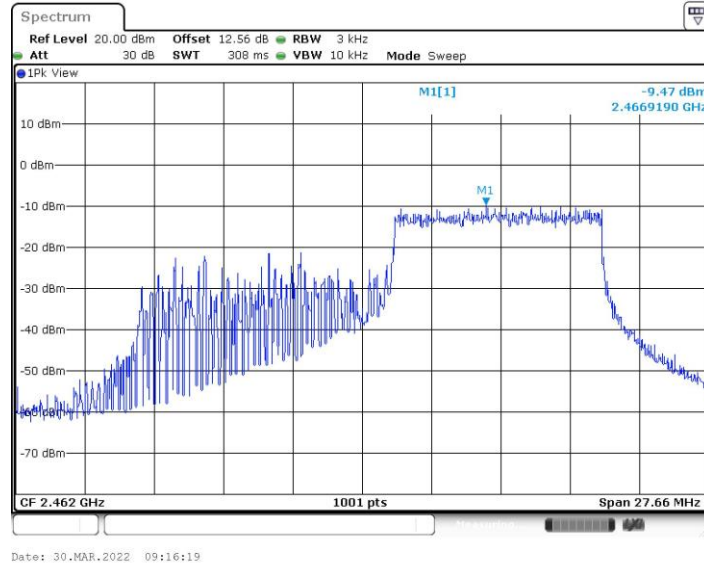
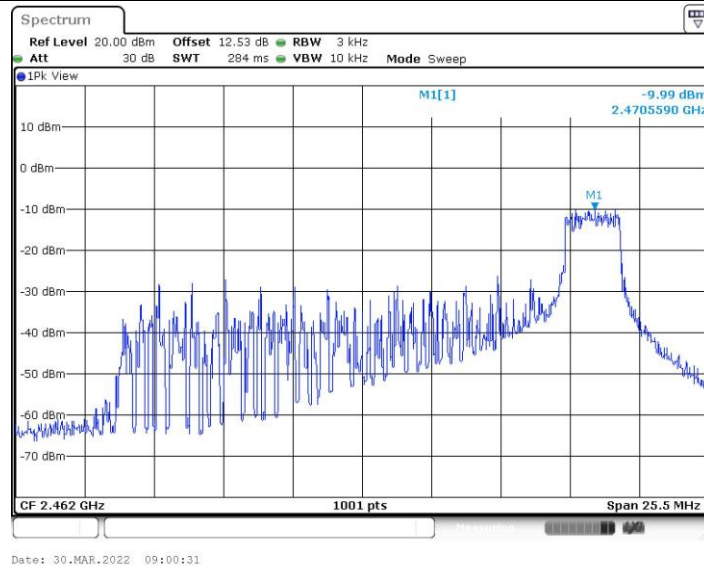




