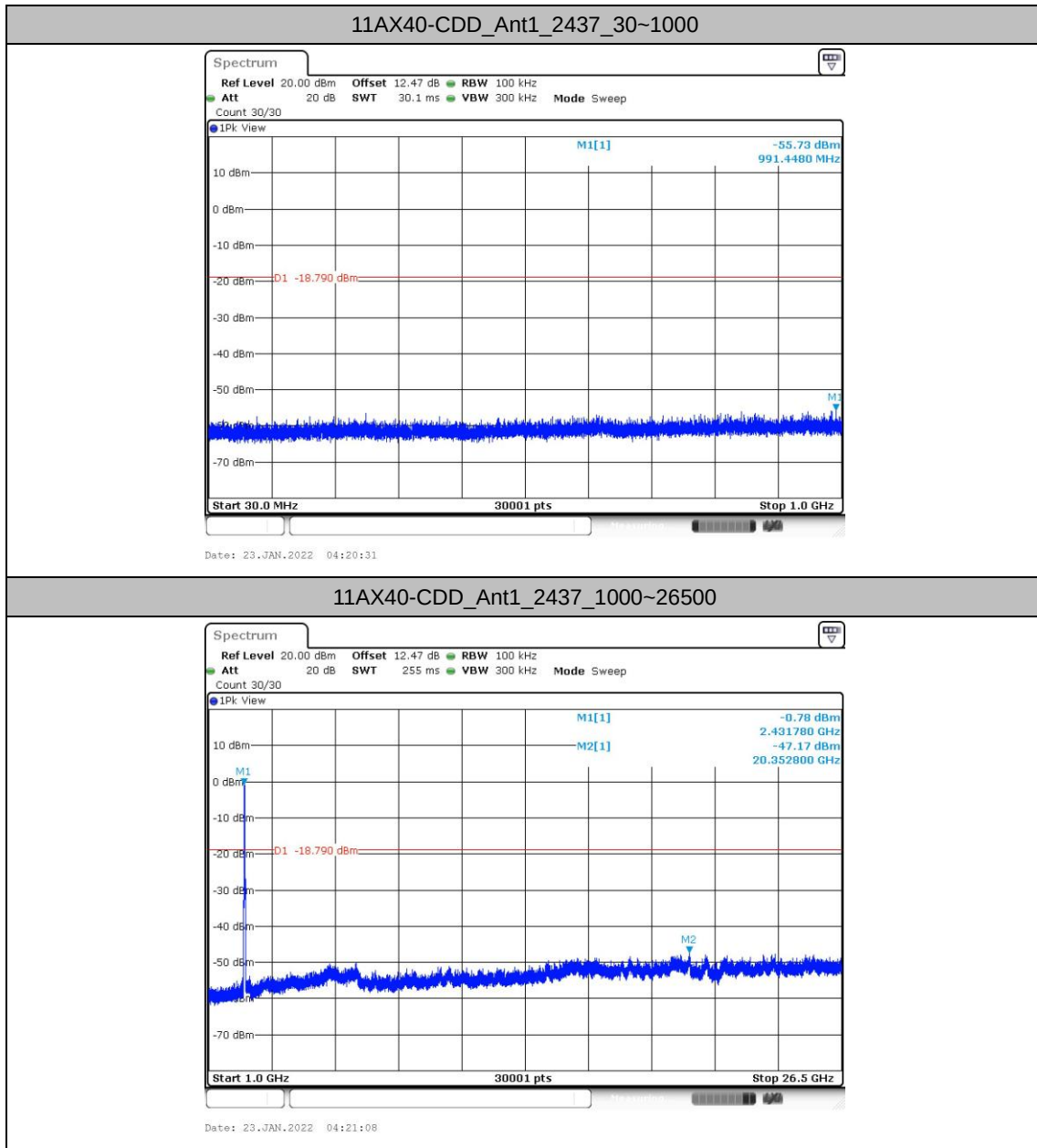
