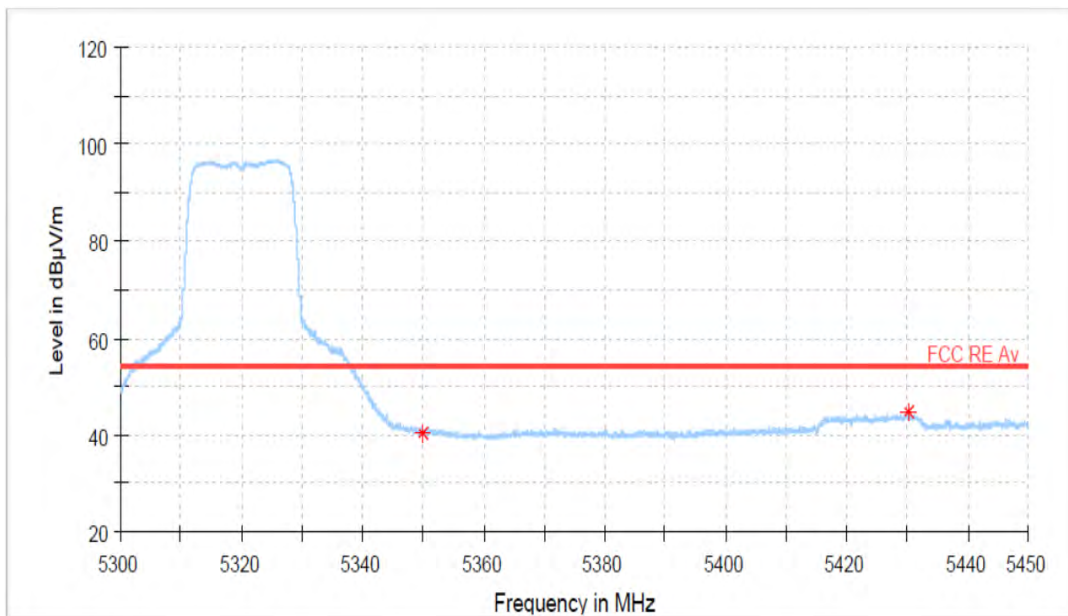
Lowest Channel (5 180 MHz)_Average

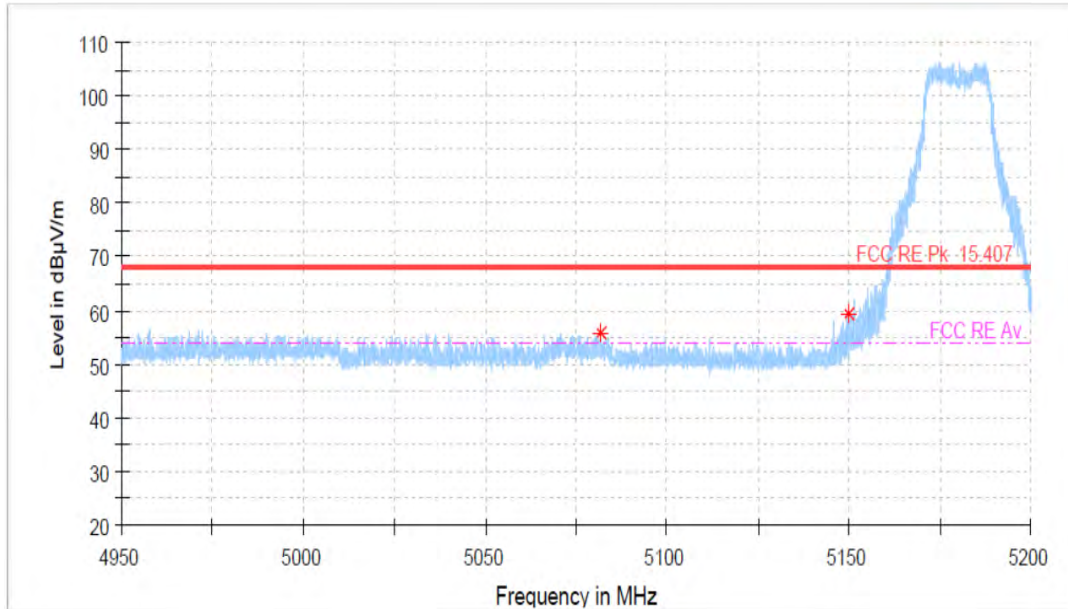
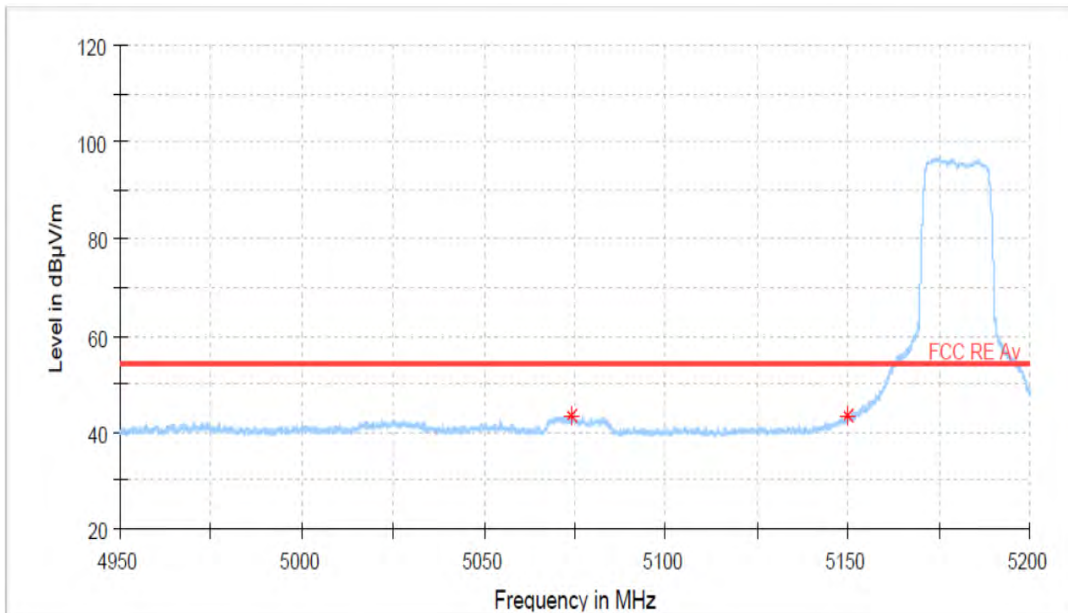


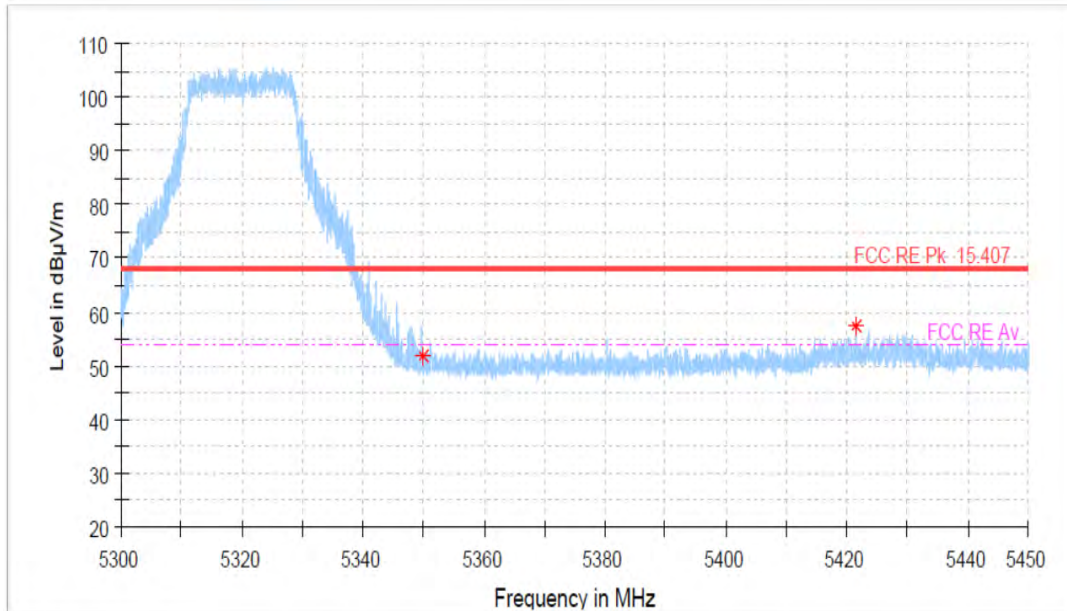
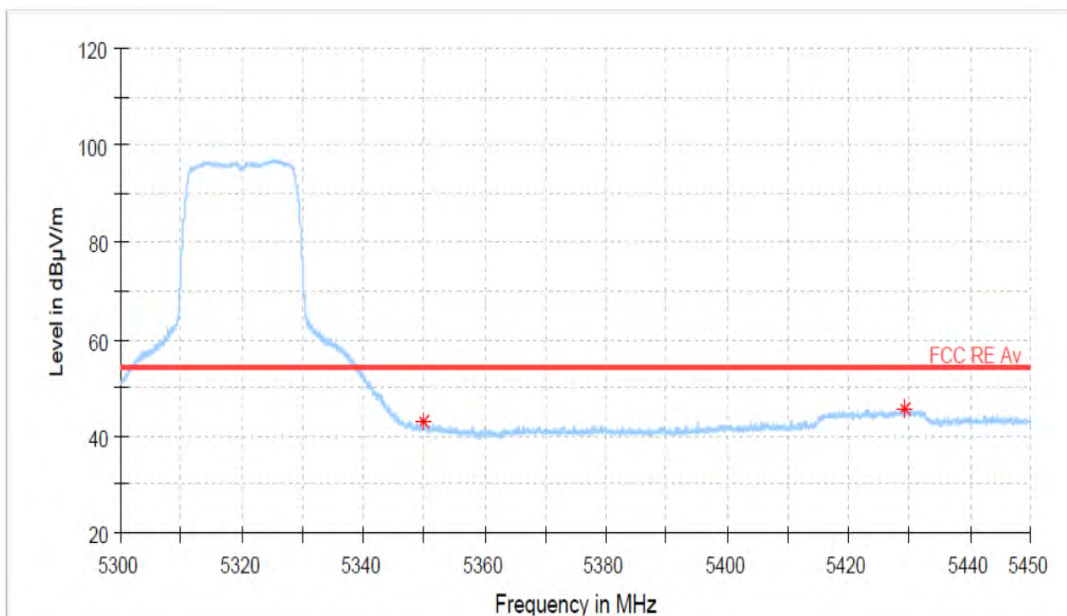
Highest Channel (5 320 MHz)_Peak

