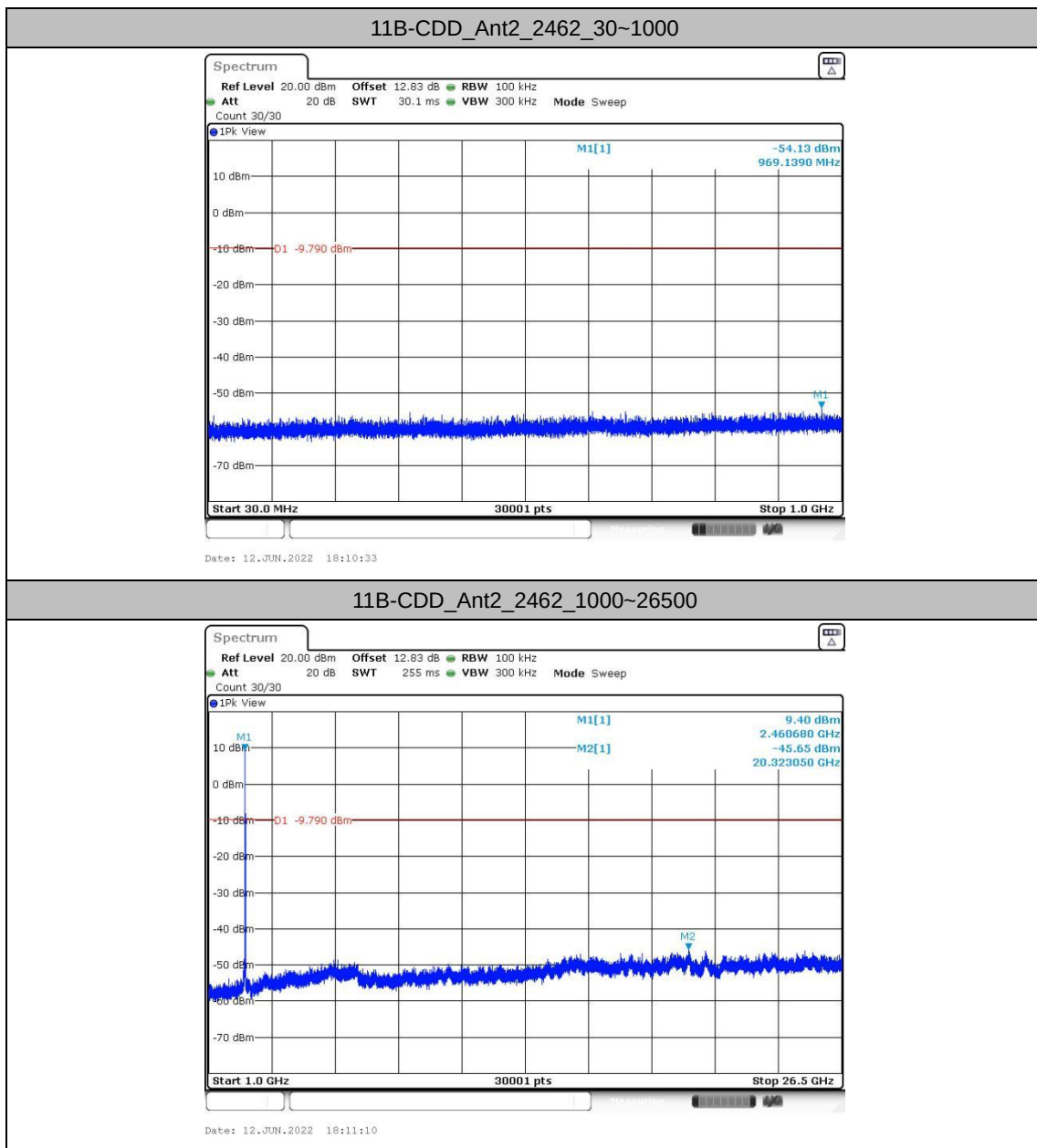
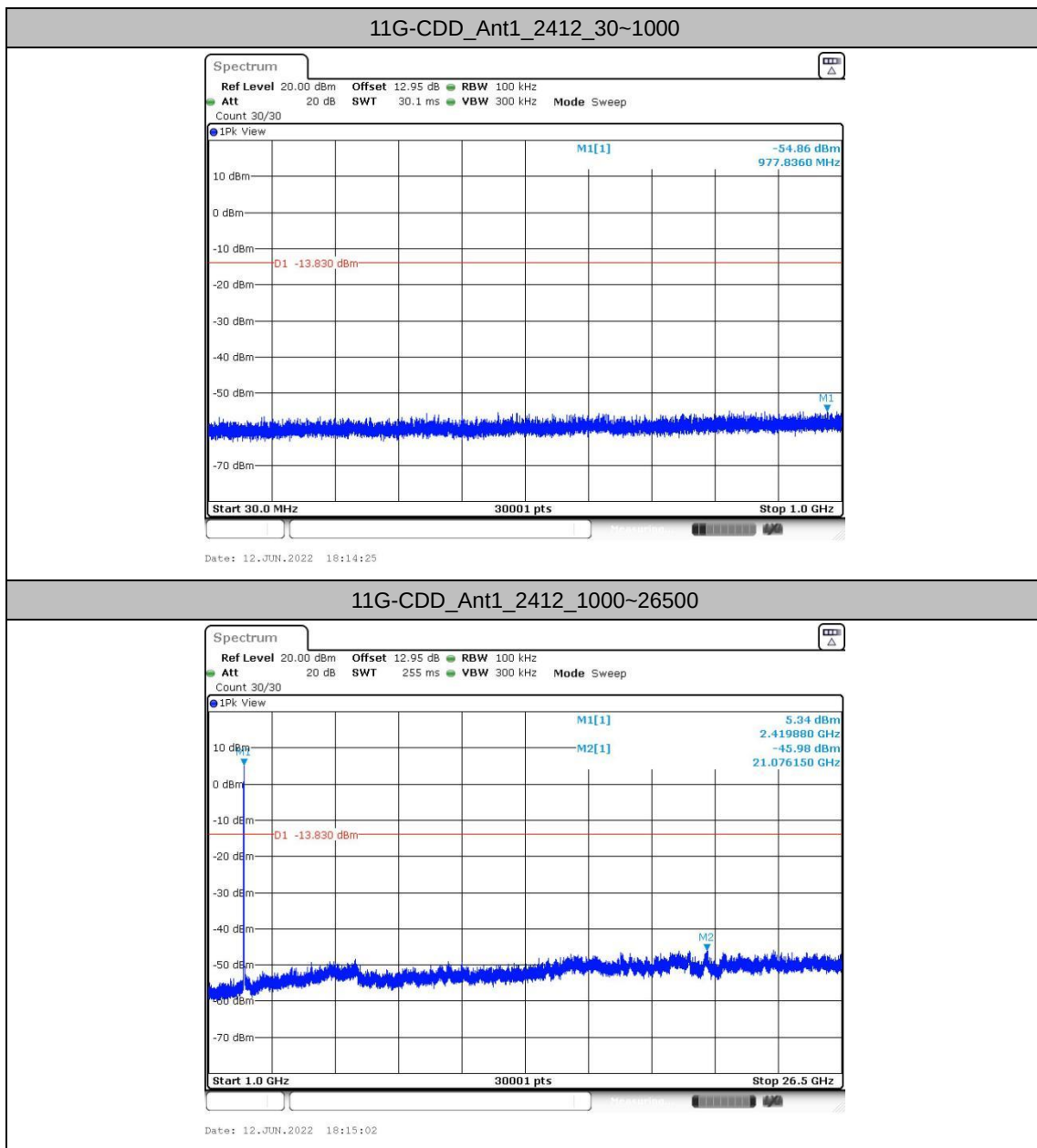
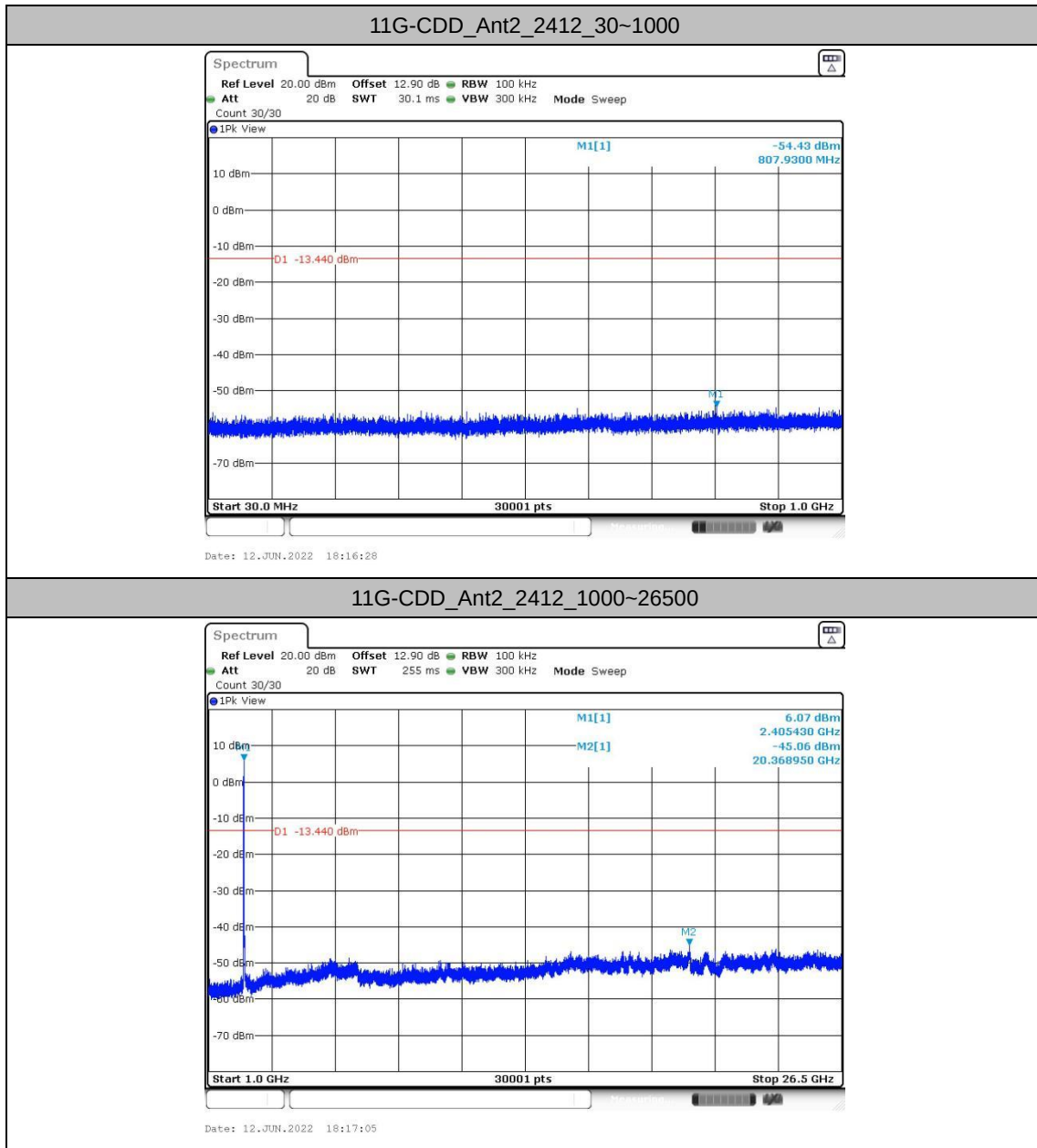