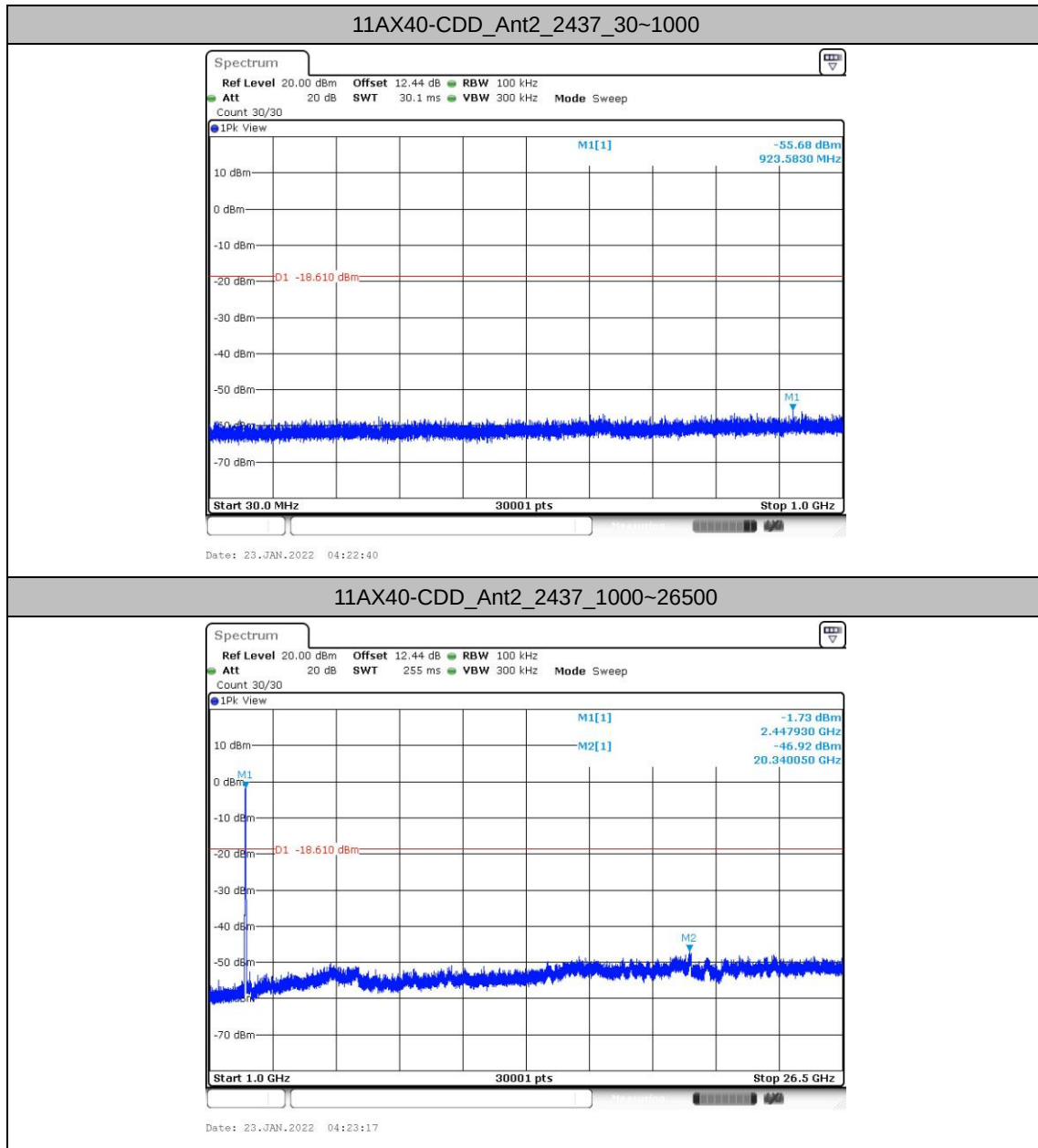