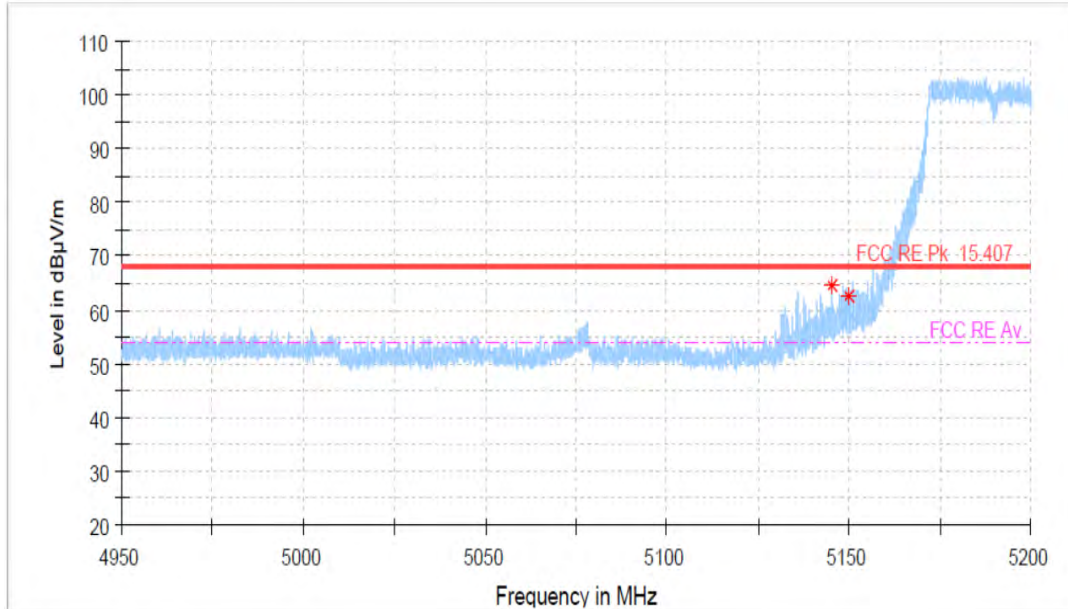
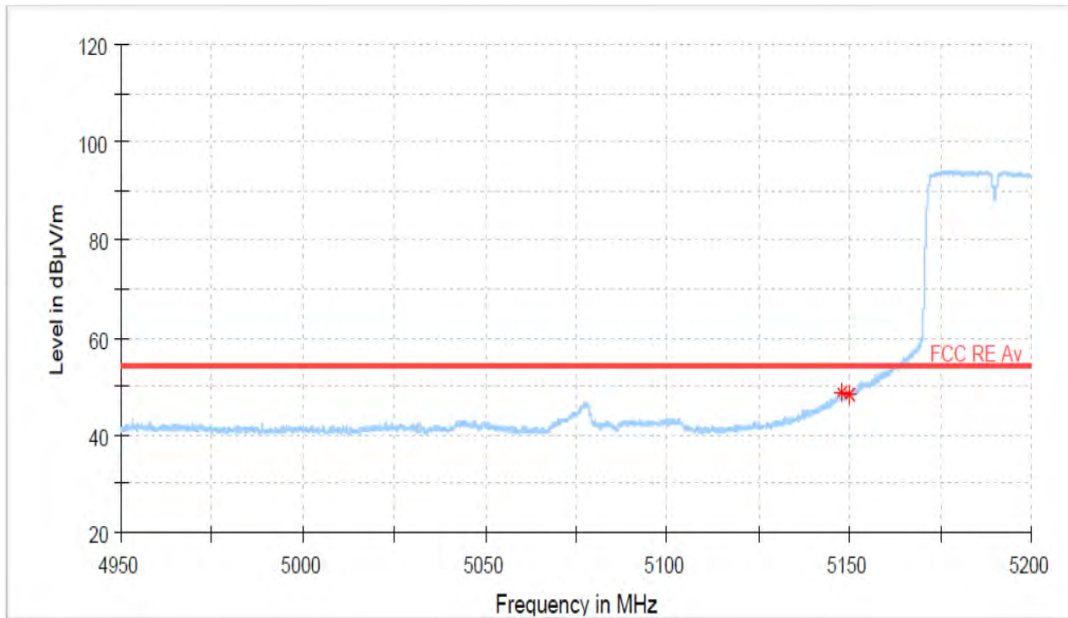


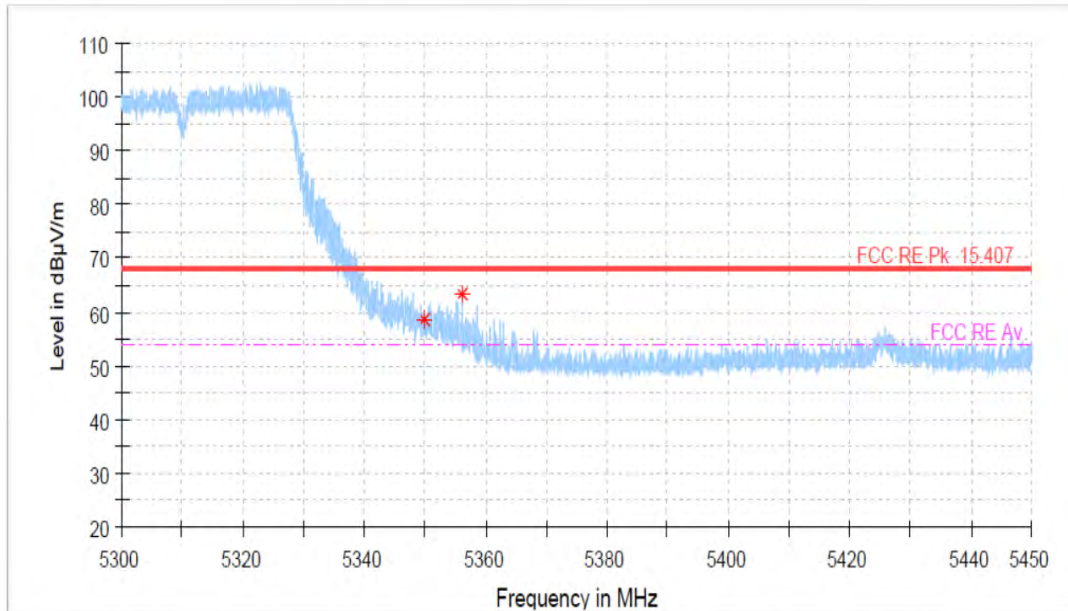
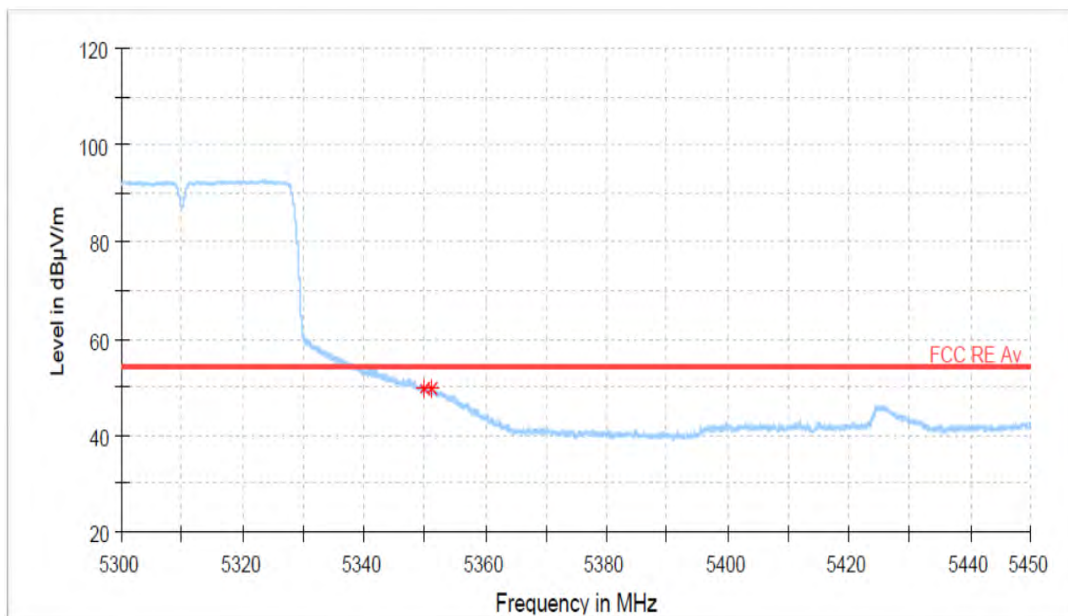
Highest Channel (5 320 MHz)_Average



802.11 ac(20 MHz) mode***Lowest Channel (5 180 MHz)_Peak******Lowest Channel (5 180 MHz)_Average***

Highest Channel (5 320 MHz)_Peak**Highest Channel (5 320 MHz)_Average**

802.11 ac(40 MHz) mode***Lowest Channel (5 190 MHz)_Peak******Lowest Channel (5 190 MHz)_Average***

Highest Channel (5 310 MHz)_Peak**Highest Channel (5 310 MHz)_Average**

7.5.2 Radiated Band Edge – U-NII-2C Band

FCC §15.209, §15.407(b)

Test Mode : Set to Lowest channel and Highest channel

Result

802.11 a mode

Lowest Channel (5 500 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5 400.98	50.87	H	PK	4.1	54.97	68.20	13.23
5 396.56	40.85	H	AV	4.1	44.95	54.00	9.05
5 470.00	47.98	H	PK	4.3	52.28	68.20	15.92
5 470.00	36.78	H	AV	4.3	41.08	54.00	12.92

Highest Channel (5 700 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5 725.00	58.05	H	PK	5.1	63.15	68.20	5.05
5 725.00	42.17	H	AV	5.1	47.27	54.00	6.73
5 729.55	59.59	H	PK	5.1	64.69	68.20	3.51
5 725.56	42.76	H	AV	5.1	47.86	54.00	6.14

802.11 ac(20 MHz) mode

Lowest Channel (5 500 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5 392.77	51.31	H	PK	4.1	55.41	68.20	12.79
5 400.26	40.08	H	AV	4.1	44.18	54.00	9.82
5 470.00	45.89	H	PK	4.3	50.19	68.20	18.01
5 470.00	36.02	H	AV	4.3	40.32	54.00	13.68

Highest Channel (5 700 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5 725.00	52.68	H	PK	5.1	57.78	68.20	10.42
5 725.00	38.76	H	AV	5.1	43.86	54.00	10.14
5 726.45	57.92	H	PK	5.1	63.02	68.20	5.18
5 726.90	38.98	H	AV	5.1	44.08	54.00	9.92

802.11 ac(40 MHz) mode

Lowest Channel (5 510 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5 389.54	51.34	H	PK	4.1	55.44	68.20	12.76
5 389.64	41.17	H	AV	4.1	45.27	54.00	8.73
5 470.00	50.28	H	PK	4.3	54.58	68.20	13.62
5 470.00	38.90	H	AV	4.3	43.20	54.00	10.80