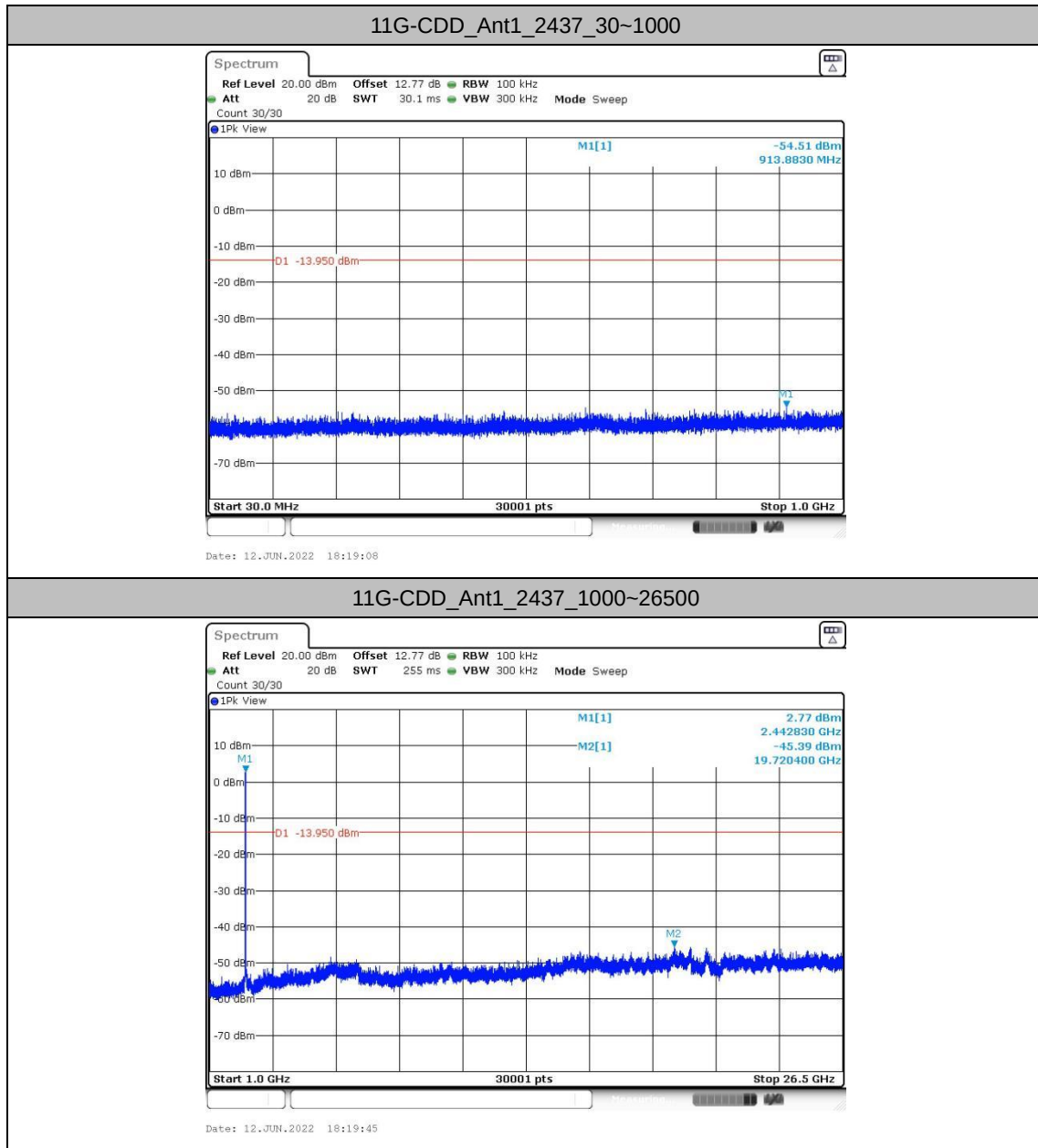
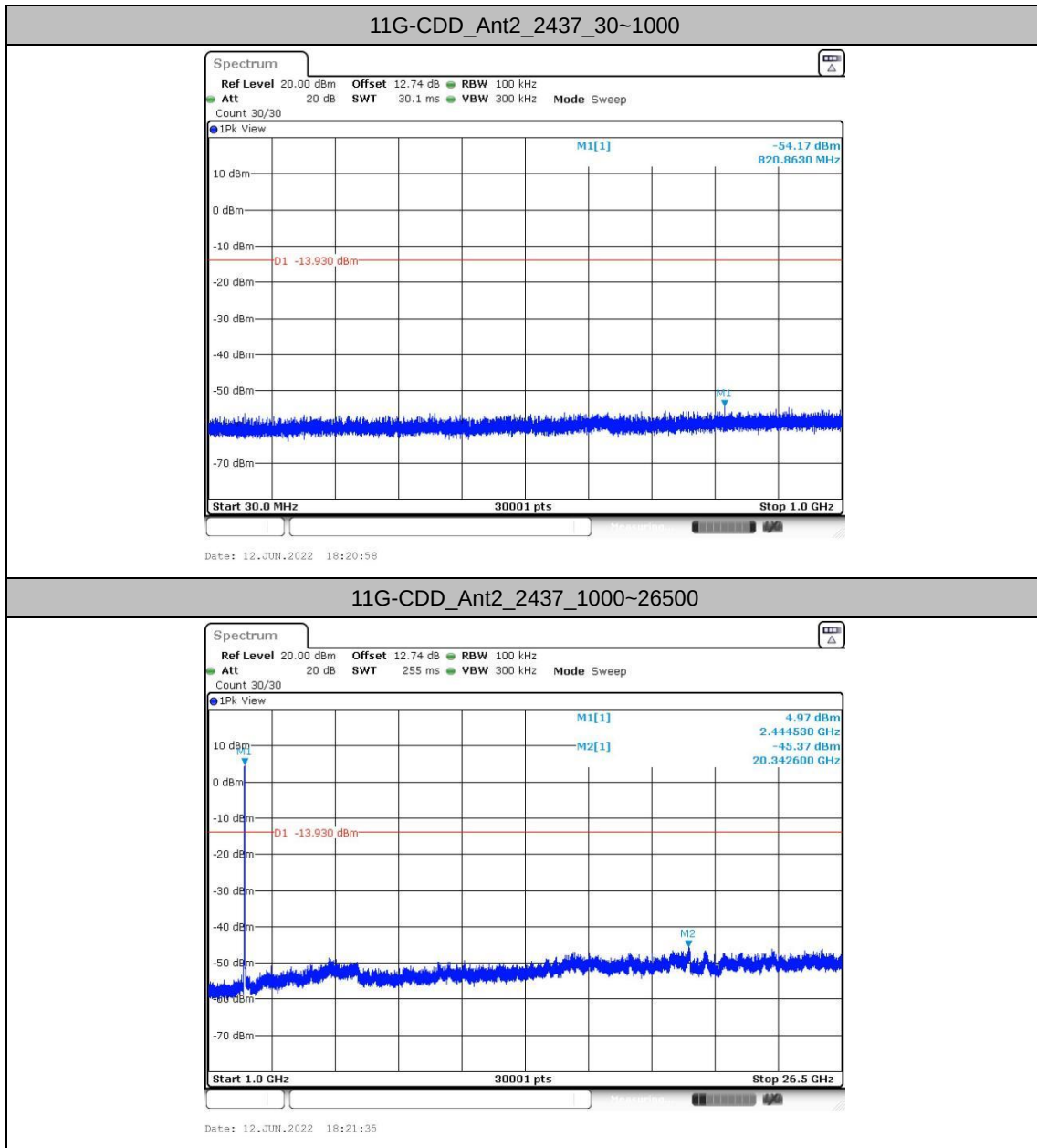