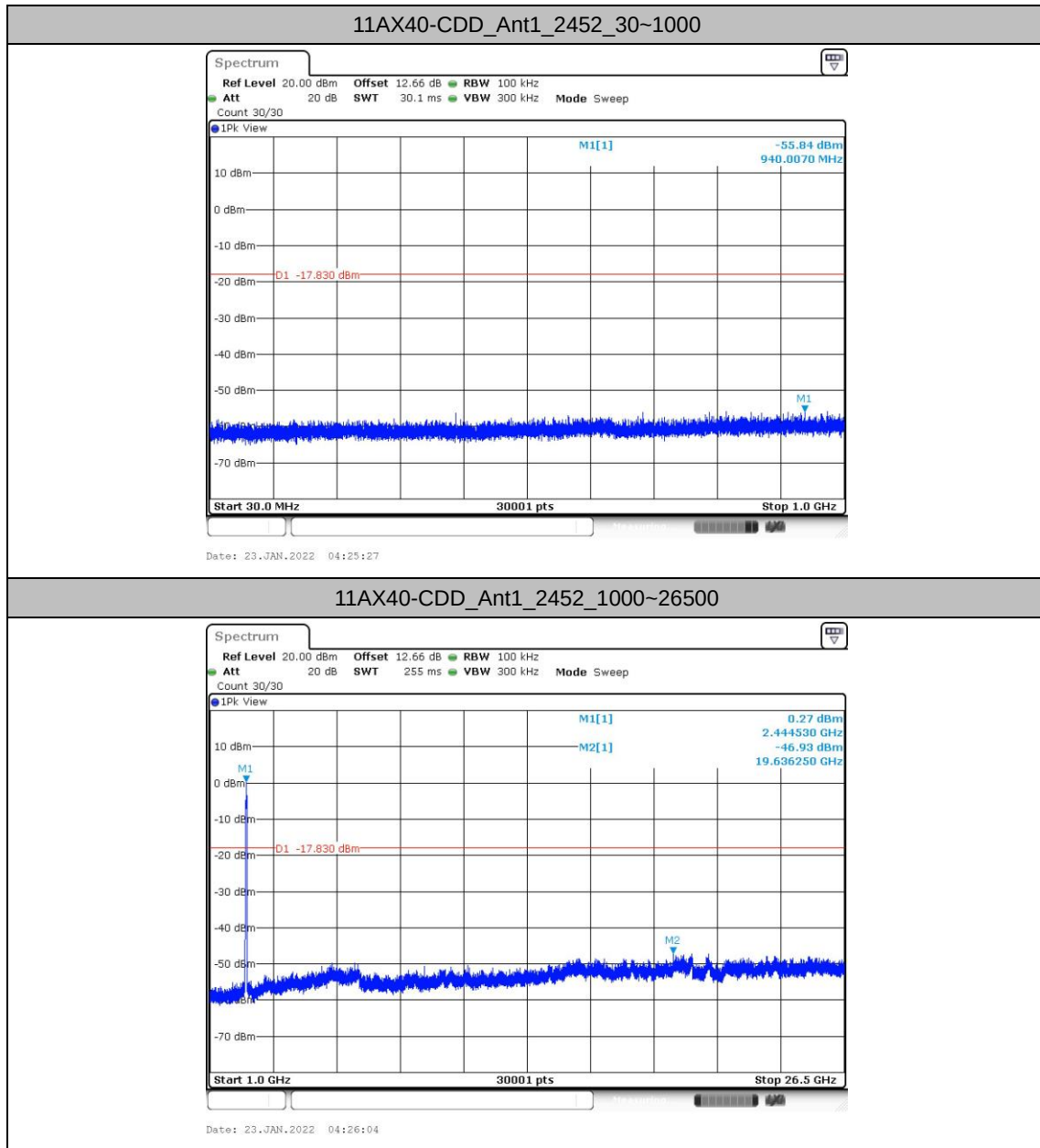