11AX20CDD_Ant1_2462_106Tone_RU54

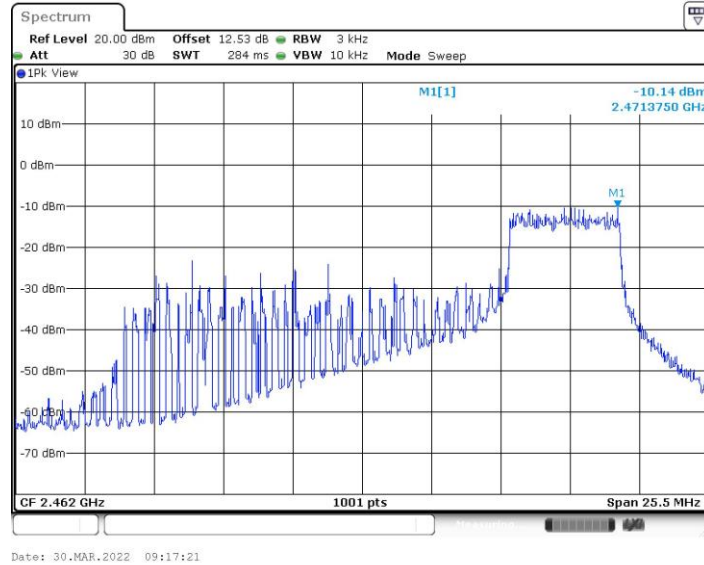


11AX20CDD_Ant2_2462_26Tone_RU8

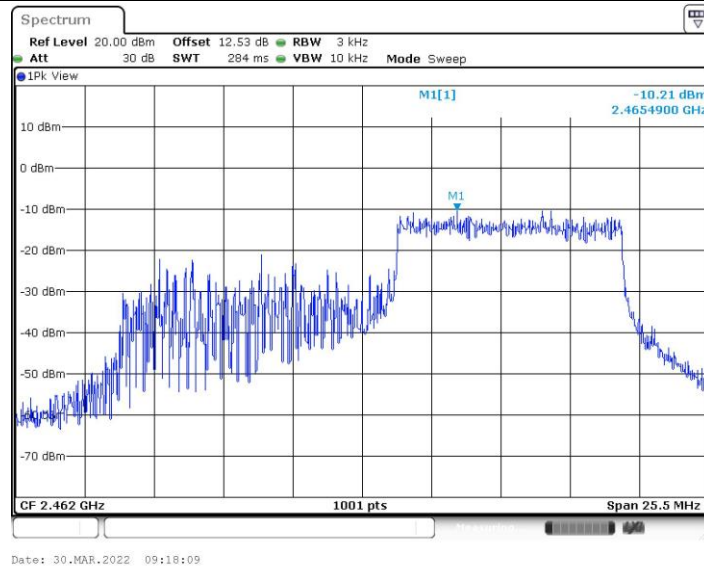




11AX20CDD_Ant2_2462_52Tone_RU40



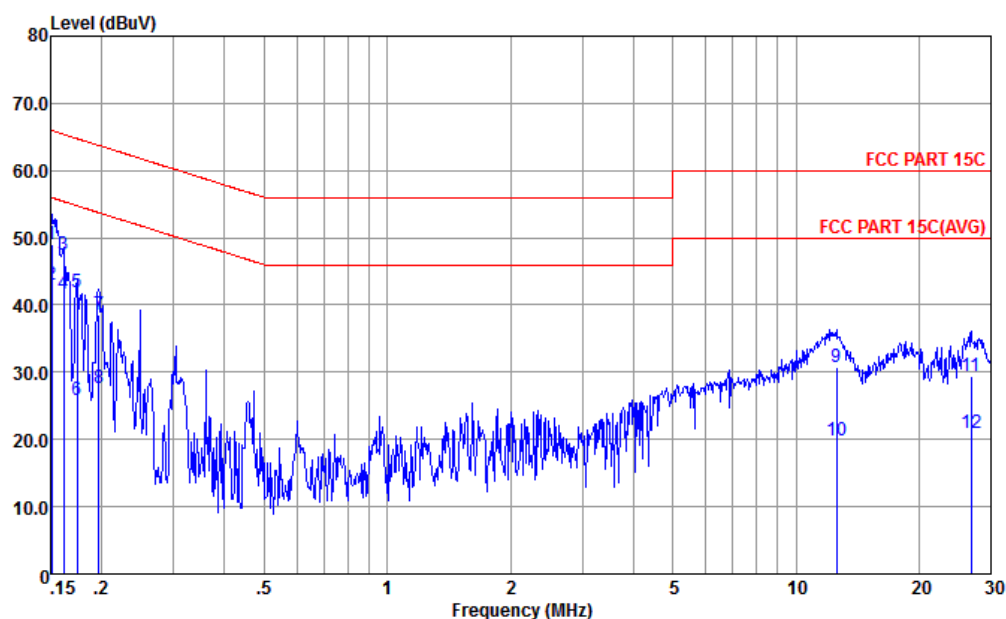
11AX20CDD_Ant2_2462_106Tone_RU54





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 :	Line
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

