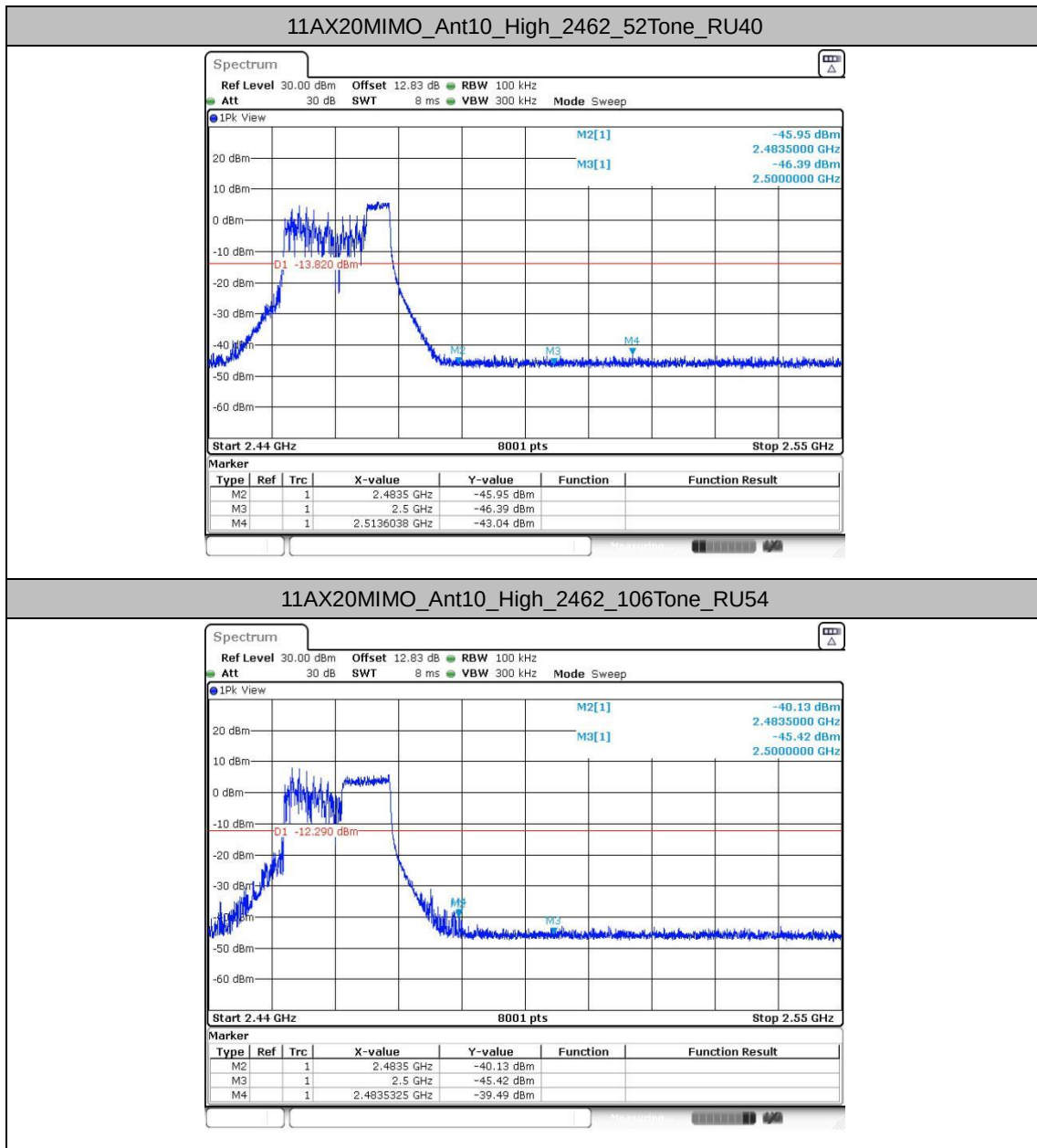