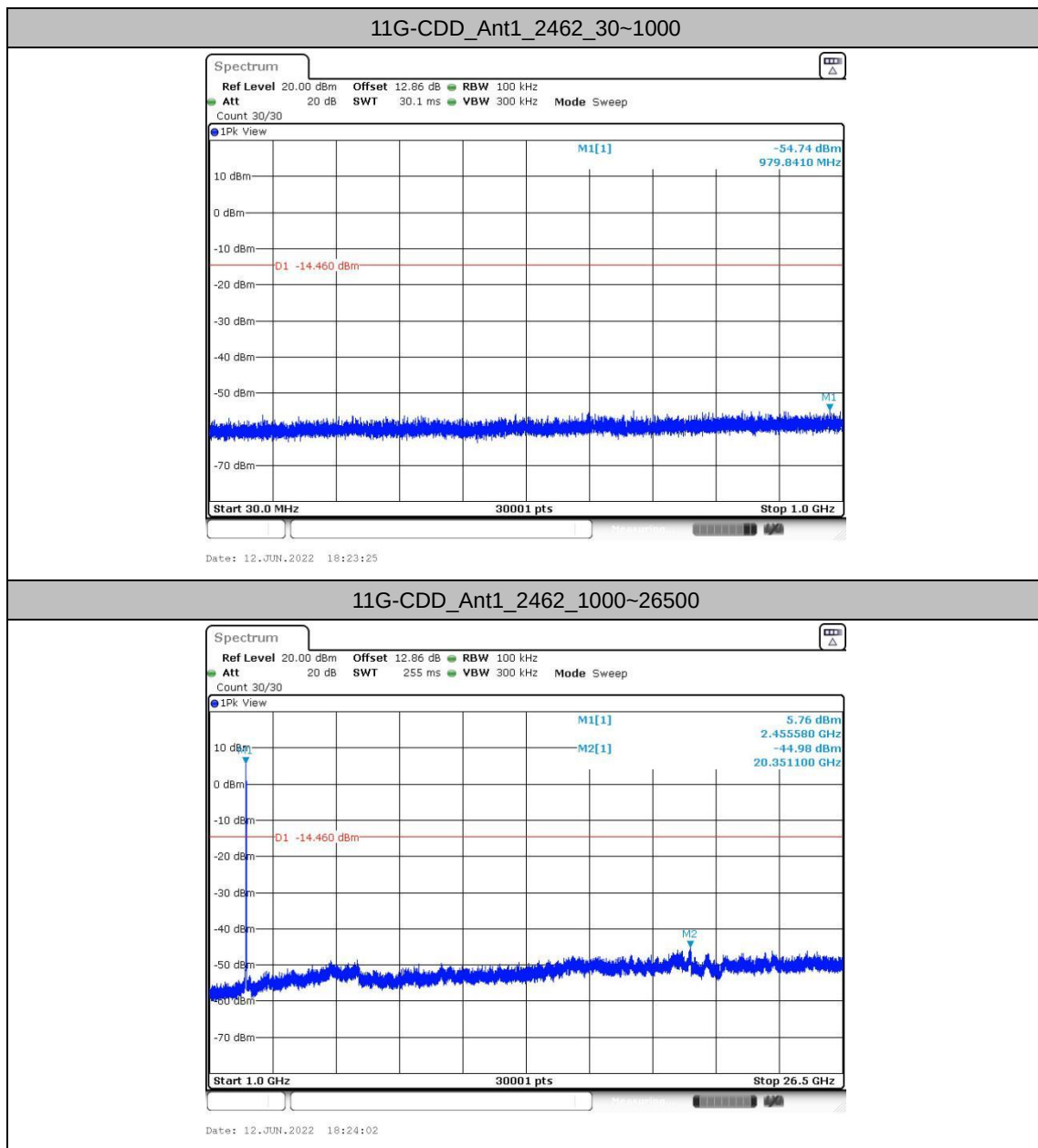


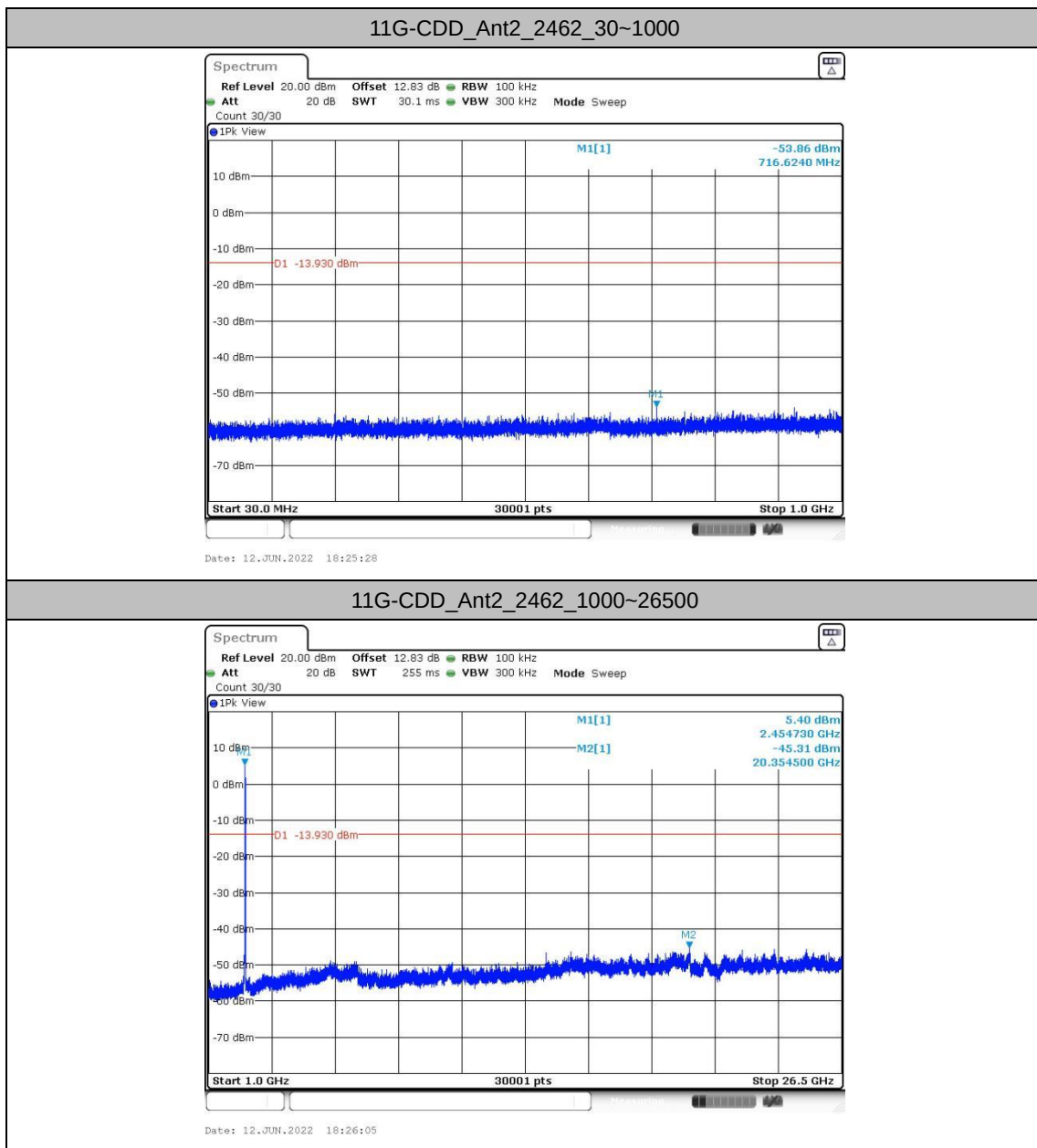


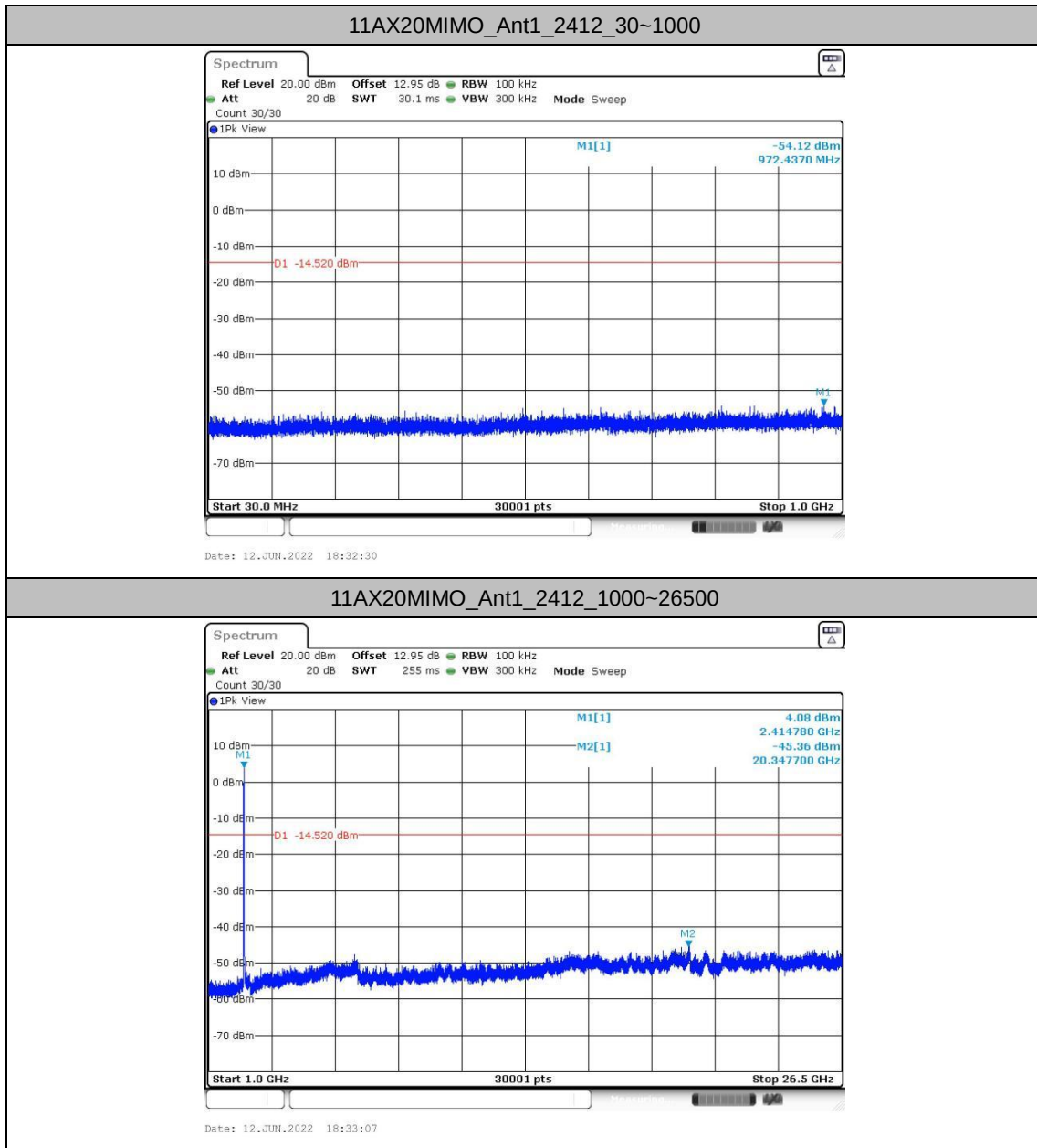


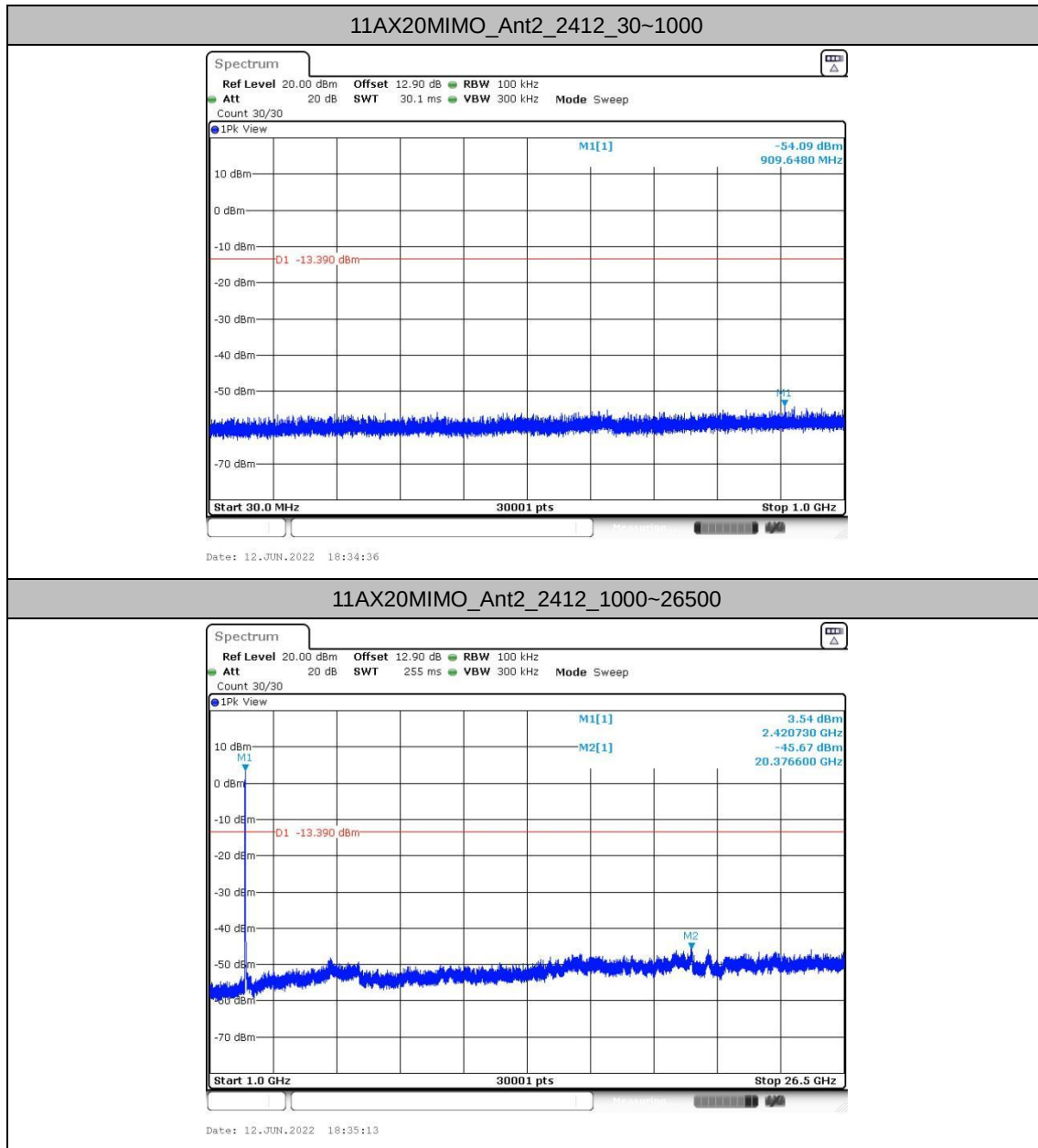


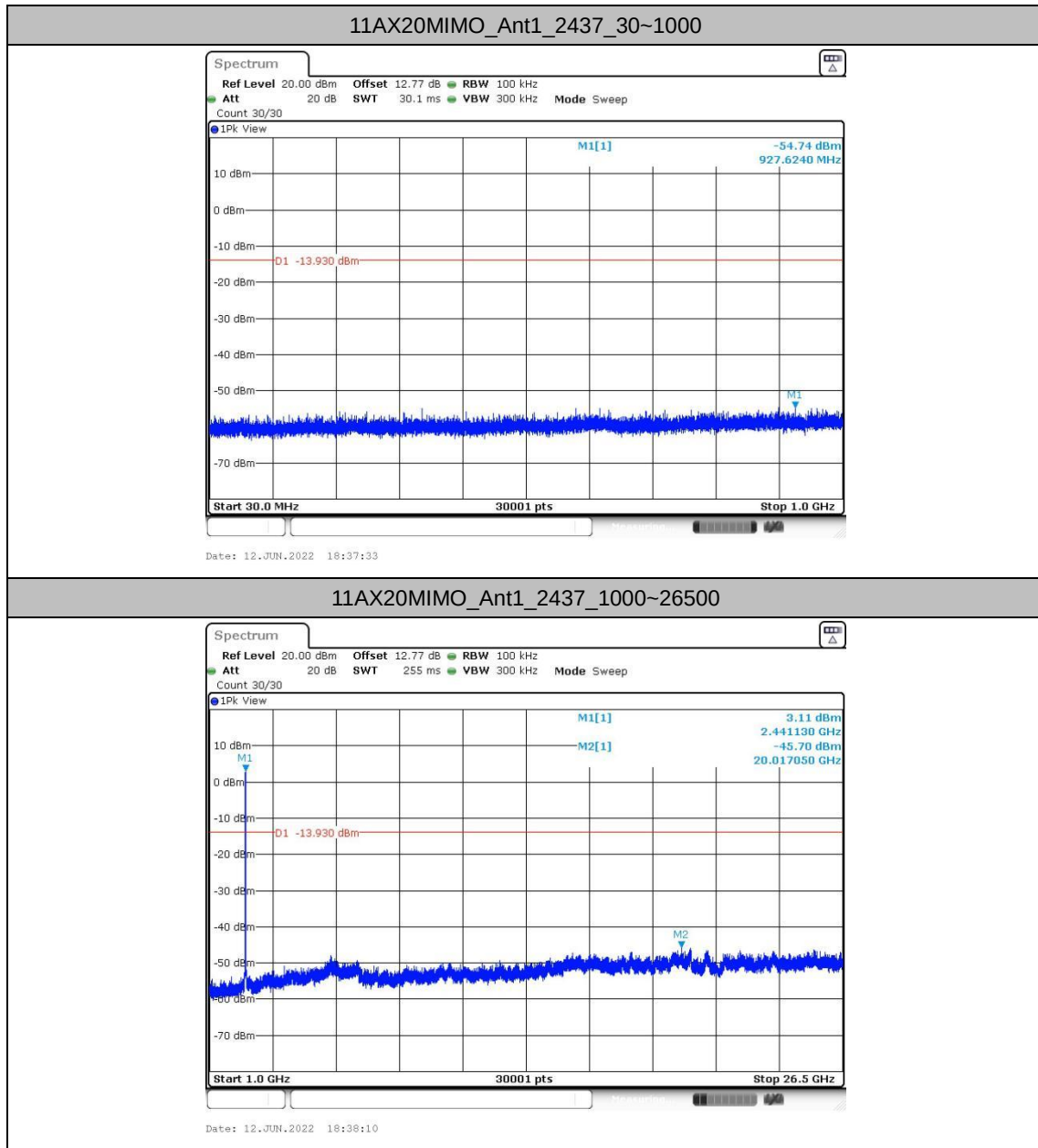