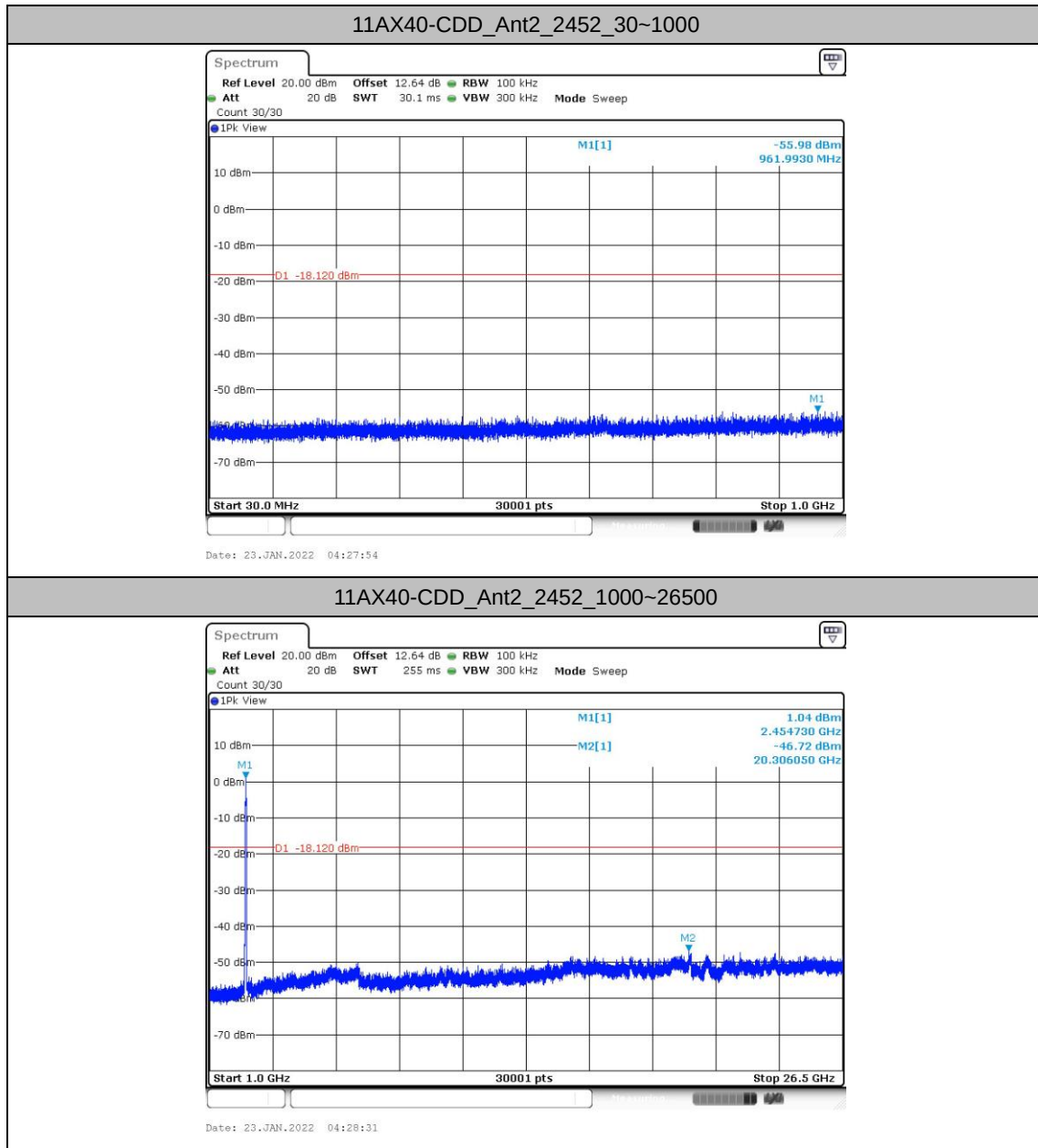