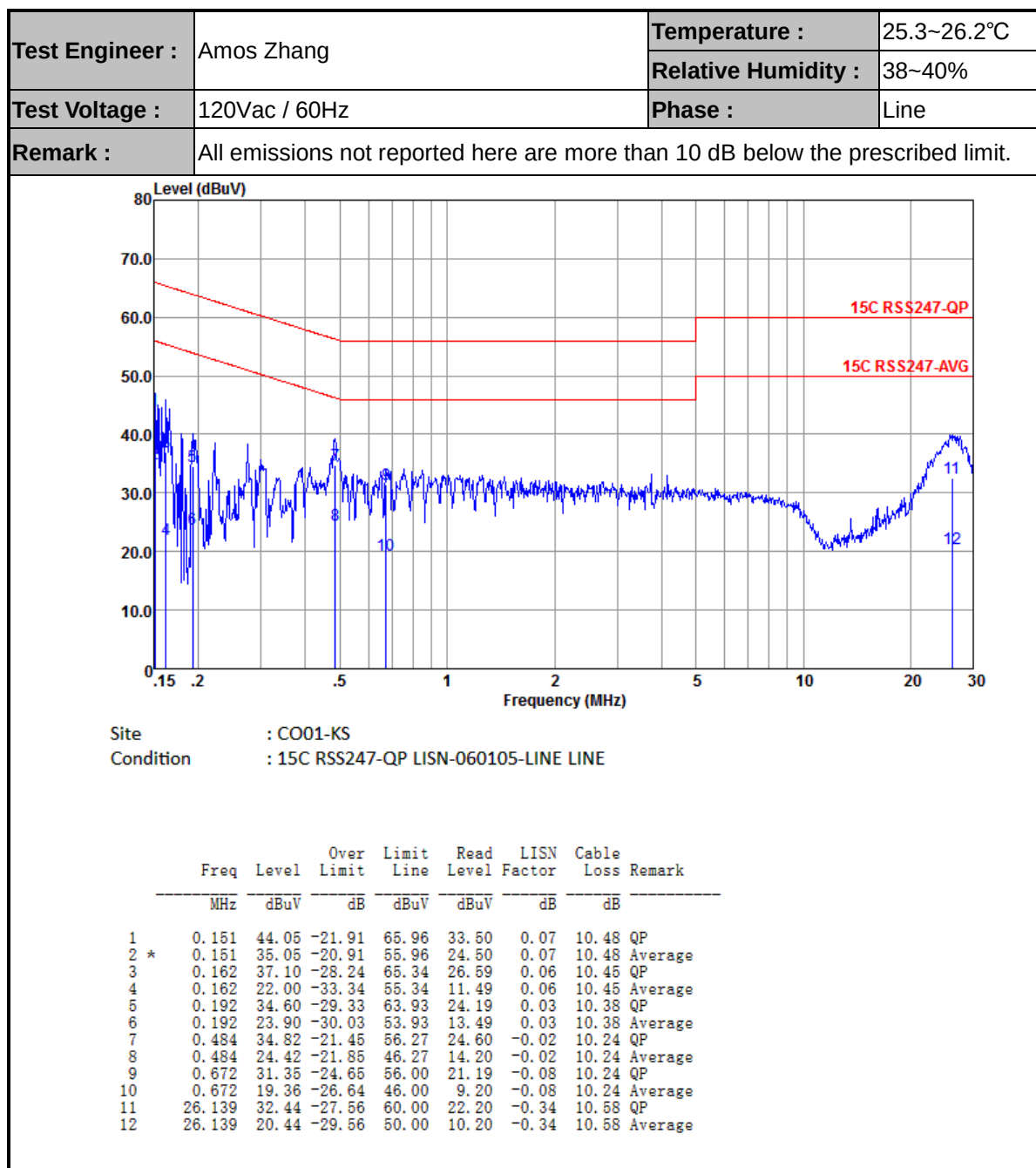