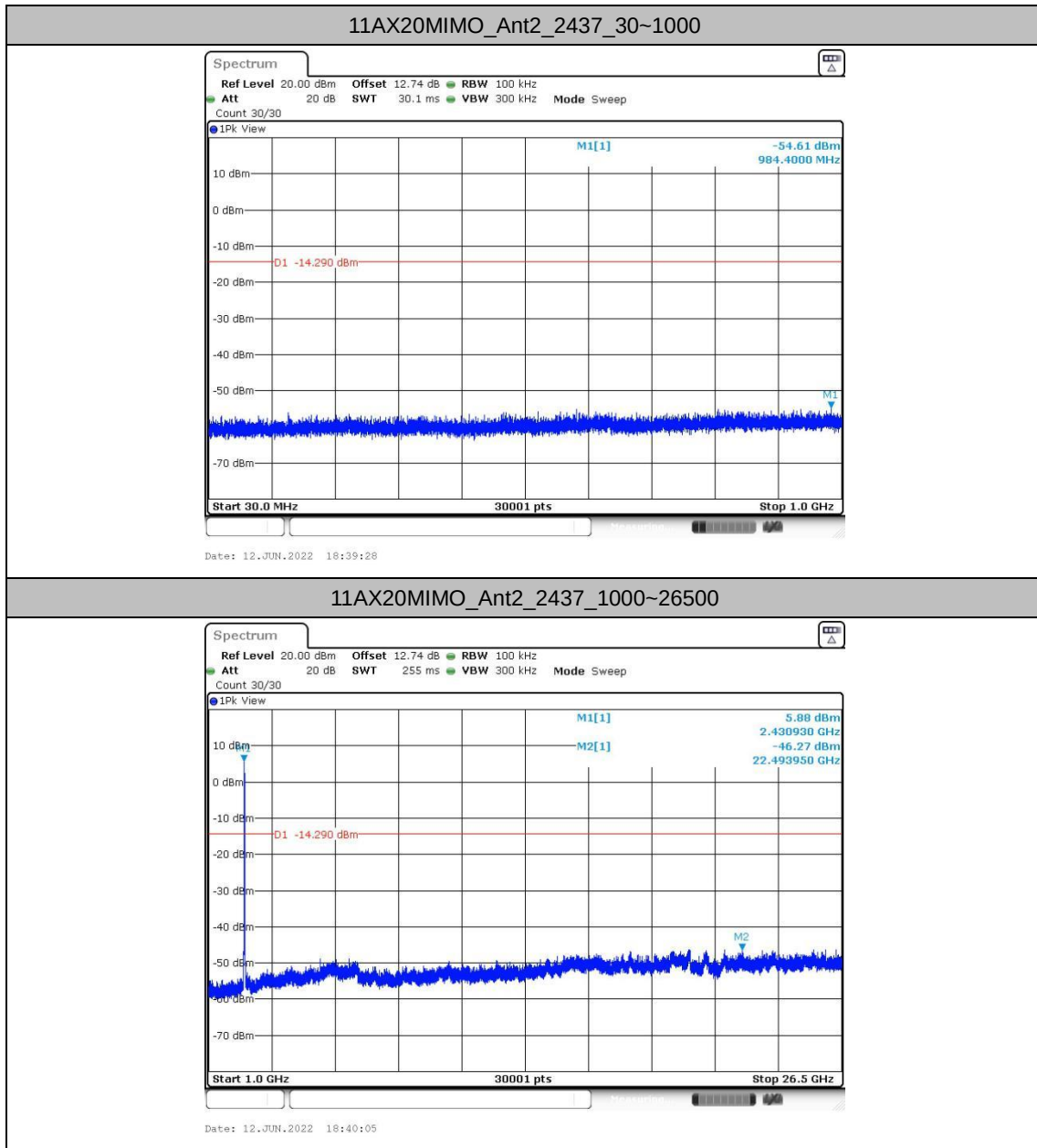






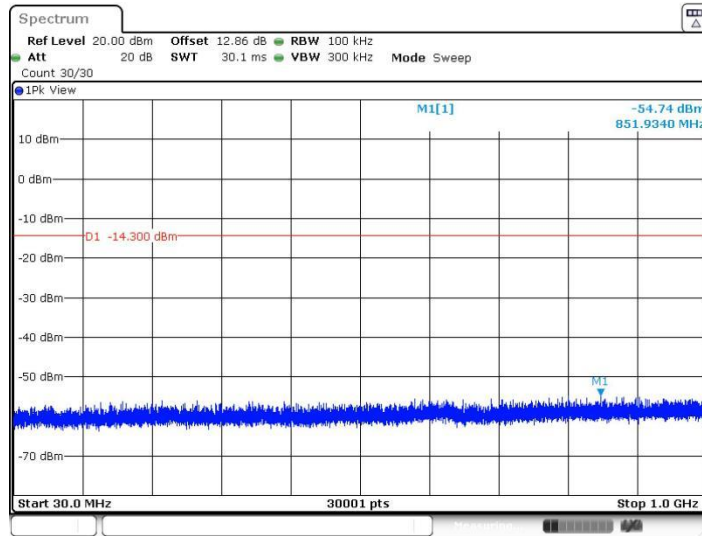




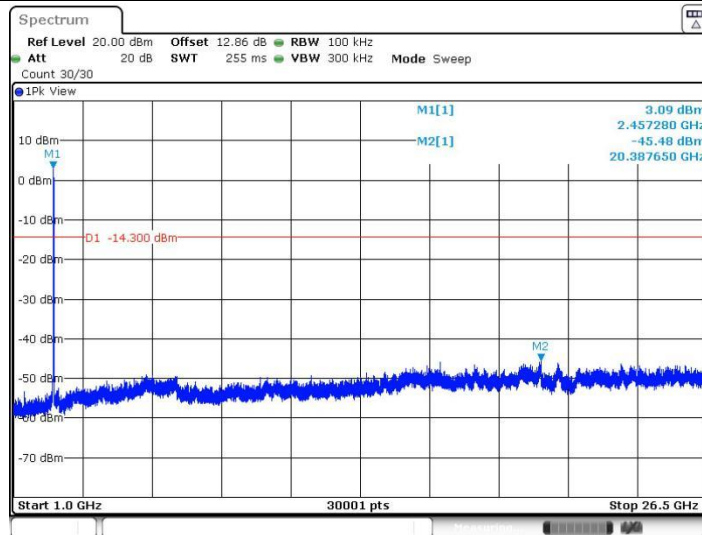




11AX20MIMO_Ant1_2462_30~1000

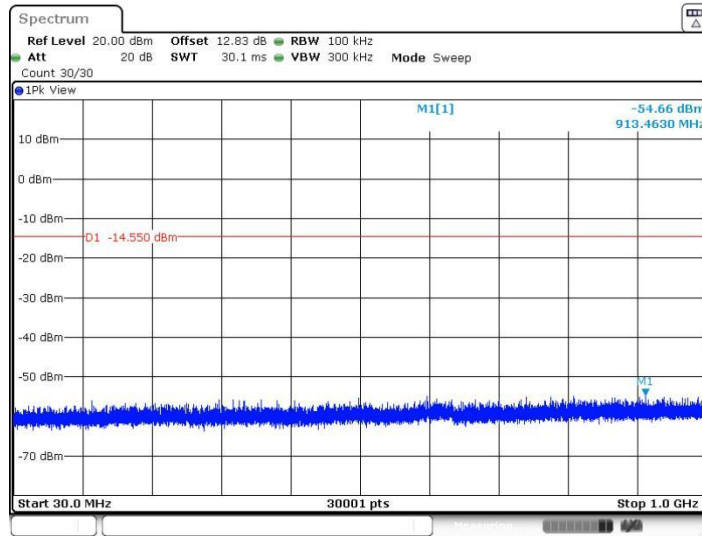