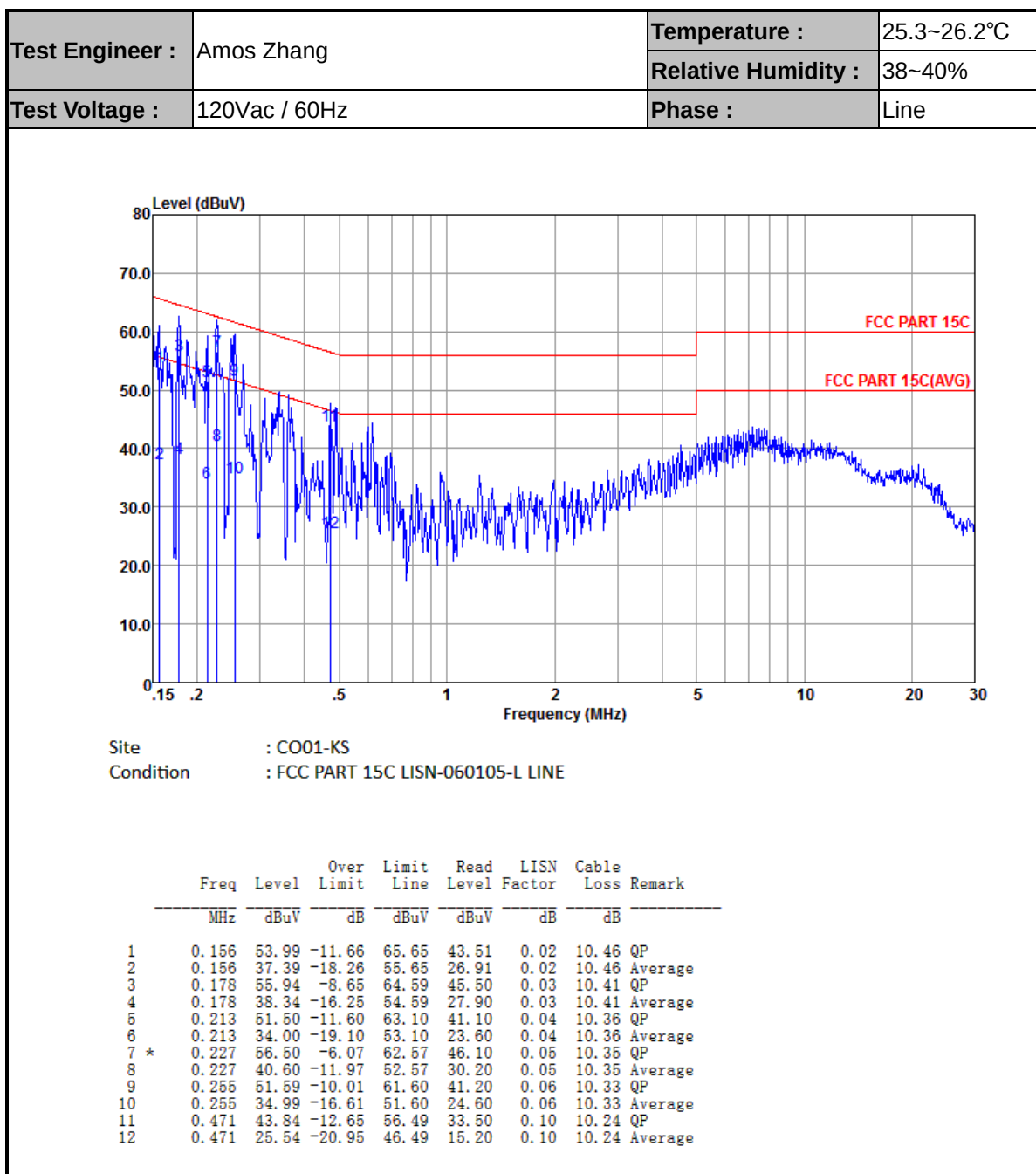


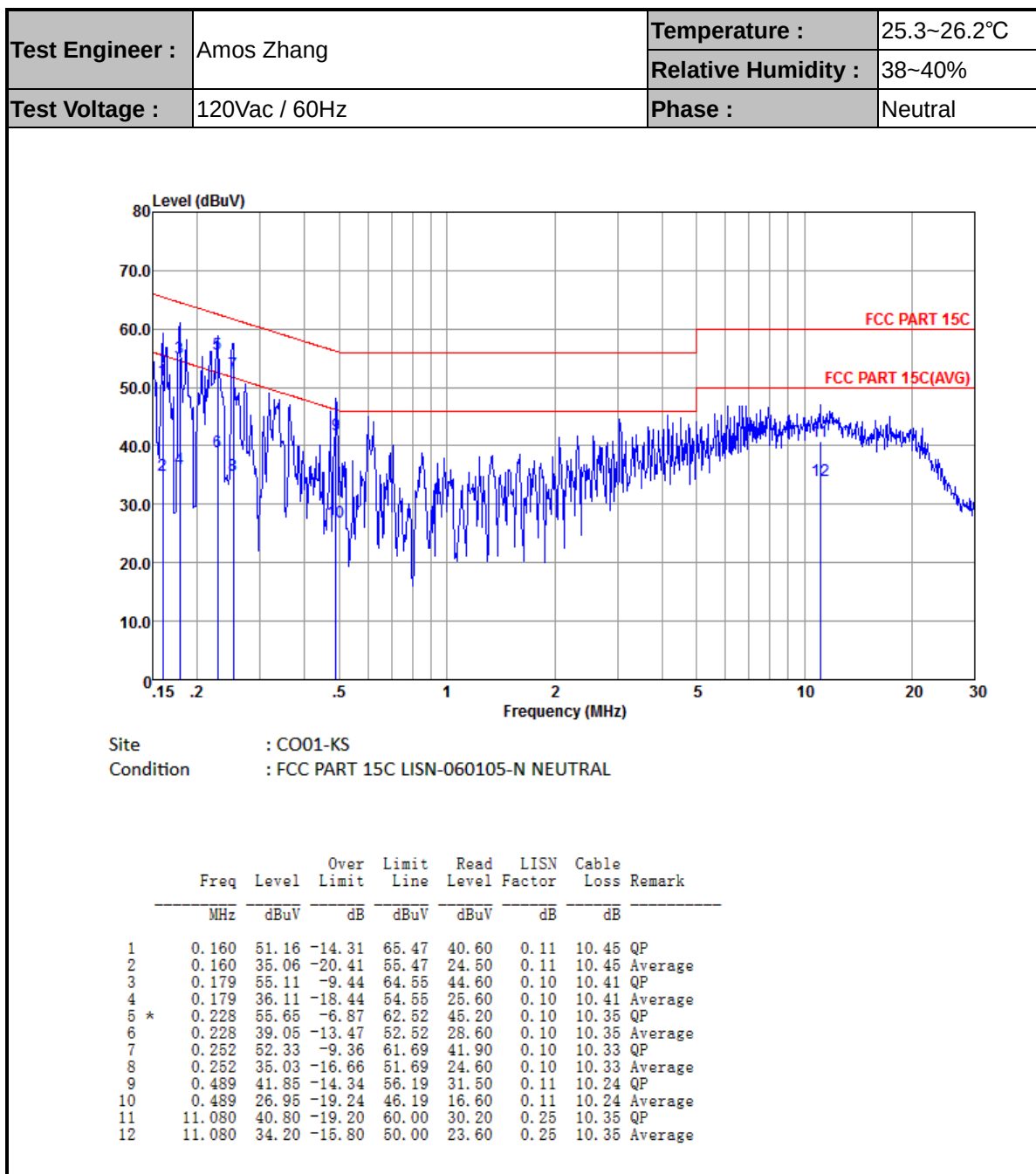






Appendix B. AC Conducted Emission Test Results





Note:

1. Level(dBμV) = Read Level(dBμV) + LISN Factor(dB) + Cable Loss(dB)
2. 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.
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 11 2462MHz		2483.5	53.98	-20.02	74	50.92	32.63	7.25	36.82	136	84	P	H
		2483.5	49.53	-4.47	54	46.47	32.63	7.25	36.82	136	84	A	H
	*	2462	108.04	-	-	104.91	32.74	7.22	36.83	136	84	P	H
	*	2460	104.69	-	-	101.56	32.74	7.22	36.83	136	84	A	H
		2483.5	54.59	-19.41	74	51.53	32.63	7.25	36.82	387	63	P	V
		2483.5	49.19	-4.81	54	46.13	32.63	7.25	36.82	387	63	A	V
	*	2462	105.36	-	-	102.23	32.74	7.22	36.83	387	63	P	V
	*	2460	102.08	-	-	98.95	32.74	7.22	36.83	387	63	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.
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 11 2462MHz		4920	43.75	-30.25	74	64.09	34.77	10.34	65.45	300	0	P	H
		7380	45.1	-28.9	74	61.83	36.65	12.73	66.11	300	0	P	H
		4920	46.44	-27.56	74	66.78	34.77	10.34	65.45	100	0	P	V
		7380	45.07	-28.93	74	61.8	36.65	12.73	66.11	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. 1+2	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)
8802.11ax HE20 Full CH 11 2462MHz	*	2464	110.1	-	-	108.92	30.79	7.22	36.83	125	86	P	H
	*	2464	99.1	-	-	97.92	30.79	7.22	36.83	125	86	A	H
		2483.74	59.55	-14.45	74	58.26	30.86	7.25	36.82	125	86	P	H
		2483.68	49.32	-4.68	54	48.03	30.86	7.25	36.82	125	86	A	H
	*	2464	107.47	-	-	106.29	30.79	7.22	36.83	386	63	P	V
	*	2454	96.68	-	-	95.5	30.79	7.22	36.83	386	63	A	V
		2483.68	64.67	-9.33	74	63.38	30.86	7.25	36.82	386	63	P	V
		2483.56	50.3	-3.7	54	49.01	30.86	7.25	36.82	386	63	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. 1+2	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		4920	42.17	-31.83	74	62.51	34.77	10.34	65.45	300	0	P	H
HE20 Full		7380	42.73	-31.27	74	59.76	36.35	12.73	66.11	300	0	P	H
CH 11		4920	41.43	-32.57	74	61.77	34.77	10.34	65.45	100	0	P	V
2462MHz		7380	43.76	-30.24	74	60.79	36.35	12.73	66.11	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 HE40 Full (Band Edge @ 3m)

WIFI Ant. 1+2	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 09 2452MHz		2356.15	48.5	-25.5	74	47.88	30.46	7.04	36.88	137	71	P	H
		2355.37	38.02	-15.98	54	37.4	30.46	7.04	36.88	137	71	A	H
	*	2454	103.13	-	-	101.95	30.79	7.22	36.83	137	71	P	H
	*	2454	94.91	-	-	93.73	30.79	7.22	36.83	137	71	A	H
		2484.46	61.76	-12.24	74	60.47	30.86	7.25	36.82	137	71	P	H
		2483.5	50.95	-3.05	54	49.66	30.86	7.25	36.82	137	71	A	H
		2341.2	48.96	-25.04	74	48.36	30.45	7.04	36.89	391	21	P	V
		2374.87	38.06	-15.94	54	37.38	30.48	7.07	36.87	391	21	A	V
	*	2454	103.74	-	-	102.56	30.79	7.22	36.83	391	21	P	V
	*	2454	94.82	-	-	93.64	30.79	7.22	36.83	391	21	A	V
		2484.16	60.66	-13.34	74	59.37	30.86	7.25	36.82	391	21	P	V
		2483.68	49.65	-4.35	54	48.36	30.86	7.25	36.82	391	21	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. 1+2	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 09 2452MHz		4905	40.79	-33.21	74	61.13	34.76	10.34	65.44	300	0	P	H
		7356	43.24	-30.76	74	60.23	36.34	12.73	66.06	300	0	P	H
		4905	40.58	-33.42	74	60.92	34.76	10.34	65.44	100	0	P	V
		7356	44.79	-29.21	74	61.78	36.34	12.73	66.06	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 802.11ax HE40 (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.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11ax HE40 LF		58.13	28.95	-11.05	40	48.66	11.8	0.89	32.4	-	-	P	H
		75.59	28.74	-11.26	40	47.22	12.8	1.12	32.4	-	-	P	H
		216.24	34.17	-11.83	46	49.54	14.88	2.15	32.4	-	-	P	H
		263.77	28.54	-17.46	46	38.57	20	2.37	32.4	-	-	P	H
		408.3	29.65	-16.35	46	37.04	22.06	2.95	32.4	-	-	P	H
		532.46	32.88	-13.12	46	38.02	23.9	3.36	32.4	-	-	P	H
		54.25	21.08	-18.92	40	40.15	12.5	0.83	32.4	-	-	P	V
		156.1	23.1	-20.4	43.5	37.09	16.6	1.81	32.4	-	-	P	V
		165.8	28.89	-14.61	43.5	43.73	15.7	1.86	32.4	-	-	P	V
		332.64	25.4	-20.6	46	35.42	19.72	2.66	32.4	-	-	P	V
		408.3	26.06	-19.94	46	33.45	22.06	2.95	32.4	-	-	P	V
		532.46	32.75	-13.25	46	37.89	23.9	3.36	32.4	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