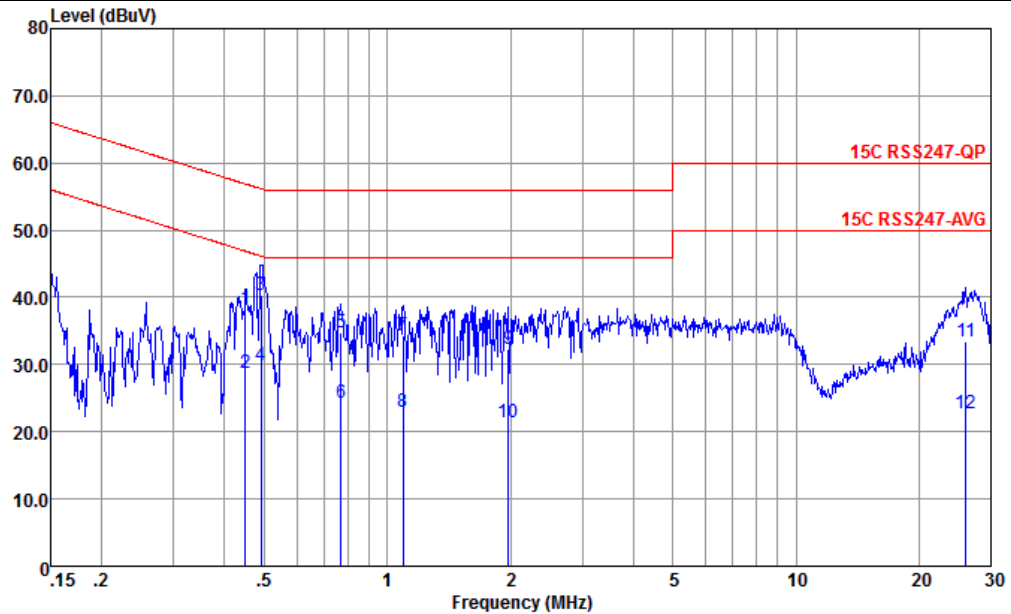


Appendix B. AC Conducted Emission Test Results





Test Engineer :	Amos Zhang	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-KS
Condition : 15C RSS247-QP LISN-060105-NEUTRAL NEUTRAL

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.449	38.38	-18.51	56.89	28.20	-0.07	10.25	QP
2	0.449	28.68	-18.21	46.89	18.50	-0.07	10.25	Average
3 *	0.491	40.36	-15.78	56.14	30.20	-0.08	10.24	QP
4	0.491	29.76	-16.38	46.14	19.60	-0.08	10.24	Average
5	0.771	34.74	-21.26	56.00	24.60	-0.10	10.24	QP
6	0.771	24.34	-21.66	46.00	14.20	-0.10	10.24	Average
7	1.094	34.32	-21.68	56.00	24.20	-0.11	10.23	QP
8	1.094	23.02	-22.98	46.00	12.90	-0.11	10.23	Average
9	1.980	32.31	-23.69	56.00	22.20	-0.12	10.23	QP
10	1.980	21.41	-24.59	46.00	11.30	-0.12	10.23	Average
11	26.001	33.43	-26.57	60.00	23.20	-0.35	10.58	QP
12	26.001	22.83	-27.17	50.00	12.60	-0.35	10.58	Average

Note:

- Level(dBμV) = Read Level(dBμV) + LISN Factor(dB) + Cable Loss(dB)
- Over Limit(dB) = Level(dBμV) – Limit Line(dBμV)



Appendix C. Radiated Spurious Emission

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
9+10		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2384.62	49.55	-24.45	74	46.69	32.31	7.1	36.55	100	346	P	H
		2386.18	39.08	-14.92	54	36.09	32.4	7.1	36.51	100	346	A	H
	*	2412	106.76	-	-	103.85	32.39	7.13	36.61	100	346	P	H
	*	2410	104.36	-	-	101.45	32.39	7.13	36.61	100	346	A	H
		2387.74	51.28	-22.72	74	48.29	32.4	7.1	36.51	151	81	P	V
		2386.18	44.49	-9.51	54	41.5	32.4	7.1	36.51	151	81	A	V
	*	2412	110.49	-	-	107.58	32.39	7.13	36.61	151	81	P	V
	*	2412	106.83	-	-	103.92	32.39	7.13	36.61	151	81	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
9+10		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		4830	41.26	-32.74	74	62.27	34	10.25	65.26	300	0	P	H
		4830	41.43	-32.57	74	62.44	34	10.25	65.26	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11g (Band Edge @ 3m)

WIFI Ant. 9+10	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 11 2462MHz	*	2456	110.77	-	-	108.11	32.36	7.22	36.92	120	349	P	H
	*	2454	103.2	-	-	100.54	32.36	7.22	36.92	120	349	A	H
		2483.68	61.84	-12.16	74	59.27	32.34	7.25	37.02	120	349	P	H
	!	2483.5	50.04	-3.96	54	47.47	32.34	7.25	37.02	120	349	A	H
	*	2454	110.82	-	-	108.16	32.36	7.22	36.92	112	93	P	V
	*	2454	104.63	-	-	101.97	32.36	7.22	36.92	112	93	A	V
		2483.5	64.24	-9.76	74	61.67	32.34	7.25	37.02	112	93	P	V
	!	2483.5	50.63	-3.37	54	48.06	32.34	7.25	37.02	112	93	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz
WIFI 802.11g (Harmonic @ 3m)