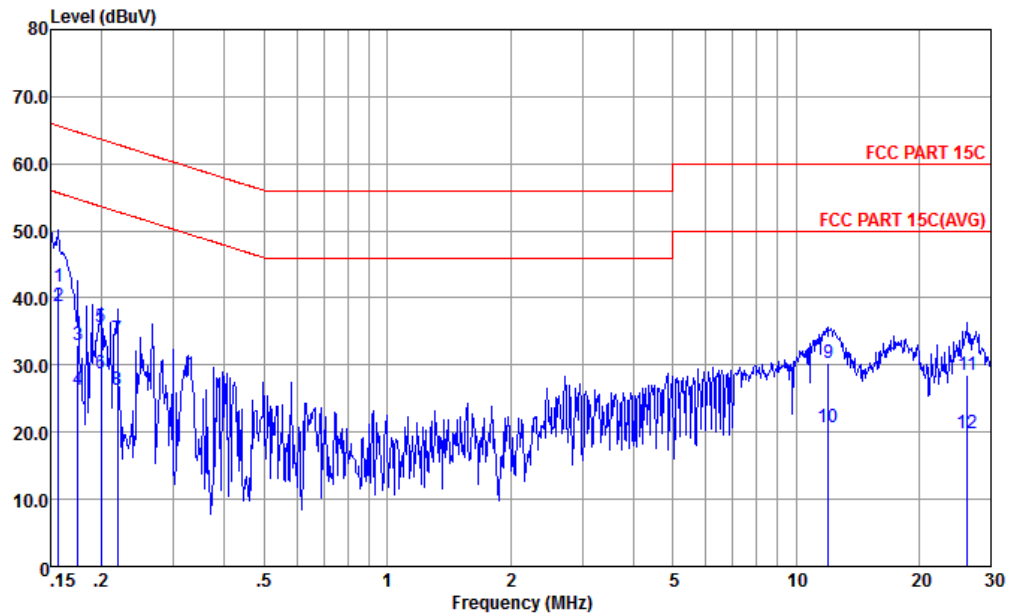


Site : CO01-KS
Condition : FCC PART 15C LISN-060105-L LINE

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.151	49.10	-16.86	65.96	38.60	0.02	10.48	QP
2 *	0.151	43.10	-12.86	55.96	32.60	0.02	10.48	Average
3	0.162	47.57	-17.81	65.38	37.09	0.03	10.45	QP
4	0.162	41.67	-13.71	55.38	31.19	0.03	10.45	Average
5	0.174	41.95	-22.82	64.77	31.50	0.03	10.42	QP
6	0.174	25.75	-29.02	54.77	15.30	0.03	10.42	Average
7	0.197	38.61	-25.15	63.76	28.20	0.04	10.37	QP
8	0.197	27.71	-26.05	53.76	17.30	0.04	10.37	Average
9	12.582	30.84	-29.16	60.00	20.21	0.26	10.37	QP
10	12.582	19.94	-30.06	50.00	9.31	0.26	10.37	Average
11	26.841	29.40	-30.60	60.00	18.10	0.71	10.59	QP
12	26.841	20.90	-29.10	50.00	9.60	0.71	10.59	Average



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 : FCC PART 15C LISN-060105-N NEUTRAL

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.156	41.77	-23.88	65.65	31.20	0.11	10.46	QP
2 *	0.156	38.77	-16.88	55.65	28.20	0.11	10.46	Average
3	0.175	33.02	-31.70	64.72	22.50	0.10	10.42	QP
4	0.175	26.32	-28.40	54.72	15.80	0.10	10.42	Average
5	0.200	35.56	-28.06	63.62	25.10	0.10	10.36	QP
6	0.200	28.66	-24.96	53.62	18.20	0.10	10.36	Average
7	0.219	33.95	-28.93	62.88	23.50	0.10	10.35	QP
8	0.219	26.35	-26.53	52.88	15.90	0.10	10.35	Average
9	11.996	30.23	-29.77	60.00	19.59	0.27	10.37	QP
10	11.996	20.83	-29.17	50.00	10.19	0.27	10.37	Average
11	26.278	28.41	-31.59	60.00	17.10	0.73	10.58	QP
12	26.278	19.91	-30.09	50.00	8.60	0.73	10.58	Average