11AX20MIMO_Ant1_2462_1000~26500

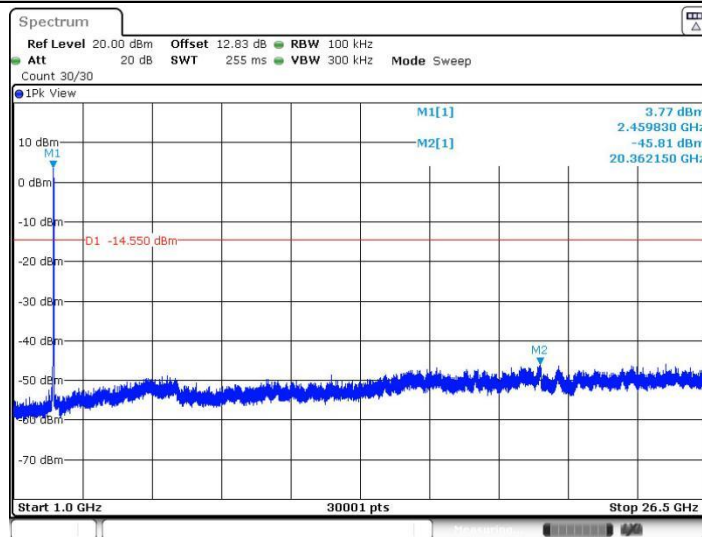




11AX20MIMO_Ant2_2462_30~1000

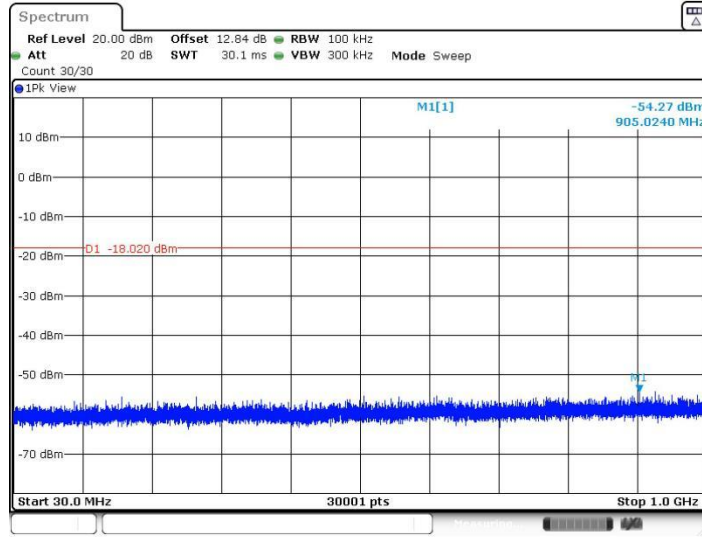


11AX20MIMO_Ant2_2462_1000~26500



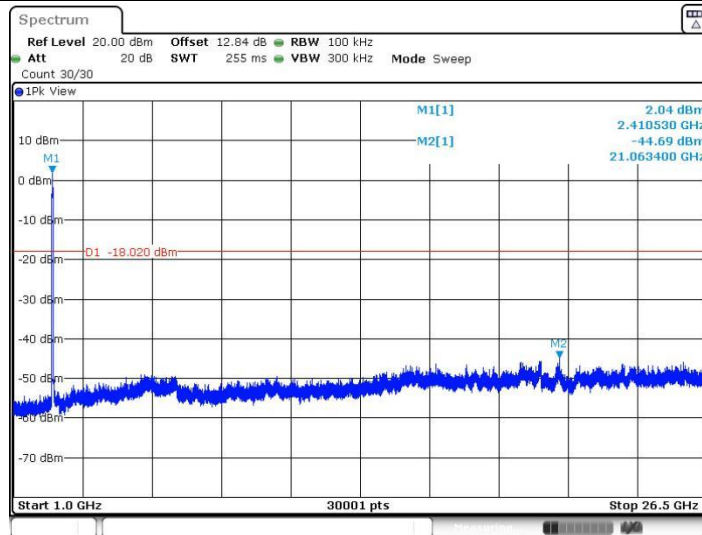