WIFI Ant. 9+10	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 11 2462MHz		4920	40.12	-33.88	74	61.08	34	10.34	65.3	300	0	P	H
		7380	41.5	-32.5	74	59.9	35.78	12.73	66.91	300	0	P	H
		4920	39.92	-34.08	74	60.88	34	10.34	65.3	100	0	P	V
		7380	41.22	-32.78	74	59.62	35.78	12.73	66.91	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11 ax HE20 Full (Band Edge @ 3m)

WIFI Ant. 9+10	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE20 Full CH 01 2412MHz		2389.56	60.62	-13.38	74	57.63	32.4	7.1	36.51	220	348	P	H
		2389.95	47.67	-6.33	54	44.68	32.4	7.1	36.51	220	348	A	H
	*	2408	109.7	-	-	106.79	32.39	7.13	36.61	220	348	P	H
	*	2406	99.31	-	-	96.4	32.39	7.13	36.61	220	348	A	H
		2388.26	64.74	-9.26	74	61.75	32.4	7.1	36.51	111	105	P	V
	!	2389.95	49.41	-4.59	54	46.42	32.4	7.1	36.51	111	105	A	V
	*	2412	112.27	-	-	109.36	32.39	7.13	36.61	111	105	P	V
	*	2412	102.39	-	-	99.48	32.39	7.13	36.61	111	105	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11 ax HE20 Full (Harmonic @ 3m)

WIFI Ant. 9+10	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE20 Full CH 01 2412MHz		4830	40	-34	74	61.01	34	10.25	65.26	300	0	P	H
		4830	40.7	-33.3	74	61.71	34	10.25	65.26	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11ax HE20 Partial 106 (Band Edge @ 3m)

WIFI Ant. 9+10	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE20 Partial 106/54 CH 11 2462MHz		2483.5	56.19	-17.81	74	53.62	32.34	7.25	37.02	302	60	P	H
		2483.5	38.72	-15.28	54	36.15	32.34	7.25	37.02	302	60	A	H
		2468	110.44	-	-	107.78	32.36	7.22	36.92	302	60	P	H
		2470	100.58	-	-	97.92	32.36	7.22	36.92	302	60	A	H
		2485.12	57.08	-16.92	74	54.51	32.34	7.25	37.02	100	44	P	V
		2483.5	38.7	-15.3	54	36.13	32.34	7.25	37.02	100	44	A	V
		2468	110.65	-	-	107.99	32.36	7.22	36.92	100	44	P	V
		2466	101.13	-		98.47	32.36	7.22	36.92	100	44	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11 ax HE40 Full (Band Edge @ 3m)

WIFI Ant. 9+10	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE40 Full CH 03 2422MHz		2389.69	61.62	-12.38	74	58.63	32.4	7.1	36.51	100	348	P	H
	!	2389.82	49.05	-4.95	54	46.06	32.4	7.1	36.51	100	348	A	H
	*	2412	106.23	-	-	103.32	32.39	7.13	36.61	100	348	P	H
	*	2410	95.6	-	-	92.69	32.39	7.13	36.61	100	348	A	H
		2484.58	50.48	-23.52	74	47.91	32.34	7.25	37.02	100	348	P	H
		2483.5	39.39	-14.61	54	36.82	32.34	7.25	37.02	100	348	A	H
		2389.3	61.72	-12.28	74	58.73	32.4	7.1	36.51	114	70	P	V
	!	2389.3	49.19	-4.81	54	46.2	32.4	7.1	36.51	114	70	A	V
	*	2412	99.24	-	-	96.33	32.39	7.13	36.61	114	70	A	V
	*	2410	108.54	-	-	105.63	32.39	7.13	36.61	114	70	P	V
		2488.36	50.39	-23.61	74	47.94	32.33	7.25	37.13	114	70	P	V
		2483.68	38.91	-15.09	54	36.34	32.34	7.25	37.02	114	70	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**2.4GHz 2400~2483.5MHz****WIFI 802.11 ax HE40 Full (Harmonic @ 3m)**