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 (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.
CDD 8+9		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 06 2437MHz		4875	53	-21	74	73.9	34.23	10.29	65.42	103	113	P	H
		4875	50.8	-3.2	54	71.7	34.23	10.29	65.42	103	113	A	H
		7305	43.96	-30.04	74	61.29	35.86	12.72	65.91	300	0	P	H
		4875	47.6	-26.4	74	68.5	34.23	10.29	65.42	100	0	P	V
		7305	43.19	-30.81	74	60.52	35.86	12.72	65.91	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.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
CDD 8+9		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ax HE20 Full CH 01 2412MHz		2388.39	65.13	-8.87	74	62.01	32.88	7.1	36.86	101	114	P	H
		2389.95	50.96	-3.04	54	47.84	32.88	7.1	36.86	101	114	A	H
	*	2416	110.49	-	-	107.28	32.9	7.16	36.85	101	114	P	H
	*	2410	101.37	-	-	98.19	32.9	7.13	36.85	101	114	A	H
		2389.82	62.14	-11.86	74	59.02	32.88	7.1	36.86	398	75	P	V
		2389.95	45.15	-8.85	54	42.03	32.88	7.1	36.86	398	75	A	V
	*	2416	106.86	-	-	103.65	32.9	7.16	36.85	398	75	P	V
	*	2412	97.97	-	-	94.79	32.9	7.13	36.85	398	75	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. CDD 8+9	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		4830	45.1	-28.9	74	66.03	34.2	10.25	65.38	300	0	P	H
CH 01 2412MHz		4830	41.65	-32.35	74	62.58	34.2	10.25	65.38	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. CDD 8+9	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 106/53 CH 01 2412MHz		2389.82	63.62	-10.38	74	60.5	32.88	7.1	36.86	114	292	P	H
		2388.65	50.49	-3.51	54	47.37	32.88	7.1	36.86	114	292	A	H
		2406	113.39	-	-	110.21	32.9	7.13	36.85	114	292	P	H
		2410	104.32	-	-	101.14	32.9	7.13	36.85	114	292	A	H
		2389.43	63.19	-10.81	74	60.07	32.88	7.1	36.86	400	258	P	V
		2388.78	50.56	-3.44	54	47.44	32.88	7.1	36.86	400	258	A	V
		2406	113.7	-	-	110.52	32.9	7.13	36.85	400	258	P	V
		2408	104.31	-	-	101.13	32.9	7.13	36.85	400	258	A	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 HE20 (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.	
CDD 8+9		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11ax HE20 LF		30.97	19.46	-20.54	40	27.08	24.75	0.71	33.08	-	-	P	H
		138.64	14.76	-28.74	43.5	28.71	17.28	1.79	33.02	-	-	P	H
		249.22	15.5	-30.5	46	27.66	18.23	2.41	32.8	-	-	P	H
		350.1	21.29	-24.71	46	30.94	20.3	2.85	32.8	-	-	P	H
		600.36	25.13	-20.87	46	28.43	25.76	3.74	32.8	-	-	P	H
		926.28	29.26	-16.74	46	27.35	29.41	4.65	32.15	-	-	P	H
		30.97	29.15	-10.85	40	36.49	24.75	0.71	32.8	-	-	P	V
		48.43	24.76	-15.24	40	41.52	15.16	1.05	32.97	-	-	P	V
		57.16	23.44	-16.56	40	42.93	12.54	1.13	33.16	-	-	P	V
		250.19	18.4	-27.6	46	30.74	18.34	2.42	33.1	-	-	P	V
		325.85	19.64	-26.36	46	30.04	19.75	2.75	32.9	-	-	P	V
		585.81	24.73	-21.27	46	27.97	25.6	3.69	32.53	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Co-location