Highest Channel (5 670 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5 725.00	52.51	H	PK	5.1	57.61	68.20	10.59
5 725.00	32.63	H	AV	5.1	37.73	54.00	16.27
5 725.85	57.56	H	PK	5.1	62.66	68.20	5.54
5 725.79	33.97	H	AV	5.1	39.07	54.00	14.93

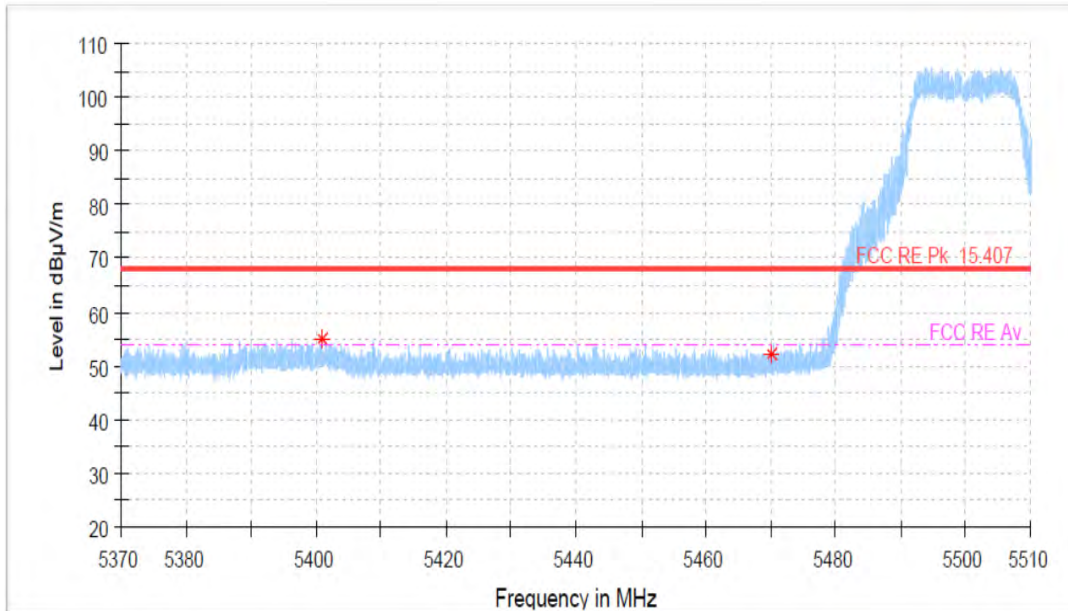
Notes:

- *Pol. : H = Horizontal, V = Vertical, Mode : PK = Peak, AV = Average
- **AF + CL + Amp. = Antenna Factor + Cable Loss + Amplifier.
- Other spurious was under 20 dB below Fundamental.
- The radiated emissions testing were made by rotating EUT through three orthogonal axes and rotating the receive antenna with horizontal, vertical polarization.
- Peak emissions were measured using RBW = 1 MHz, VBW = 3 MHz, Detector = Peak.
- Average emissions were measured using RBW = 1 MHz, VBW = 10 kHz, Detector = Peak.

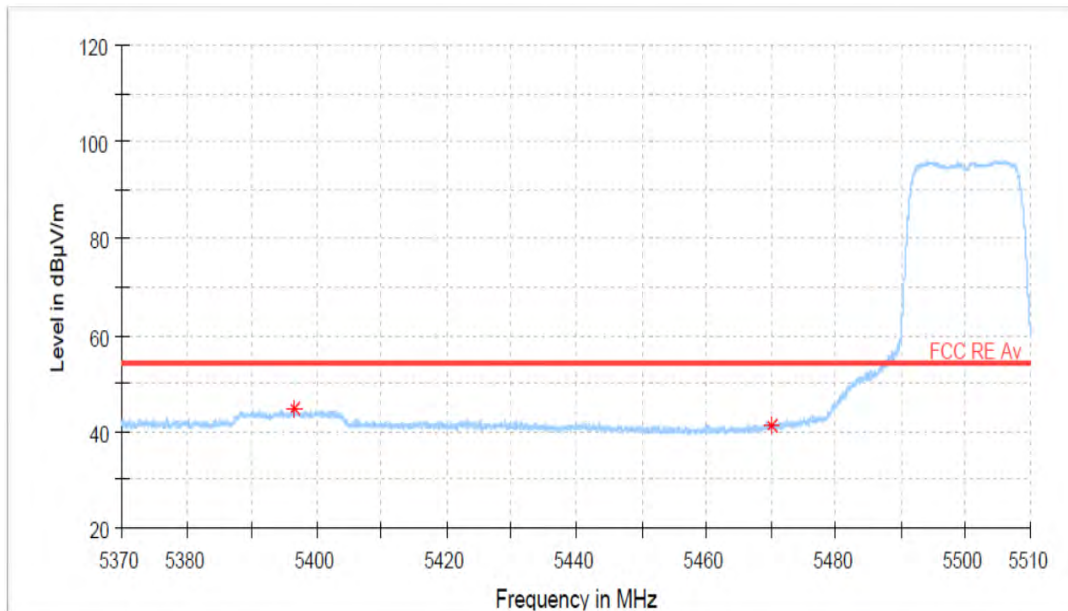
PLOTS OF EMISSIONS

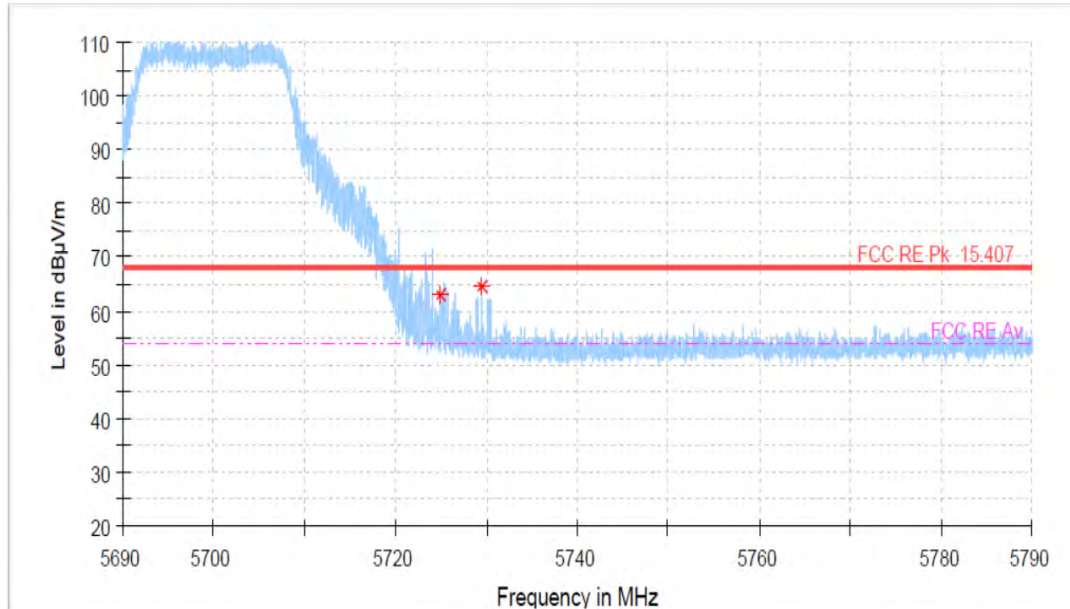
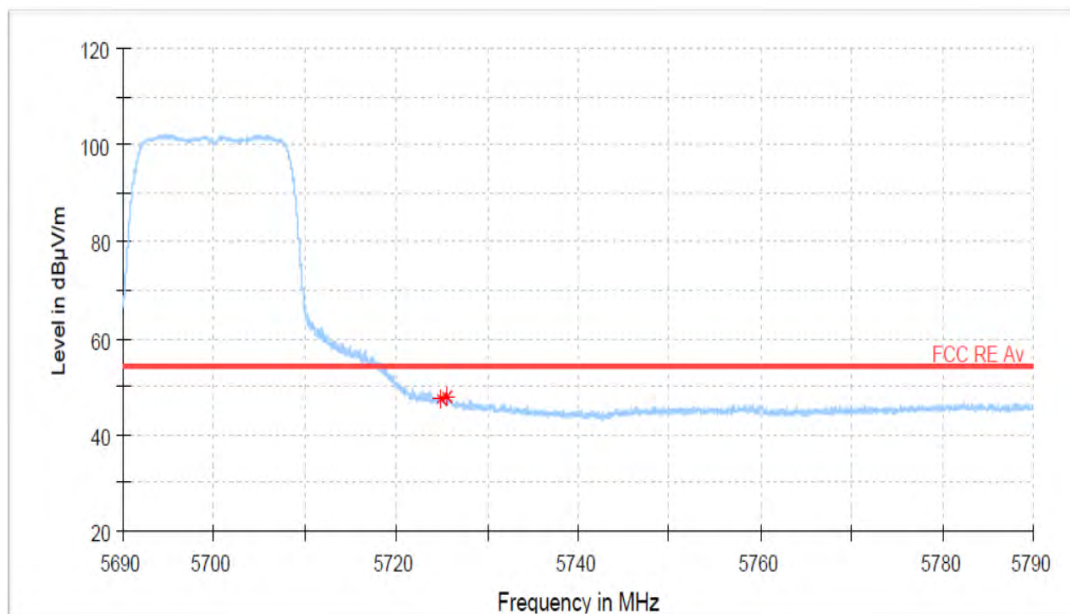
802.11 a mode