WIFI Ant. 9+10	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax		4845	40.72	-33.28	74	61.73	34	10.25	65.26	300	0	P	H
HE40 Full		7260	41.93	-32.07	74	59.96	35.75	12.72	66.5	300	0	P	H
CH 03		4845	40.39	-33.61	74	61.4	34	10.25	65.26	100	0	P	V
2422MHz		7260	41.02	-32.98	74	59.05	35.75	12.72	66.5	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

2.4GHz WIFI 802.11g (LF)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
9+10		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11g LF		36.79	16.55	-23.45	40	27.74	20.92	0.8	32.91	-	-	P	H
		108.57	21.99	-21.51	43.5	36.33	16.95	1.57	32.86	-	-	P	H
		157.07	23.32	-20.18	43.5	37.95	16.28	1.91	32.82	-	-	P	H
		236.61	23.56	-22.44	46	36.39	17.61	2.35	32.79	-	-	P	H
		747.8	26.17	-19.83	46	28.98	25.81	4.18	32.8	-	-	P	H
		952.47	28.47	-17.53	46	27.82	27.55	4.72	31.62	-	-	P	H
		37.76	26.04	-13.96	40	37.76	20.35	0.85	32.92	-	-	P	V
		94.02	23.01	-20.49	43.5	38.5	15.92	1.46	32.87	-	-	P	V
		145.43	23.26	-20.24	43.5	37.77	16.48	1.83	32.82	-	-	P	V
		250.19	22.88	-23.12	46	34.81	18.42	2.42	32.77	-	-	P	V
		424.79	21.82	-24.18	46	29.52	22.1	3.14	32.94	-	-	P	V
		689.6	24.3	-21.7	46	28.1	25.23	4.02	33.05	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	P eak or A verage
H/V	H orizontal or V ertical



A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
9+10		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)

2. Level(dBμV/m) =

Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

3. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

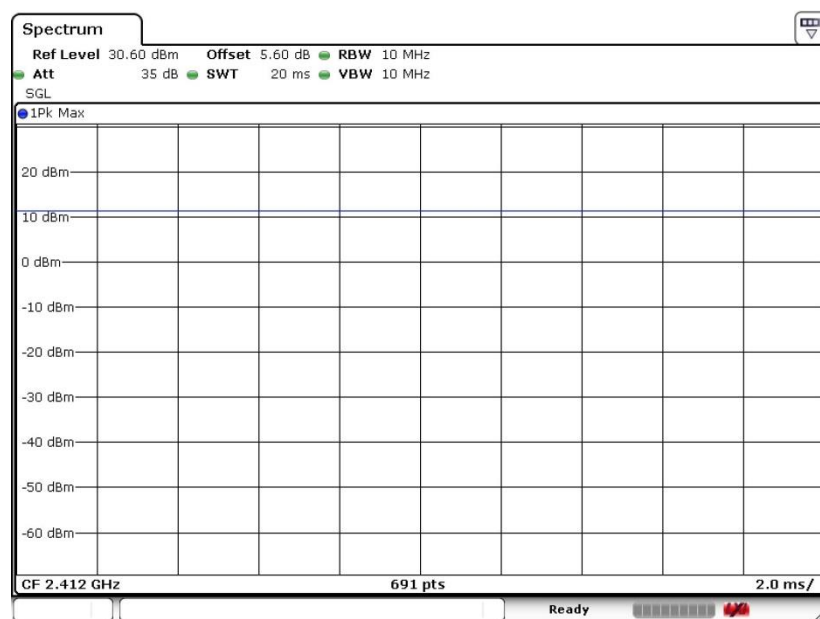
= -10.46(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.