11AX40MIMO_Ant1_2422_30~1000



Date: 18.JUN.2022 00:23:46

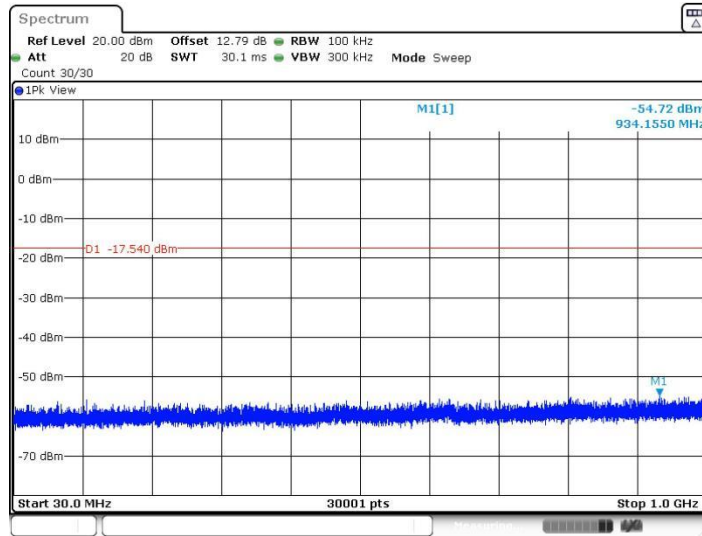
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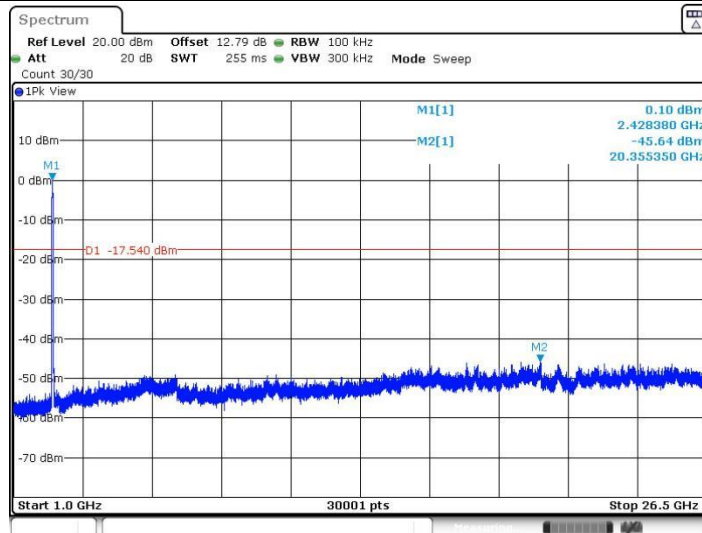