Lowest Channel (5 500 MHz)_Peak



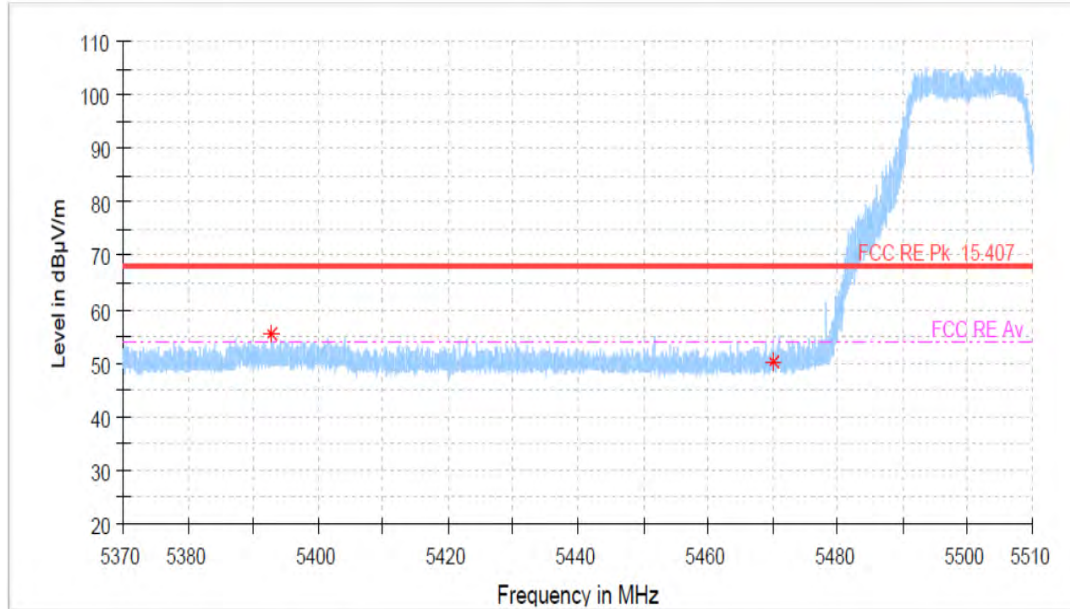
Lowest Channel (5 500 MHz)_Average



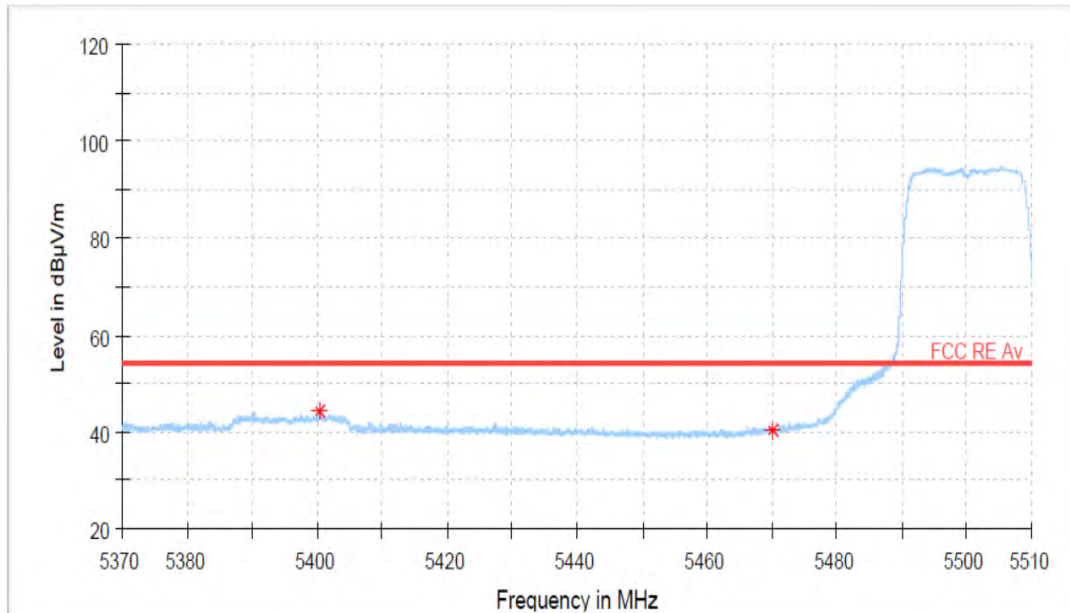
Highest Channel (5 700 MHz)_Peak**Highest Channel (5 700 MHz)_Average**