Appendix D. Duty Cycle Plots

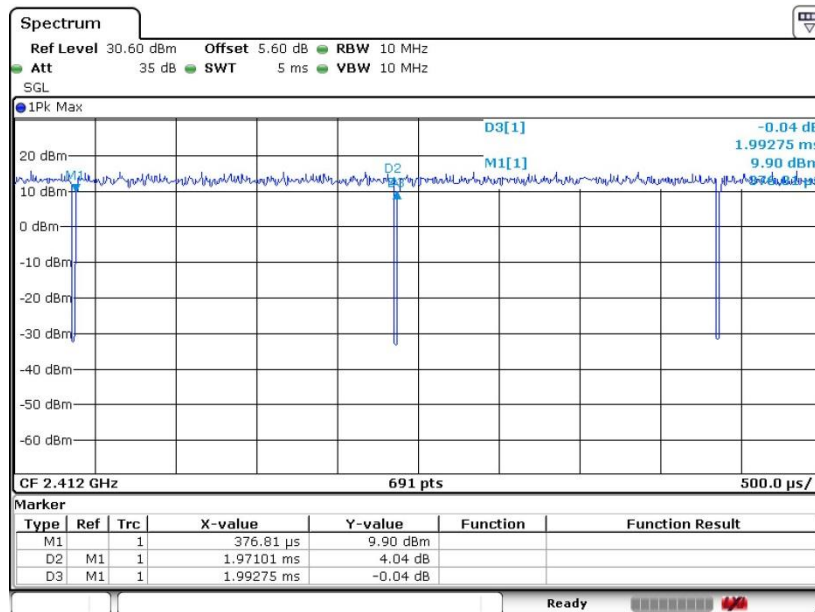
Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
9+10	802.11b	100	-	-	10Hz
9+10	802.11g	98.91	-	-	10Hz
9+10	802.11ax HE20 - Full RU	100	-	-	10Hz
9+10	802.11ax HE20 - Partial RU26	100	-	-	10Hz
9+10	802.11ax HE20 - Partial RU52	100	-	-	10Hz
9+10	802.11ax HE20 - Partial RU106	100	-	-	10Hz
9+10	802.11ax HE40	100	-	-	10Hz