11AX40MIMO_Ant2_2422_30~1000

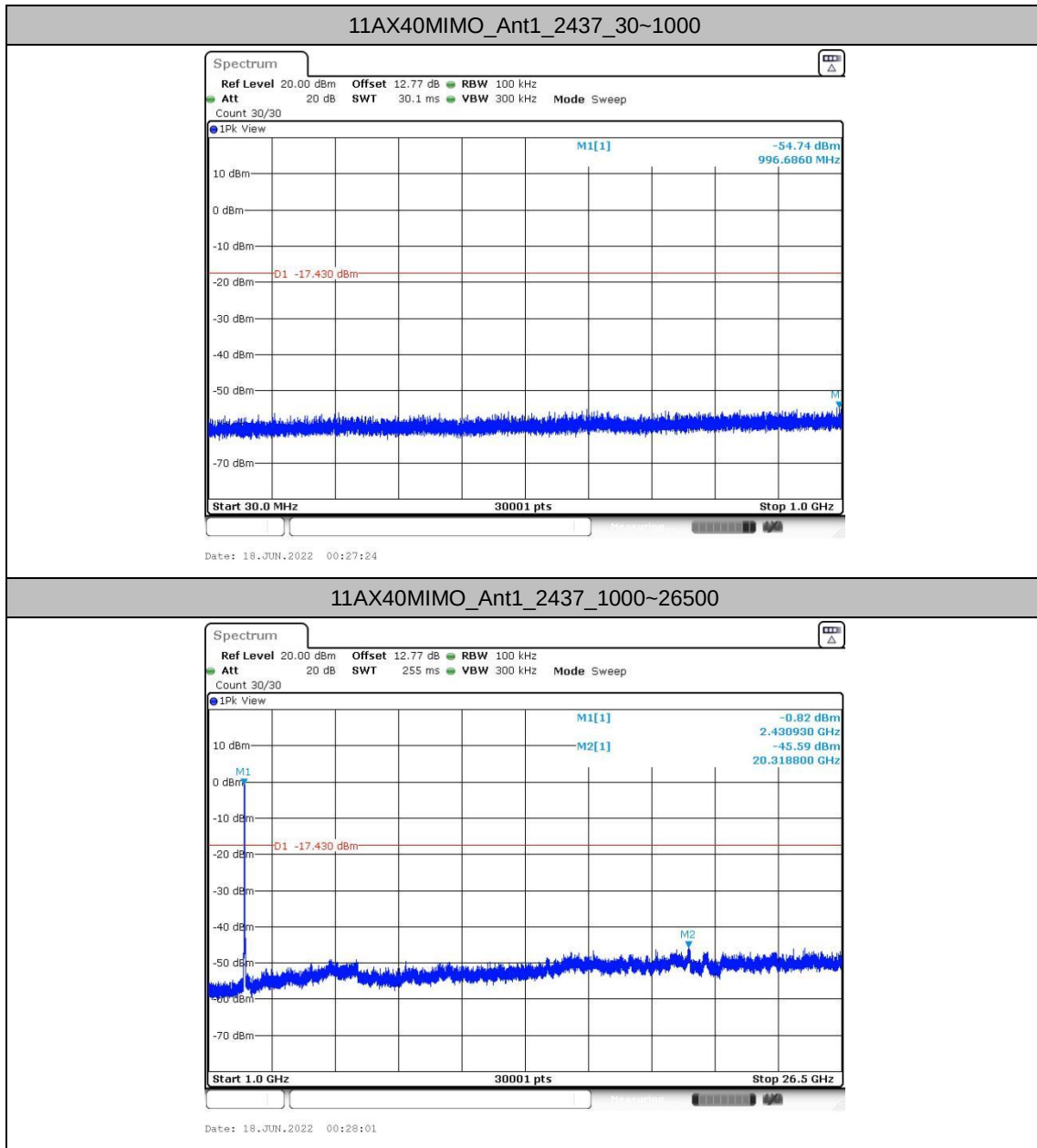


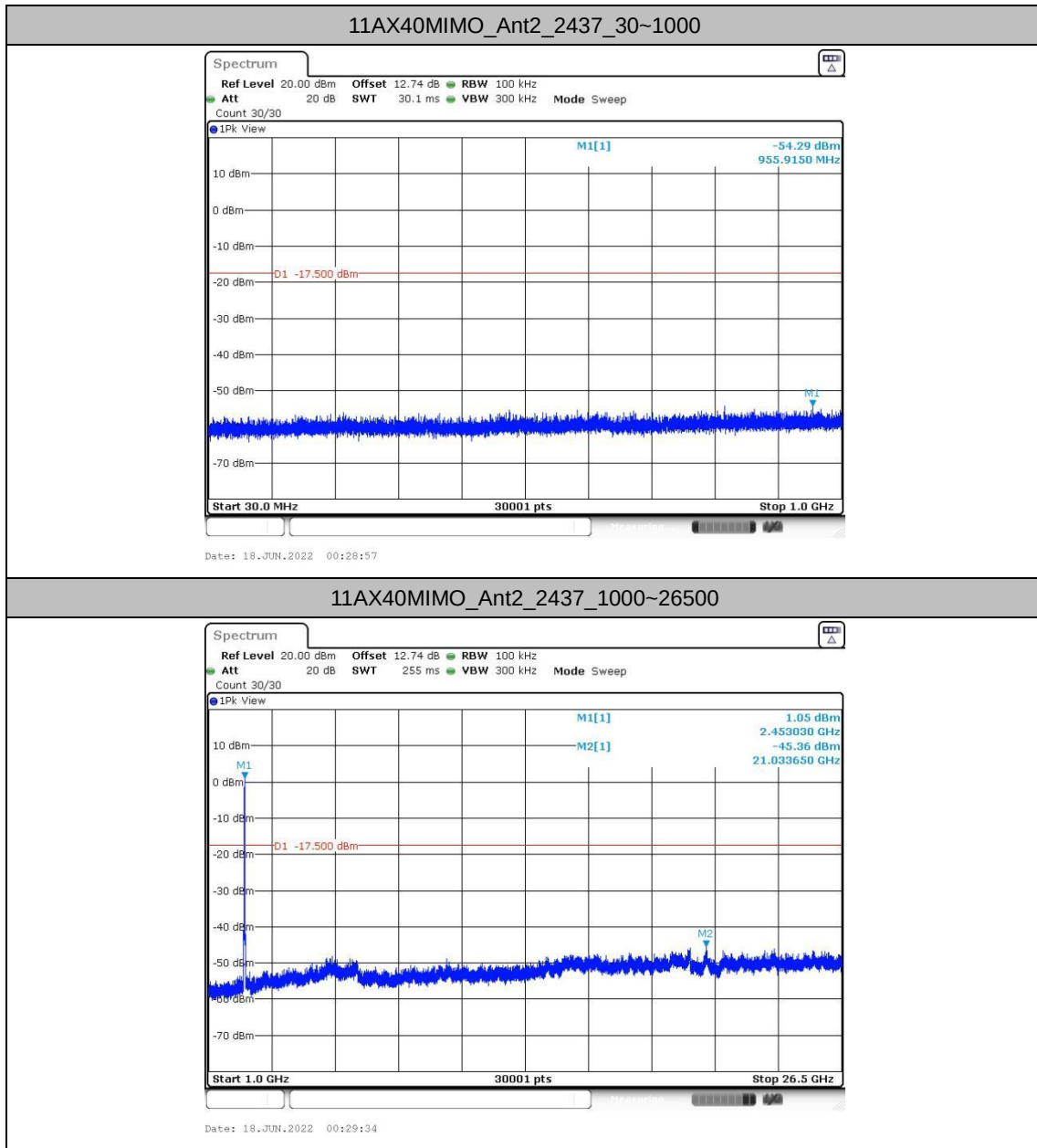
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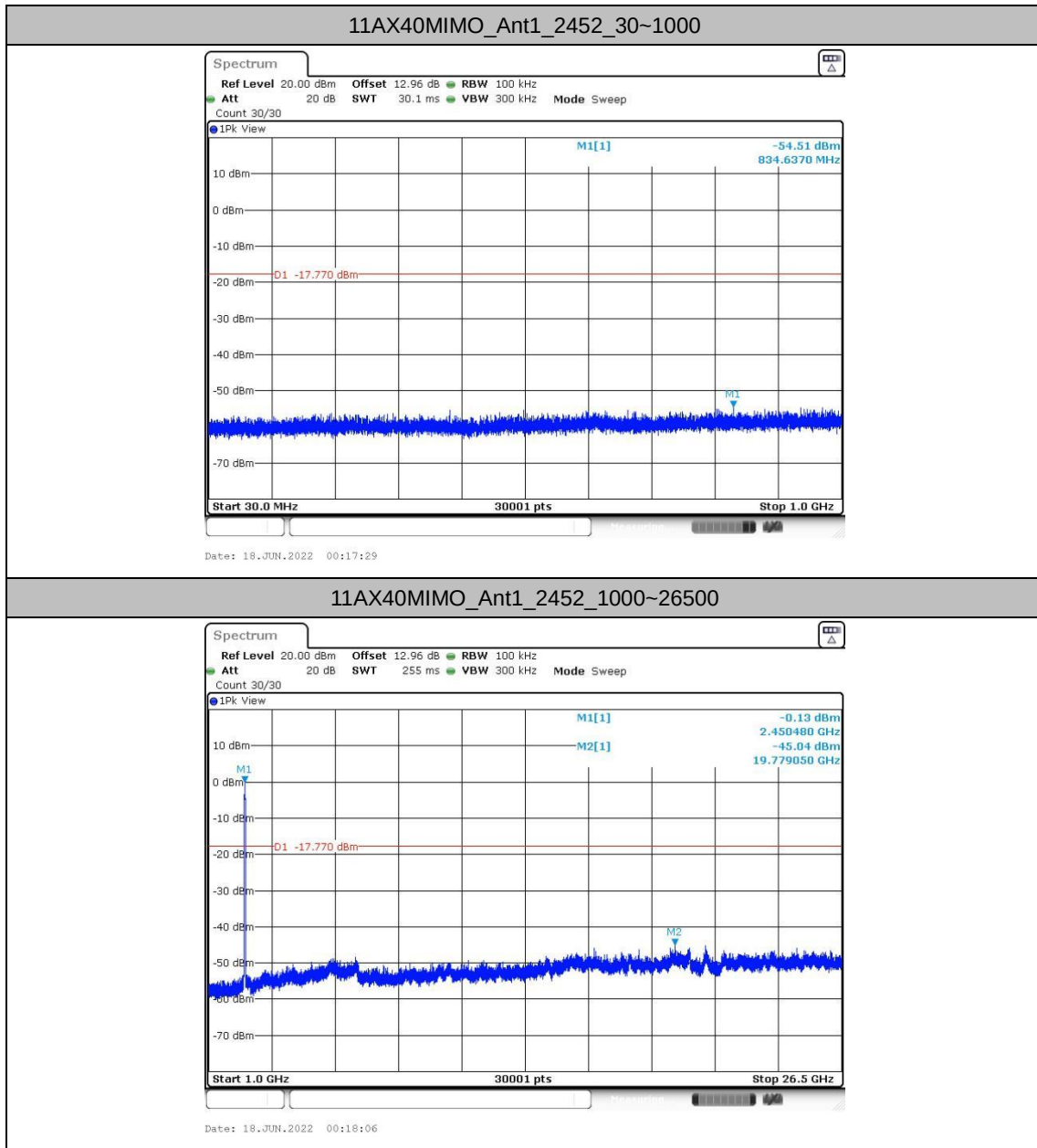
11AX40MIMO_Ant2_2422_1000~26500