802.11 ac(20 MHz) mode

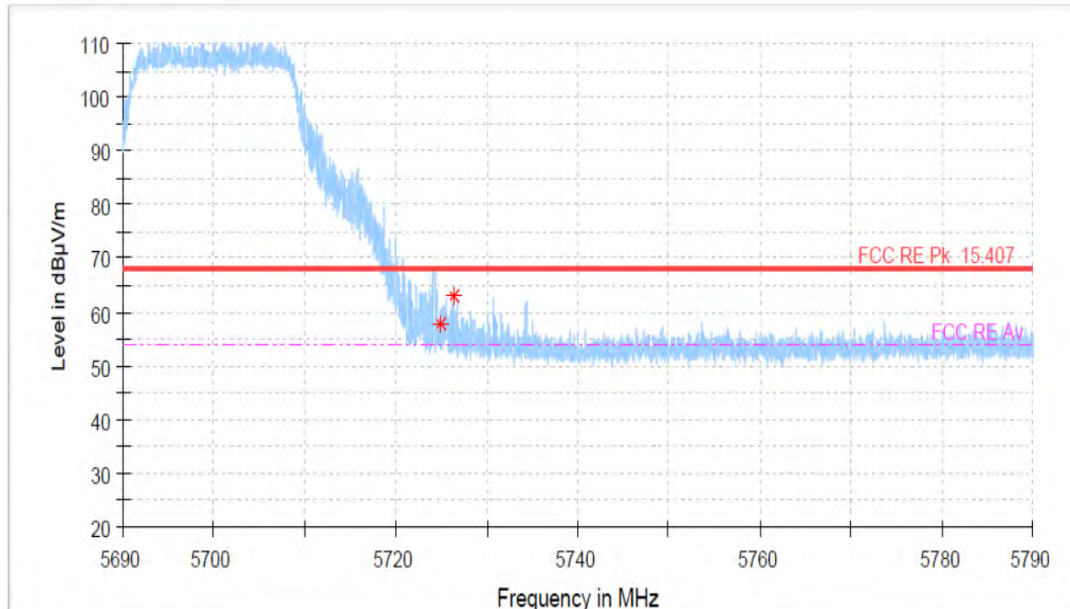
Lowest Channel (5 500 MHz)_Peak



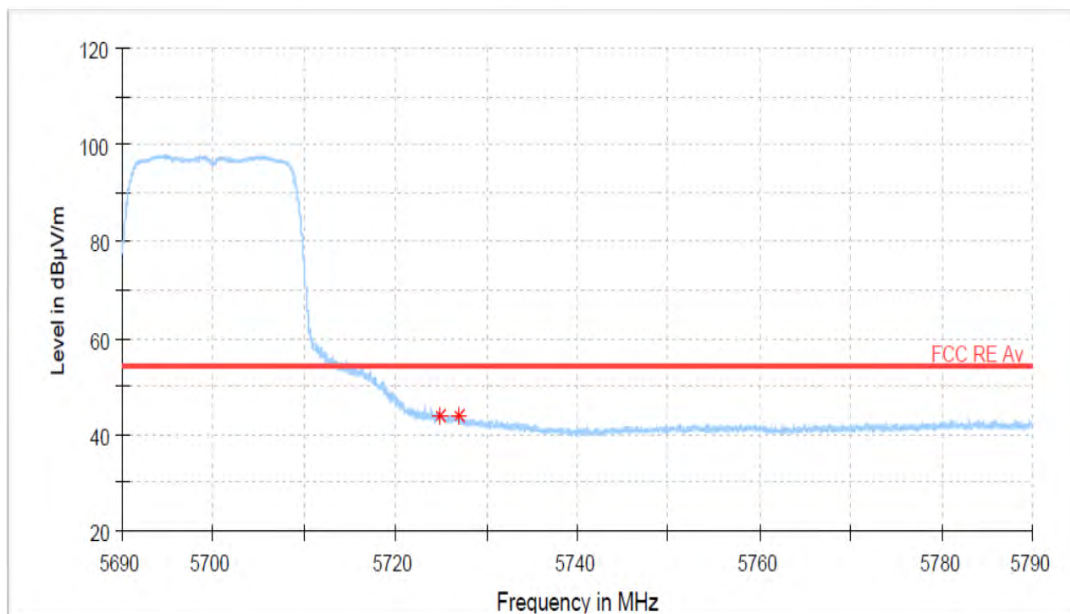
Lowest Channel (5 500 MHz)_Average



Highest Channel (5 700 MHz)_Peak

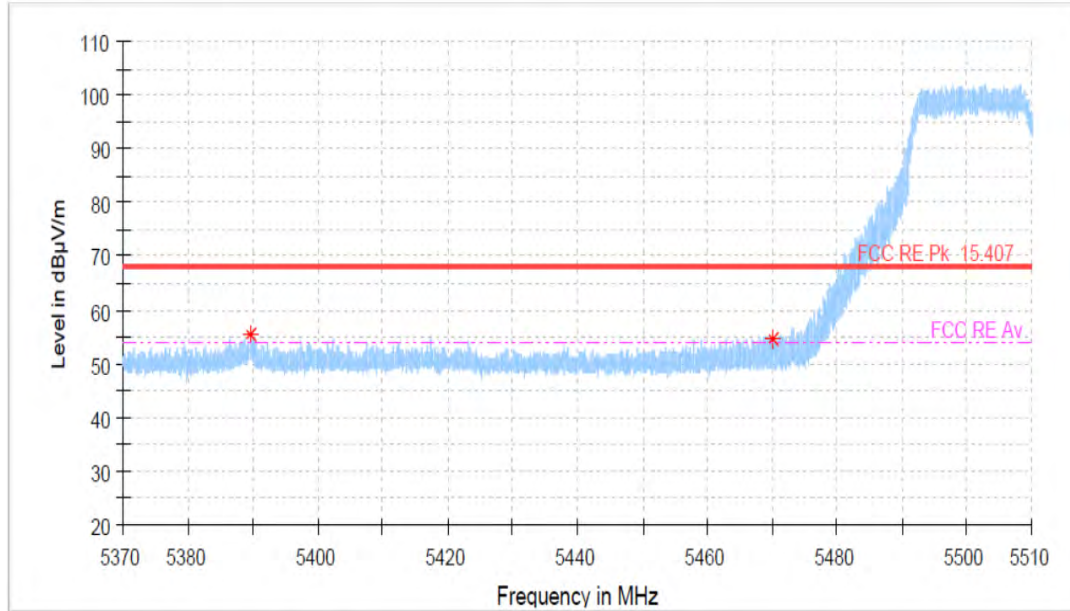


Highest Channel (5 700 MHz)_Average

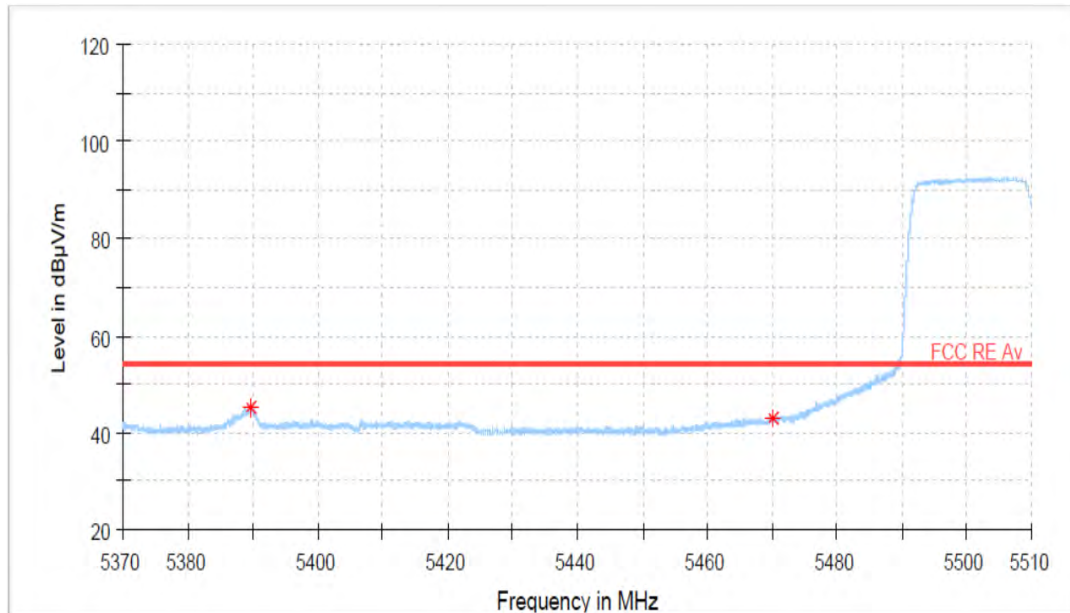


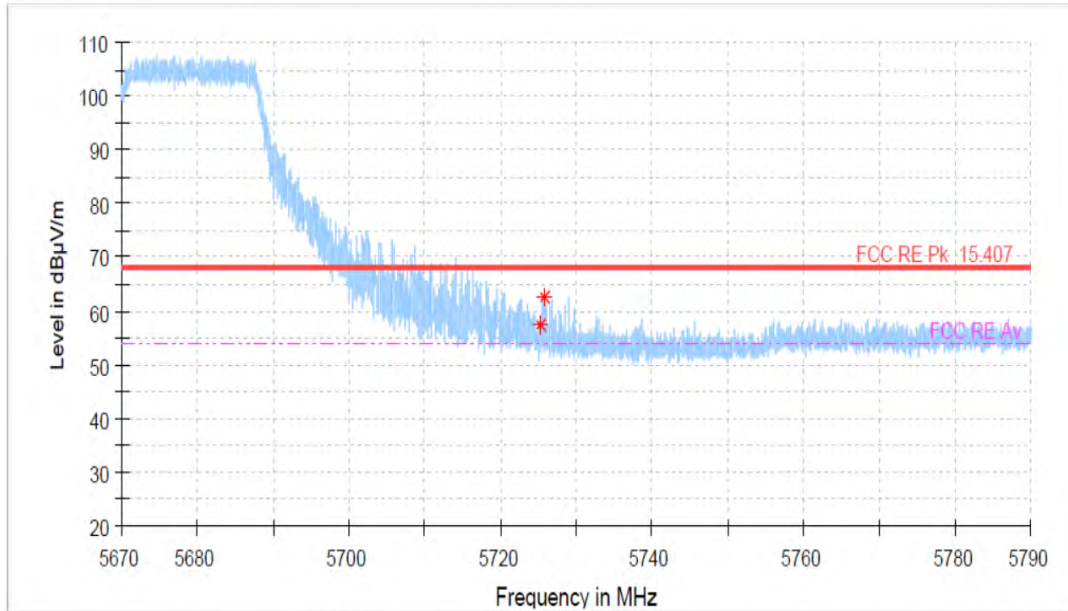
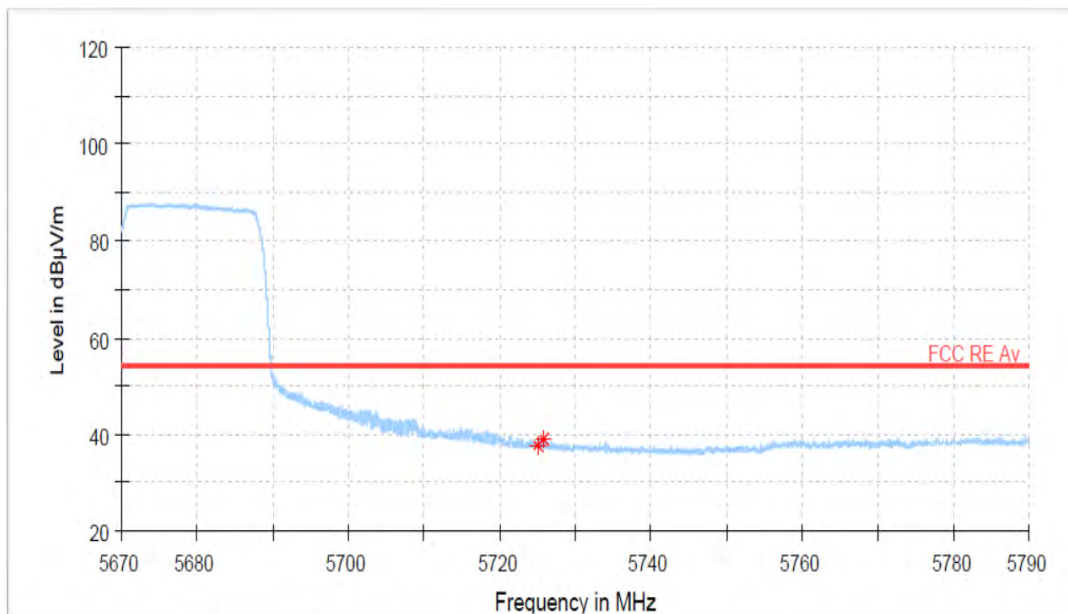
802.11 ac(40 MHz) mode

Lowest Channel (5 510 MHz)_Peak



Lowest Channel (5 510 MHz)_Average



Highest Channel (5 670 MHz)_Peak**Highest Channel (5 670 MHz)_Average**

7.5.3 Radiated Band Edge – U-NII-3 Band

FCC §15.209, §15.407(b)

Test Mode : Set to Lowest channel and Highest channel

Result

802.11 a mode

Lowest Channel (5 745 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5 717.76	64.35	H	PK	5.0	69.35	110.17	40.82
5 725.00	64.08	H	PK	5.1	69.18	122.13	52.95

Highest Channel (5 825 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5 850.00	54.17	H	PK	5.7	59.87	122.18	62.31
5 853.65	66.99	H	PK	5.7	72.69	113.88	41.19

802.11 ac(20 MHz) mode

Lowest Channel (5 745 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5 720.77	70.06	H	PK	5.0	75.06	112.56	37.50
5 725.00	61.64	H	PK	5.1	66.74	122.13	55.39

Highest Channel (5 825 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5 850.00	57.67	H	PK	5.7	63.37	122.18	58.81
5 855.15	67.86	H	PK	5.7	73.56	110.76	37.20

802.11 ac(40 MHz) mode

Lowest Channel (5 755 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5 712.83	68.98	H	PK	5.0	73.98	108.79	34.81
5 725.00	65.19	H	PK	5.1	70.29	122.13	51.84

Highest Channel (5 795 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode*	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5 850.00	53.16	H	PK	5.7	58.86	122.18	63.32
5 863.45	56.54	H	PK	5.8	62.34	108.44	46.10

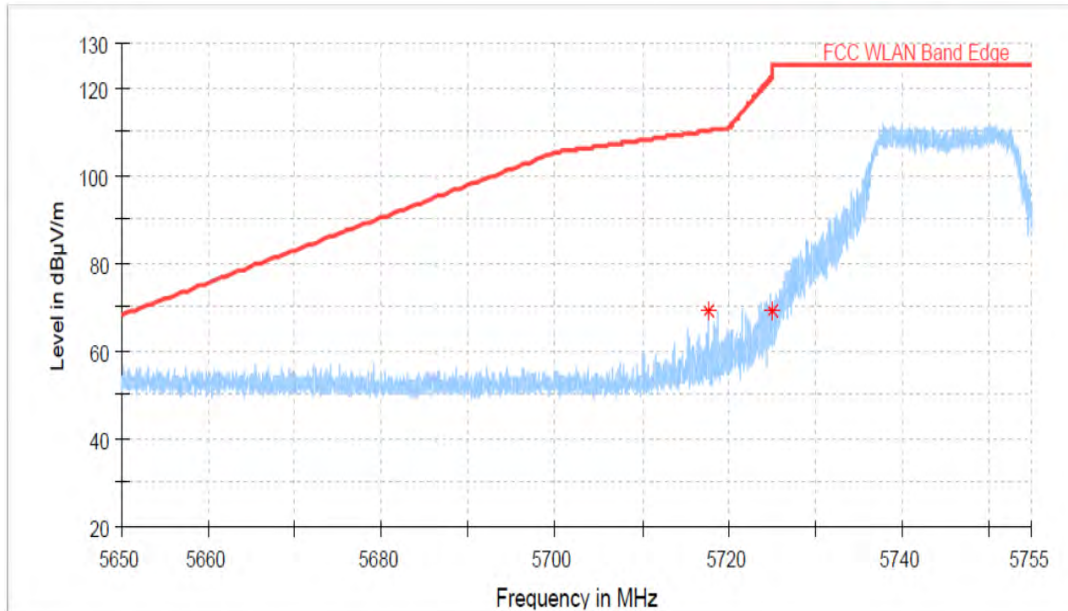
Notes:

- *Pol. : H = Horizontal, V = Vertical, Mode : PK = Peak, AV = Average
- **AF + CL + Amp. = Antenna Factor + Cable Loss + Amplifier.
- Other spurious was under 20 dB below Fundamental.
- The radiated emissions testing were made by rotating EUT through three orthogonal axes and rotating the receive antenna with horizontal, vertical polarization.
- Peak emissions were measured using RBW = 1 MHz, VBW = 3 MHz, Detector = Peak.
- Average emissions were measured using RBW = 1 MHz, VBW = 10 kHz, Detector = Peak.