2.4GHz 2400~2483.5MHz

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

WIFI Ant.	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		2389.95	62.67	-11.33	74	59.55	32.88	7.1	36.86	100	114	P	H
		2389.56	50.94	-3.06	54	47.82	32.88	7.1	36.86	100	114	A	H
	*	2412	109.62	-	-	106.44	32.9	7.13	36.85	100	114	P	H
	*	2410	100.06	-	-	96.88	32.9	7.13	36.85	100	114	A	H
		2389.95	61.68	-12.32	74	58.56	32.88	7.1	36.86	397	82	P	V
		2389.3	45.91	-8.09	54	42.79	32.88	7.1	36.86	397	82	A	V
	*	2416	105.31	-	-	102.1	32.9	7.16	36.85	397	82	P	V
	*	2412	95.94	-	-	92.76	32.9	7.13	36.85	397	82	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 + WWAN (Harmonic @ 3m)

WIFI Ant.	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	43.04	-30.96	74	63.97	34.2	10.25	65.38	300	0	P	H
		4830	41.64	-32.36	74	62.57	34.2	10.25	65.38	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.	
1		(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)

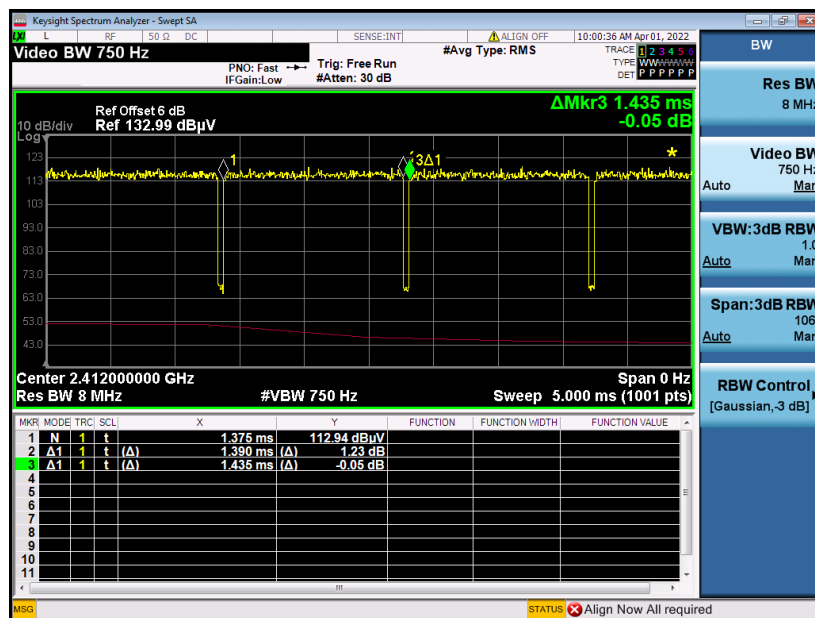
= -10.46(dB)

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

Appendix D. Duty Cycle Plots

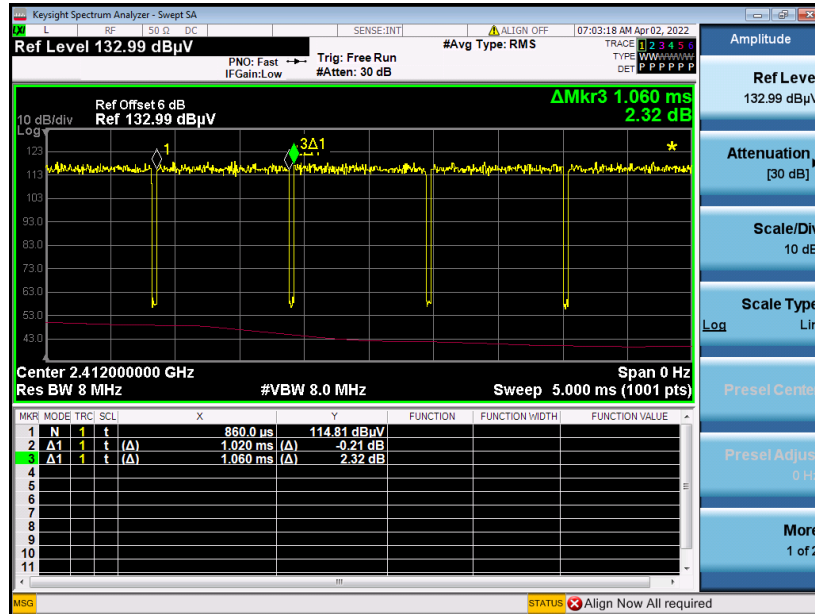
Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
802.11g	96.86	1.390	0.719	0.75kHz
802.11ax HE20	96.23	1.020	0.980	1KHz
802.11ax HE20 RU26/52/106	100	-	-	10Hz