802.11b

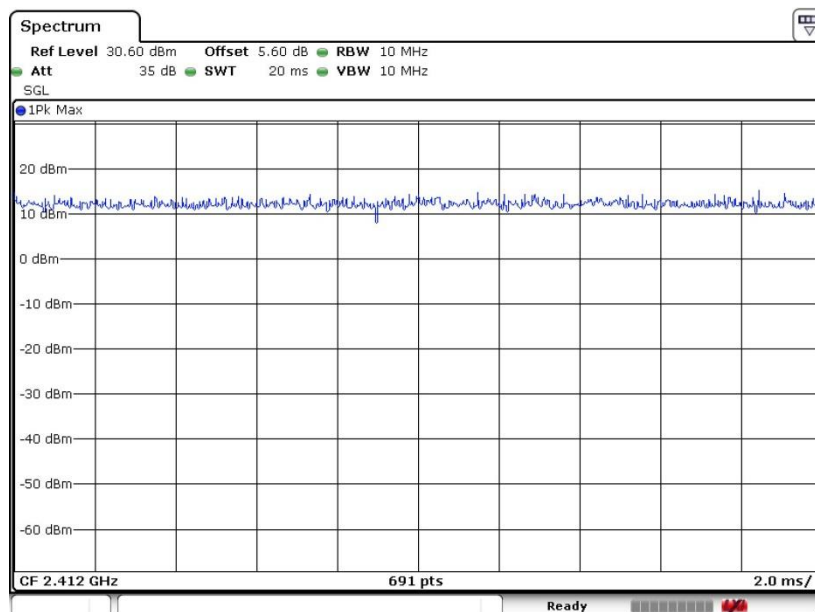




802.11g

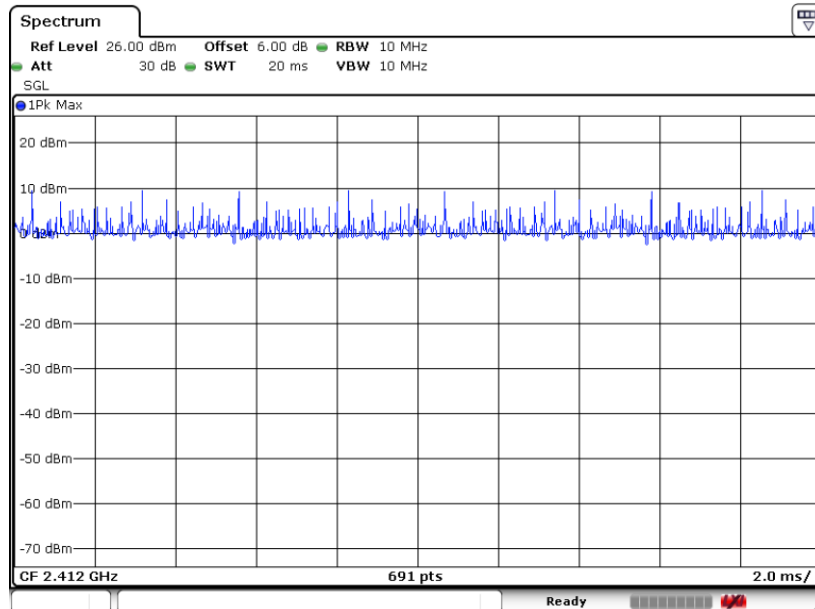


802.11ax HE20 – full RU

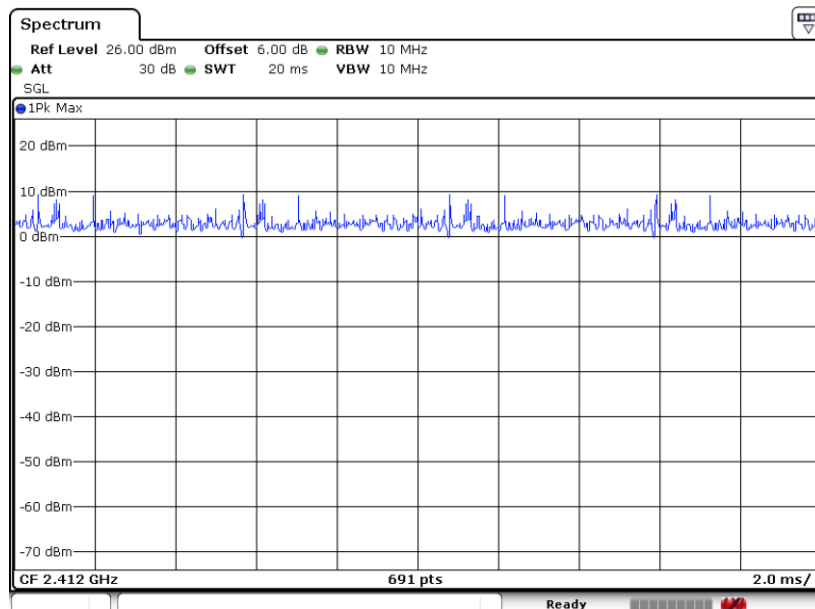




802.11ax HE20 – partial RU26

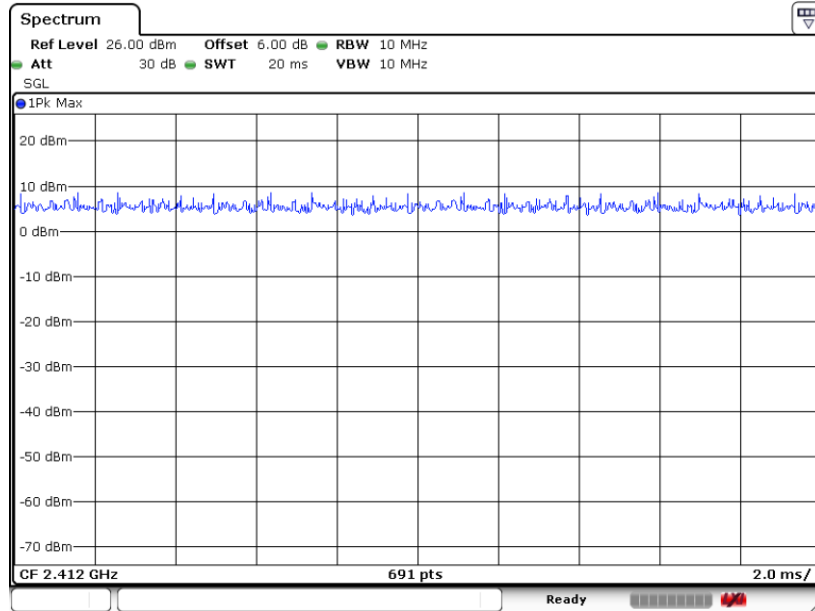


802.11ax HE20 – partial RU52





802.11ax HE20 – partial RU106



802.11ax HE40