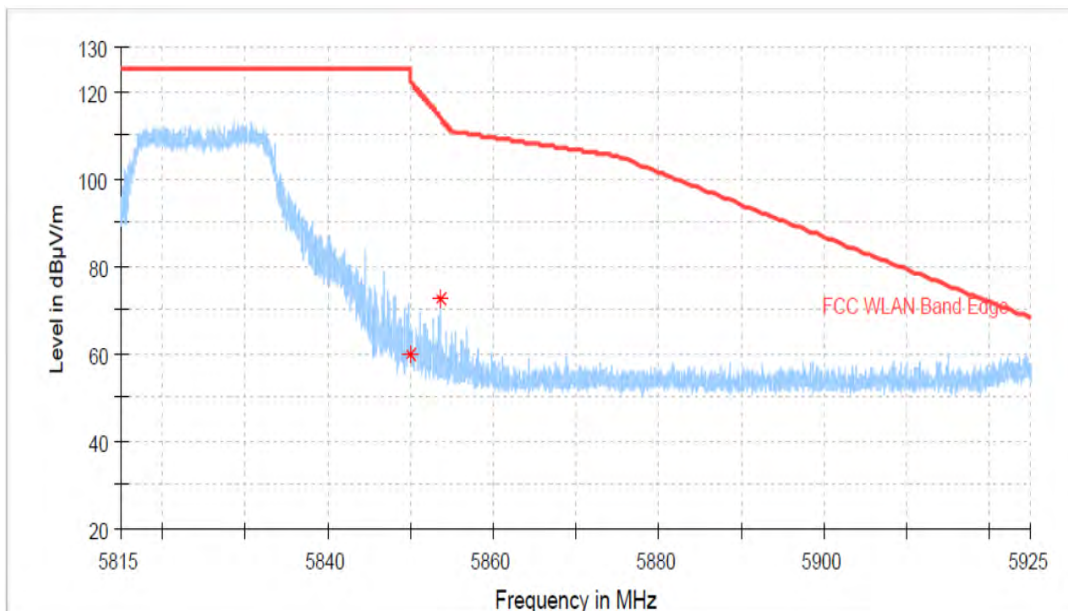
PLOTS OF EMISSIONS

802.11 a mode

Lowest Channel (5 745 MHz)_Peak

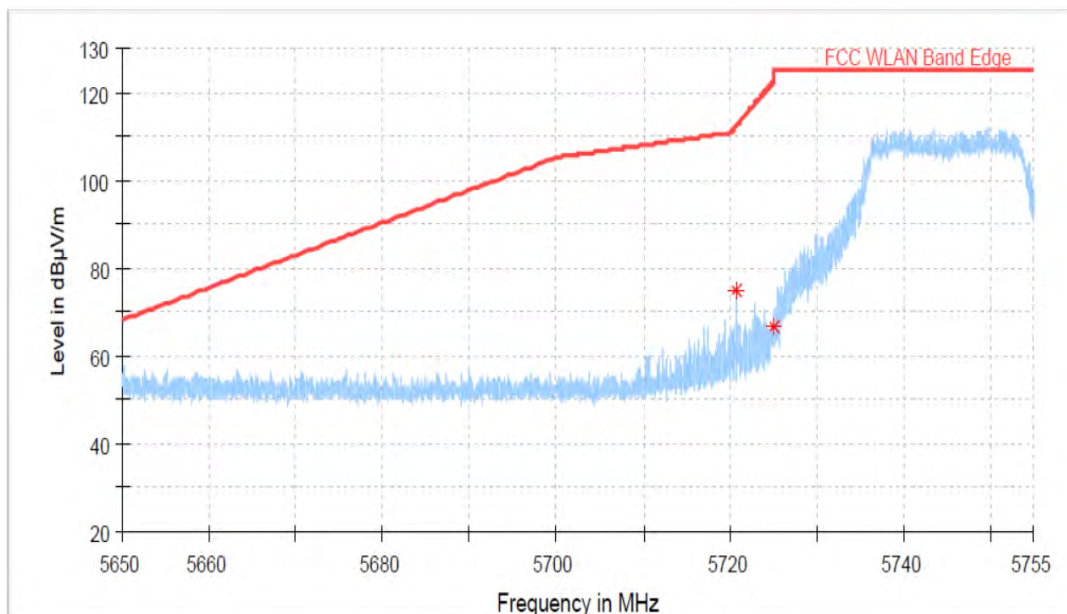


Highest Channel (5 825 MHz)_Peak

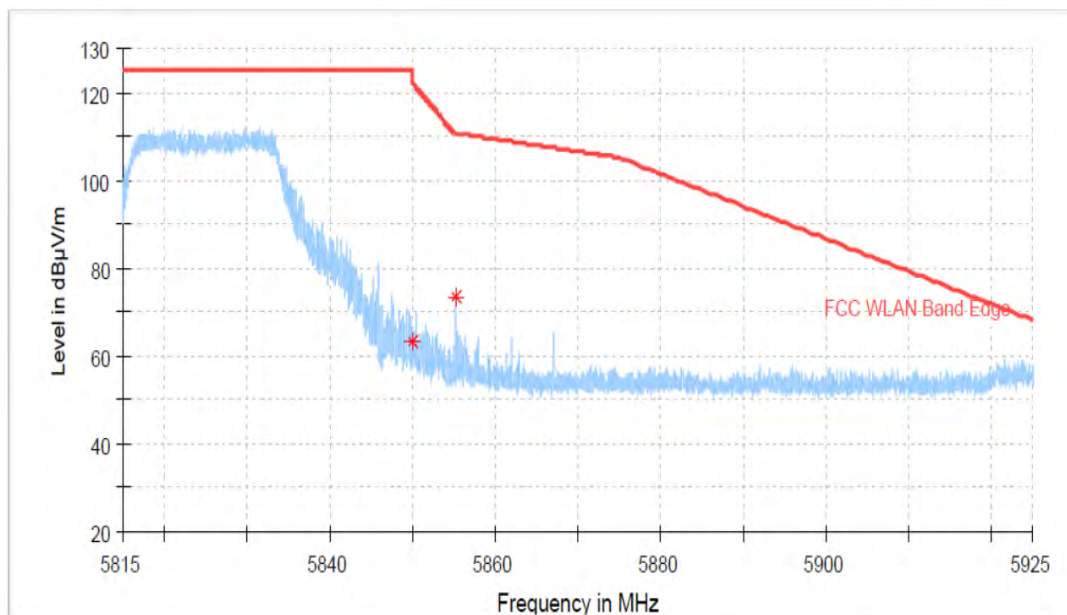


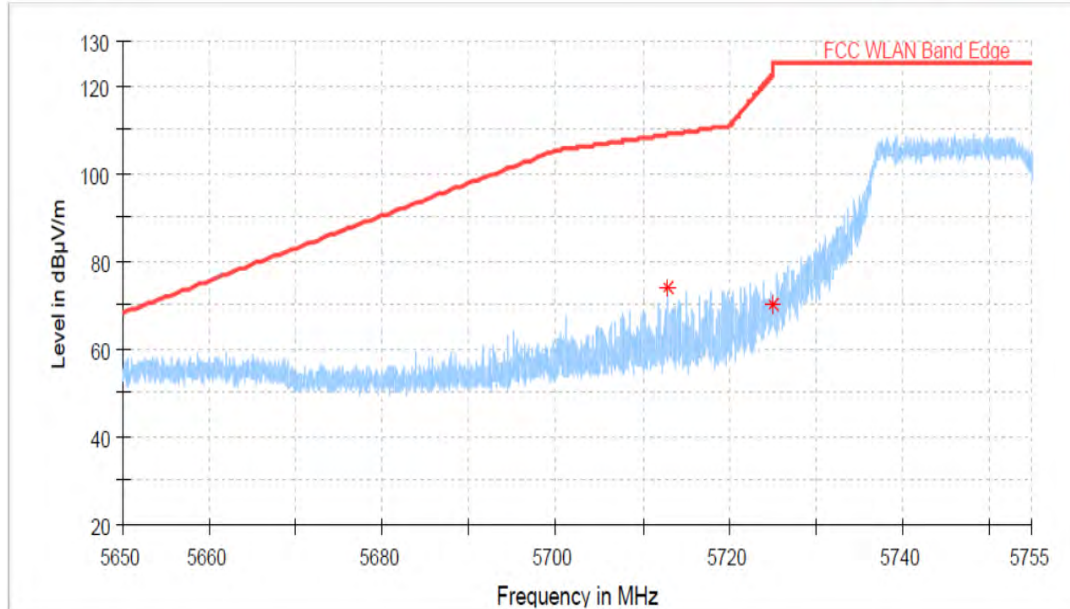
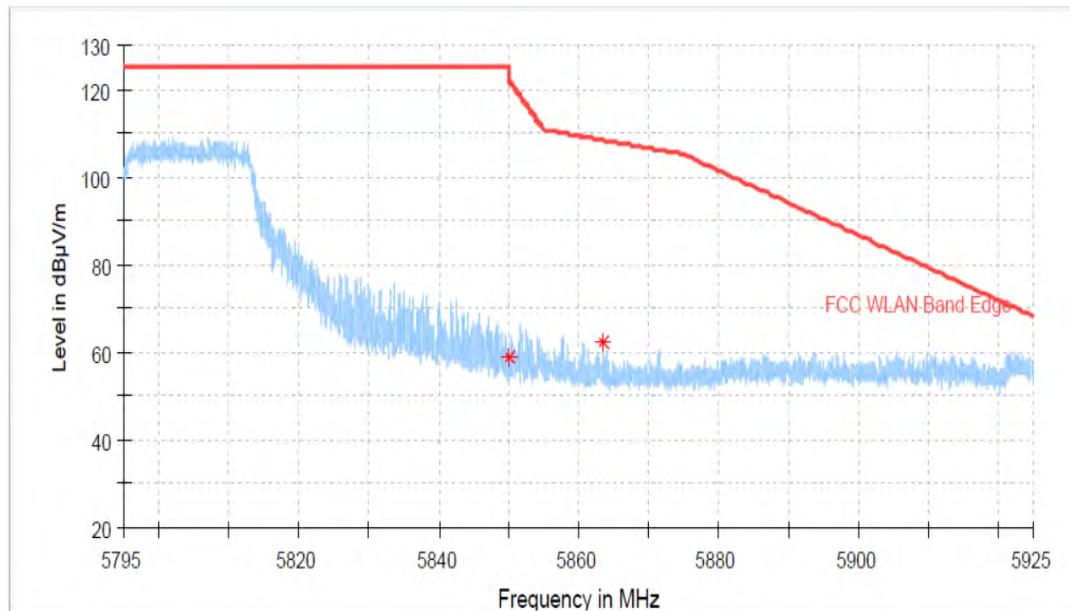
802.11 ac(20 MHz) mode

Lowest Channel (5 745 MHz)_Peak



Highest Channel (5 825 MHz)_Peak



802.11 ac(40 MHz) mode***Lowest Channel (5 755 MHz)_Peak******Highest Channel (5 795 MHz)_Peak***

7.6 Radiated Emissions_Below 1GHz

7.6.1 Radiated Emissions Below 1GHz – U-NII-1 Band

FCC §15.209

Result

802.11 a mode Highest Channel (5 240 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
38.92	34.07	V	QP	-7.4	26.67	40.00	13.33
59.39	34.72	V	QP	-6.5	28.22	40.00	11.78
83.93	37.12	V	QP	-11.3	25.82	40.00	14.18
92.15	38.00	V	QP	-8.3	29.70	43.50	13.80
173.24	49.77	H	QP	-9.3	40.47	43.50	3.03
850.01	32.11	H	QP	5.1	37.21	46.00	8.79