<Simultaneous transmission>

WIFI 802.11 ax HE40 Full + LTE Band 13 Link (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
WIFI 802.11 ax HE40 Full + LTE Band 13 Link		2380.2	48.1	-25.9	74	47.39	30.48	7.1	36.87	332	310	P	H
		2368.5	37.93	-16.07	54	37.28	30.46	7.07	36.88	332	310	A	H
	*	2484.82	63.38	-10.62	74	62.09	30.86	7.25	36.82	332	310	P	H
	*	2484.52	50.68	-3.32	54	49.39	30.86	7.25	36.82	332	310	A	H
		2456	103.69	-	-	102.51	30.79	7.22	36.83	332	310	P	H
		2456	93.62	-	-	92.44	30.79	7.22	36.83	332	310	A	H
		2378.77	48.12	-25.88	74	47.41	30.48	7.1	36.87	392	2	P	V
		2374.87	38.06	-15.94	54	37.38	30.48	7.07	36.87	392	2	A	V
	*	2484.7	55.33	-18.67	74	54.04	30.86	7.25	36.82	392	2	P	V
	*	2484.28	43.53	-10.47	54	42.24	30.86	7.25	36.82	392	2	A	V
		2452	99.76	-	-	98.7	30.71	7.19	36.84	392	2	P	V
		2454	91.15	-	-	89.97	30.79	7.22	36.83	392	2	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

WIFI 802.11 ax HE40 Full + LTE Band 13 Link (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
WIFI 802.11 ax HE40 Full + LTE Band 13 Link		4905	40.62	-33.38	74	60.98	34.74	10.34	65.44	300	0	P	H
		7350	43.69	-30.31	74	60.37	36.66	12.72	66.06	300	0	P	H
		4905	40.8	-33.2	74	61.16	34.74	10.34	65.44	100	0	P	V
		7350	44.06	-29.94	74	60.74	36.66	12.72	66.06	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average 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.	
3+5		(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)

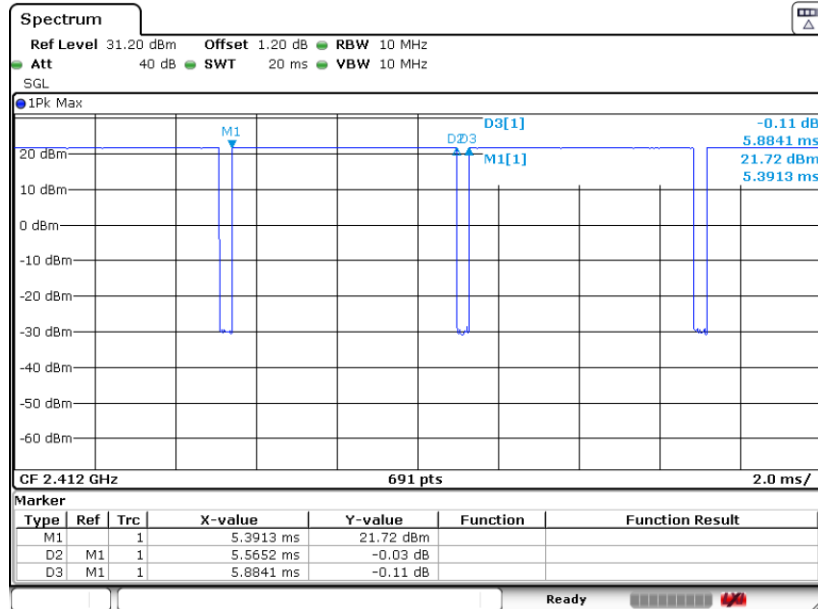
= -10.46(dB)

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

Appendix D. Duty Cycle Plots

Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
802.11b	94.58	5.565	0.180	0.18KHz
802.11g	94.20	2	0.5	0.51KHz
802.11ax HE20	93.78	1.420	0.704	0.75KHz
802.11ax HE40	93.05	0.738	1.356	1.5KHz

802.11b



802.11g