802.11g

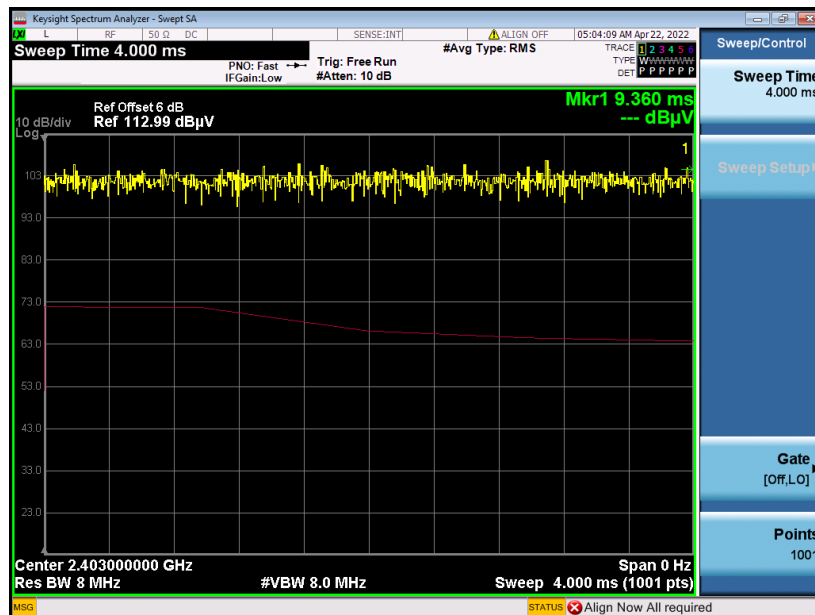




802.11ax HE20

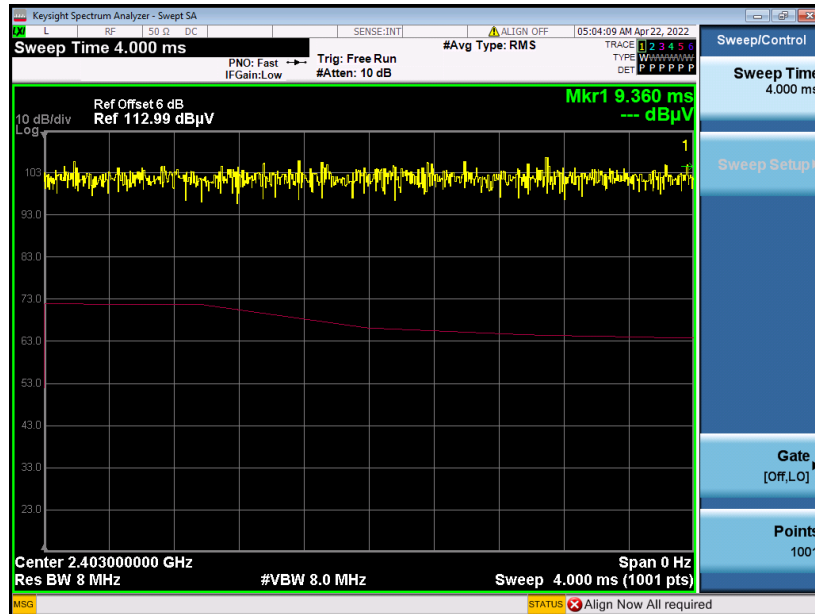


802.11ax HE20 RU26





802.11ax HE20 RU52



802.11ax HE20 RU106