Radiated Measurements at 3meters

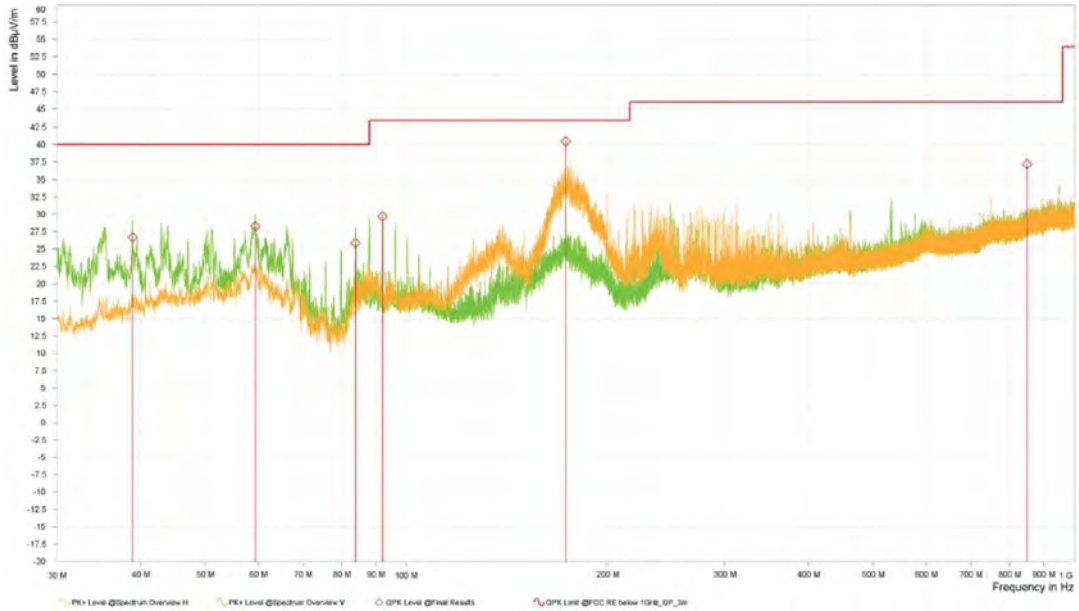
Notes:

1. The worst-case emission was reported.
2. *Pol. : H = Horizontal, V = Vertical.
3. **AF + CL + Amp. = Antenna Factor + Cable Loss + Amplifier.
4. Measurements using CISPR quasi-peak mode below 1 GHz.
5. The radiated emissions testing were made by rotating EUT through three orthogonal axes and rotating the receive antenna with horizontal, vertical polarization. The worst data was recorded.
6. No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).
Per FCC part 15.31(o), test results were not reported.
Although these tests were performed other than open field test site, adequate comparison measurements were confirmed against 30 m open are test site.
Therefore, sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 414788.
7. The limit is on the FCC §15.209.

PLOTS OF EMISSIONS

Worst Case

Radiated emission below 1GHz, Highest Channel (5 240 MHz)



7.6.2 Radiated Emissions Below 1GHz – U-NII-2A Band

FCC §15.209

Result

802.11 a mode Lowest Channel (5 260 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
38.92	33.94	V	QP	-7.4	26.54	40.00	13.46
59.39	34.56	V	QP	-6.5	28.06	40.00	11.94
83.96	39.46	V	QP	-11.3	28.16	40.00	11.84
92.15	37.72	V	QP	-8.3	29.42	43.50	14.08
173.27	48.57	H	QP	-9.3	39.27	43.50	4.23
850.01	32.11	H	QP	5.1	37.21	46.00	8.79

Radiated Measurements at 3meters

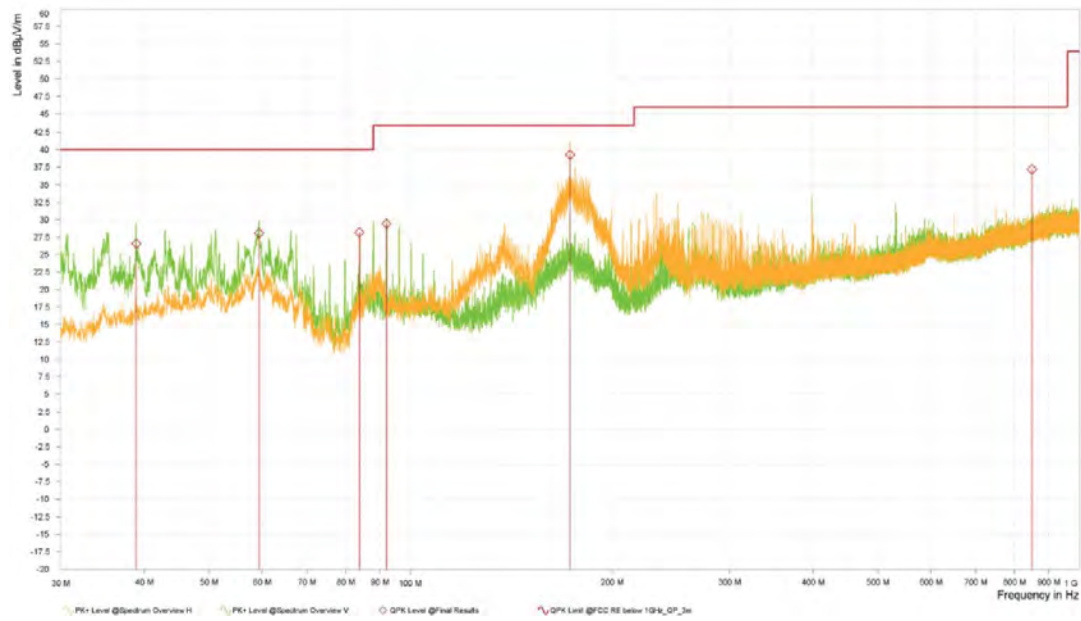
Notes:

1. The worst-case emission was reported.
2. *Pol. : H = Horizontal, V = Vertical.
3. **AF + CL + Amp. = Antenna Factor + Cable Loss + Amplifier.
4. Measurements using CISPR quasi-peak mode below 1 GHz.
5. The radiated emissions testing were made by rotating EUT through three orthogonal axes and rotating the receive antenna with horizontal, vertical polarization. The worst data was recorded.
6. No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).
Per FCC part 15.31(o), test results were not reported.
Although these tests were performed other than open field test site, adequate comparison measurements were confirmed against 30 m open are test site.
Therefore, sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 414788.
7. The limit is on the FCC §15.209.

PLOTS OF EMISSIONS

Worst Case

Radiated emission below 1GHz, Lowest Channel (5 260 MHz)



7.6.3 Radiated Emissions Below 1GHz – U-NII-2C Band

FCC §15.209

Result

802.11 ac(40 MHz) mode Lowest Channel (5 510 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
34.92	32.72	V	QP	-8.9	23.82	40.00	16.18
59.39	34.74	V	QP	-6.5	28.24	40.00	11.76
83.96	38.93	V	QP	-11.3	27.63	40.00	12.37
92.15	37.85	V	QP	-8.3	29.55	43.50	13.95
173.20	47.54	H	QP	-9.3	38.24	43.50	5.26
850.01	31.55	H	QP	5.1	36.65	46.00	9.35

Radiated Measurements at 3meters

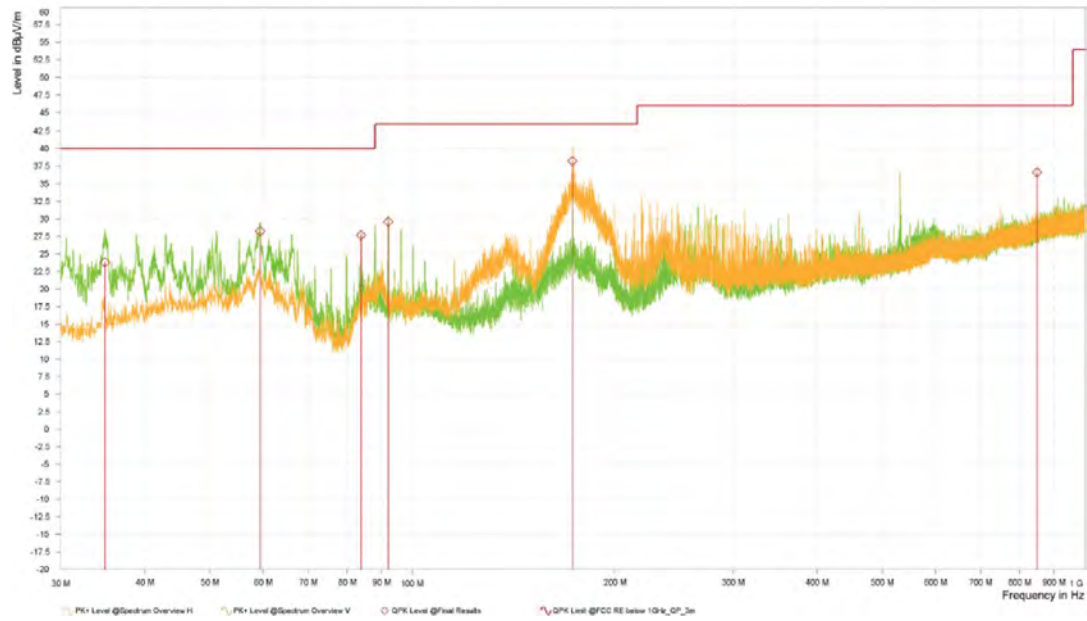
Notes:

1. The worst-case emission was reported.
2. *Pol. : H = Horizontal, V = Vertical.
3. **AF + CL + Amp. = Antenna Factor + Cable Loss + Amplifier.
4. Measurements using CISPR quasi-peak mode below 1 GHz.
5. The radiated emissions testing were made by rotating EUT through three orthogonal axes and rotating the receive antenna with horizontal, vertical polarization. The worst data was recorded.
6. No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).
Per FCC part 15.31(o), test results were not reported.
Although these tests were performed other than open field test site, adequate comparison measurements were confirmed against 30 m open are test site.
Therefore, sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 414788.
7. The limit is on the FCC §15.209.

PLOTS OF EMISSIONS

Worst Case

Radiated emission below 1GHz, Lowest Channel (5 510 MHz)



7.6.4 Radiated Emissions Below 1GHz – U-NII-3 Band

FCC §15.209

Result

802.11 a mode Middle channel (5 785 MHz)

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	Mode	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
42.97	31.60	V	QP	-6.2	25.40	40.00	14.60
59.36	33.98	V	QP	-6.5	27.48	40.00	12.52
83.96	39.46	V	QP	-11.3	28.16	40.00	11.84
92.15	37.77	V	QP	-8.3	29.47	43.50	14.03
173.20	46.63	H	QP	-9.3	37.33	43.50	6.17
850.01	31.49	H	QP	5.1	36.59	46.00	9.41

Radiated Measurements at 3meters

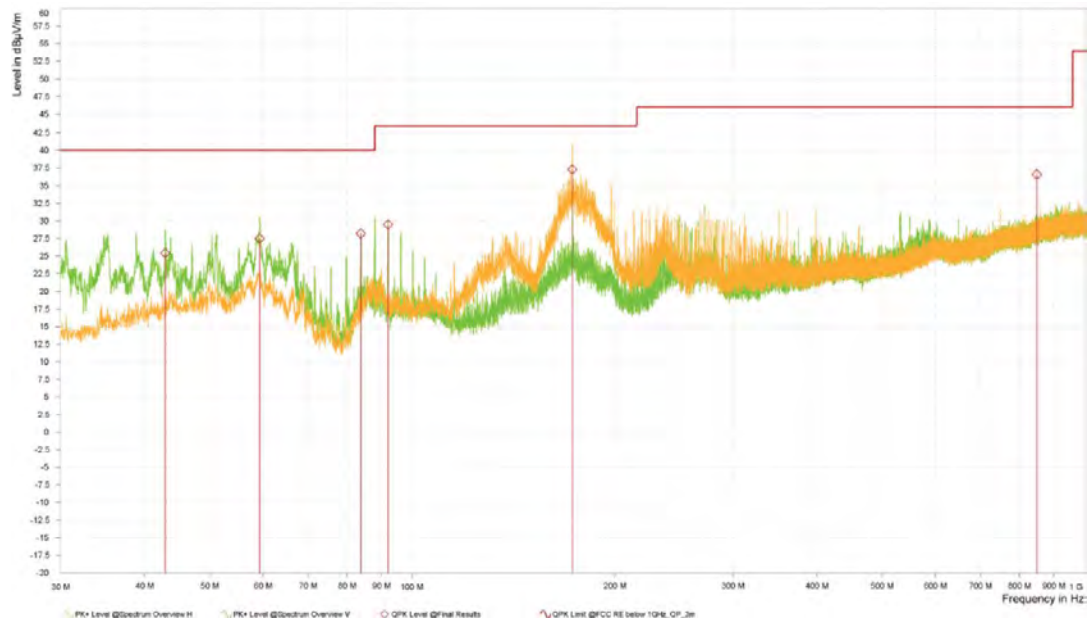
Notes:

1. The worst-case emission was reported.
2. *Pol. : H = Horizontal, V = Vertical.
3. **AF + CL + Amp. = Antenna Factor + Cable Loss + Amplifier.
4. Measurements using CISPR quasi-peak mode below 1 GHz.
5. The radiated emissions testing were made by rotating EUT through three orthogonal axes and rotating the receive antenna with horizontal, vertical polarization. The worst data was recorded.
6. No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).
Per FCC part 15.31(o), test results were not reported.
Although these tests were performed other than open field test site, adequate comparison measurements were confirmed against 30 m open are test site.
Therefore, sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 414788.
7. The limit is on the FCC §15.209.

PLOTS OF EMISSIONS

Worst Case

Radiated emission below 1GHz, Middle channel (5 785 MHz)



7.7 AC Line Conducted Emissions

FCC §15.207

Result

802.11 a mode, Middle channel (5 785 MHz)

Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.152985	---	30.85	55.30	24.45	9.000	L1	9.9
0.152985	49.40	---	65.30	15.91	9.000	L1	9.9
0.170895	45.50	---	64.43	18.94	9.000	N	10.3
0.170895	---	27.13	54.43	27.30	9.000	N	10.3
0.176865	45.41	---	64.16	18.75	9.000	N	10.2
0.176865	---	27.74	54.16	26.42	9.000	N	10.2
0.185820	44.39	---	63.78	19.39	9.000	L1	10.1
0.185820	---	26.15	53.78	27.63	9.000	L1	10.1
0.209700	---	28.62	52.83	24.21	9.000	N	10.0
0.209700	42.34	---	62.83	20.48	9.000	N	10.0
0.400740	40.78	---	57.74	16.96	9.000	L1	9.9
0.400740	---	34.27	47.74	13.47	9.000	L1	9.9

Line Conducted Emission Tabulated Data

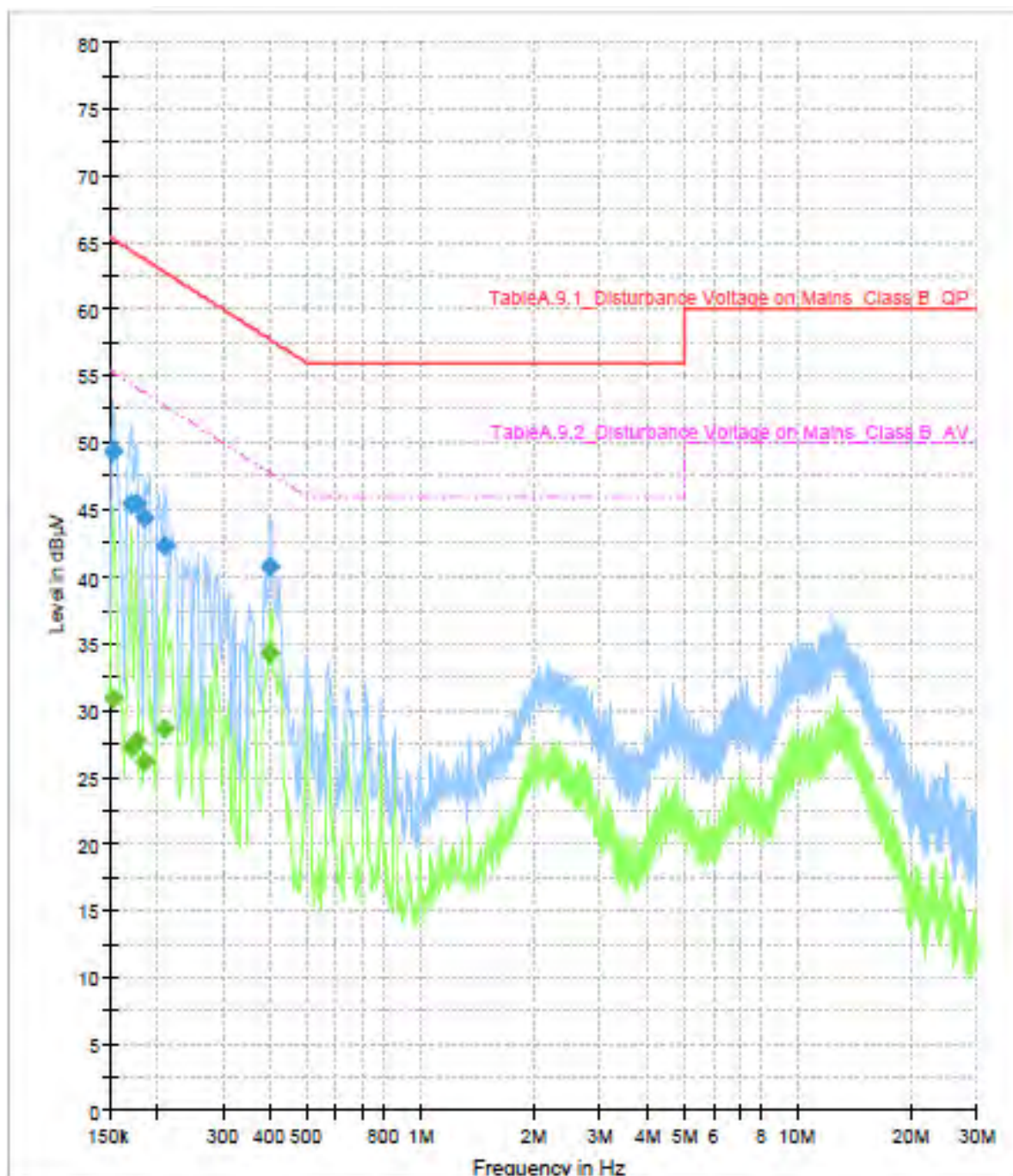
Notes:

1. Measurement using CISPR quasi-peak mode & average mode.
2. The worst channel was investigated and the worst-case emission are reported. See attached Plots.
3. Middle channel (5 785 MHz) is the worst case.
4. *) Factor = LISN + Cable loss
5. **) LINE : L = Line, N = Neutral
6. The limit is on the FCC §15.207.

PLOTS OF EMISSIONS

Worst Case

AC Line Conducted emission, 802.11 a mode, Middle channel (5 785 MHz)



8. TEST EQUIPMENT

No.	Instrument	Manufacture	Model	Serial No.	Calibration Date	Next Calibration Date
1	DIGITAL MULTIMETER	EZ DIGITAL	DM-334	2111395	10/8/2024	10/8/2025
2	Humidity Temperature	Lutron	MHB-382SD	AK.26553	10/16/2024	10/16/2025
3	Spectrum Analyzer	Agilent	E4440A	MY44303257	10/7/2024	10/7/2025
4	Signal Generator	R&S	SMB100A	175861	3/29/2024	3/29/2025
5	10 dB Attenuator	API technologies corp	40A2W-10	1916	7/3/2024	7/3/2025
6	Signal & Spectrum Analyzer	R&S	FSW43	104084	3/27/2024	3/27/2025
7	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120 D	9120D-508	7/9/2024	7/9/2025
8	Horn Antenna	Q-par Angus	QMS-00208	17636	8/28/2024	8/28/2025
9	Horn Antenna	Q-par Angus	QSH20S20	8179	7/9/2024	7/9/2025
10	Horn Antenna	Q-par Angus	QSH22K20	8180	7/9/2024	7/9/2025
11	Signal Conditioning Unit	R&S	SCU-18F	180025	3/27/2024	3/27/2025
12	Signal Conditioning Unit	R&S	SCU-26	10011	7/5/2024	7/5/2025
13	Signal Conditioning Unit	R&S	SCU 40	100380	7/5/2024	7/5/2025
14	WiFi Filter Bank	R&S	U083	N/A	N/A	N/A
15	TRILOG Broadband Test Antenna	Schwarzbeck	VULB 9163	01431	11/11/2024	11/11/2026
16	EMI TEST RECEIVER	R&S	ESW44	103318	1/8/2025	1/8/2026
17	AMPLIFIER	HP	8447F	2805A03406	1/8/2025	1/8/2026
18	HYGROMETER	DRETEC	O-230	NK-B-E-0157	1/13/2025	1/13/2026
19	TWO-LINE V-NETWORK	R&S	ENV216	102829	7/3/2024	7/3/2025
20	EMI TEST RECEIVER	R&S	ESR3	102930	7/2/2024	7/2/2025
21	Active Loop Antenna	R&S	HFH2-Z2E	101190	1/13/2025	1/13/2026
22	BIAS UNIT	R&S	IN 600	101621	N/A	N/A
23	Software	R&S	EMC32	Version: 10.60.20	N/A	N/A
24	Software	R&S	ELEKTRA	Version: 5.03.1	N/A	N/A

9. ACCURACY OF MEASUREMENT & DECISION RULE

9.1 Uncertainty Calculation

The Measurement Uncertainties stated were calculated in accordance with the requirements of measurement uncertainty contained in CISPR 16-4-2 with the confidence level of 95%

PARAMETER	UNCERTAINTY
Radiated Disturbance, Below 30 MHz	4.36 dB
Radiated Disturbance, 30 MHz to 1 GHz	5.60 dB
Radiated Disturbance, 1 GHz ~ 18 GHz	3.70 dB
Radiated Disturbance, 18 GHz ~ 26.5 GHz	4.90 dB
Radiated Disturbance, 26.5 GHz ~ 40 GHz	5.00 dB

9.2 Decision rule

The choice of whether or not to include the measurement uncertainty of the measuring system used in the test in the conformance determination.:

- ☐ Application of internal procedures used in type testing where traceability of measurement uncertainty is established.
- ☒ Applying the decision that the standard used for type testing does not require it.

END REPORT