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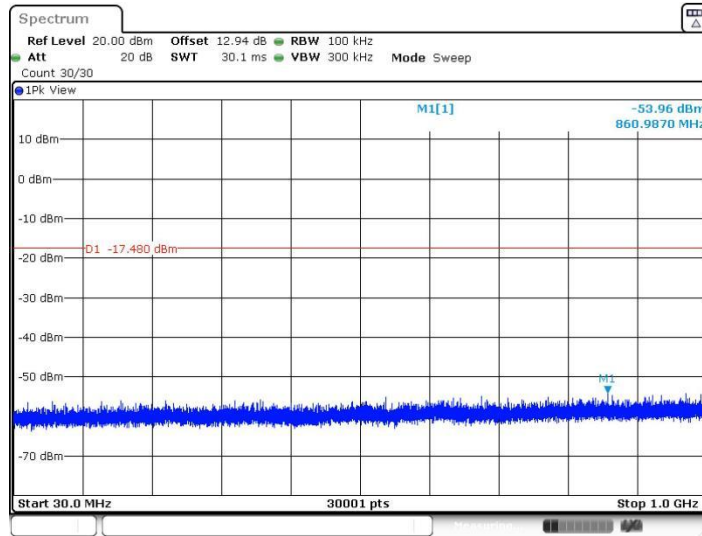




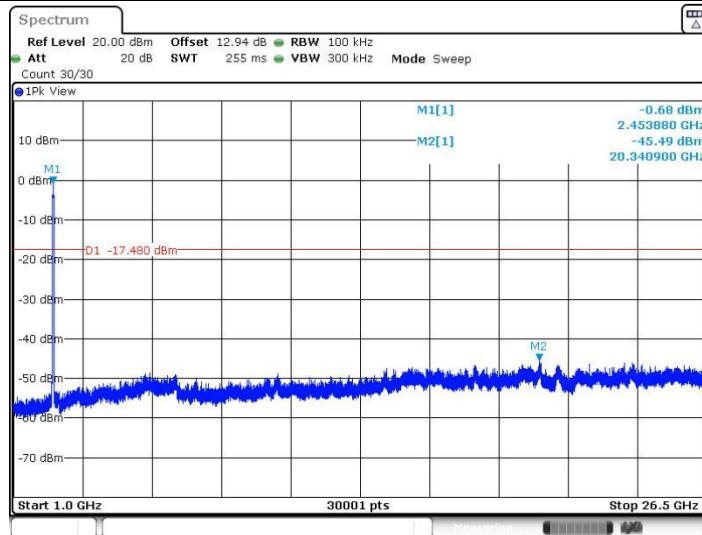




11AX40MIMO_Ant2_2452_30~1000



11AX40MIMO_Ant2_2452_1000~26500





Maximum Output Power

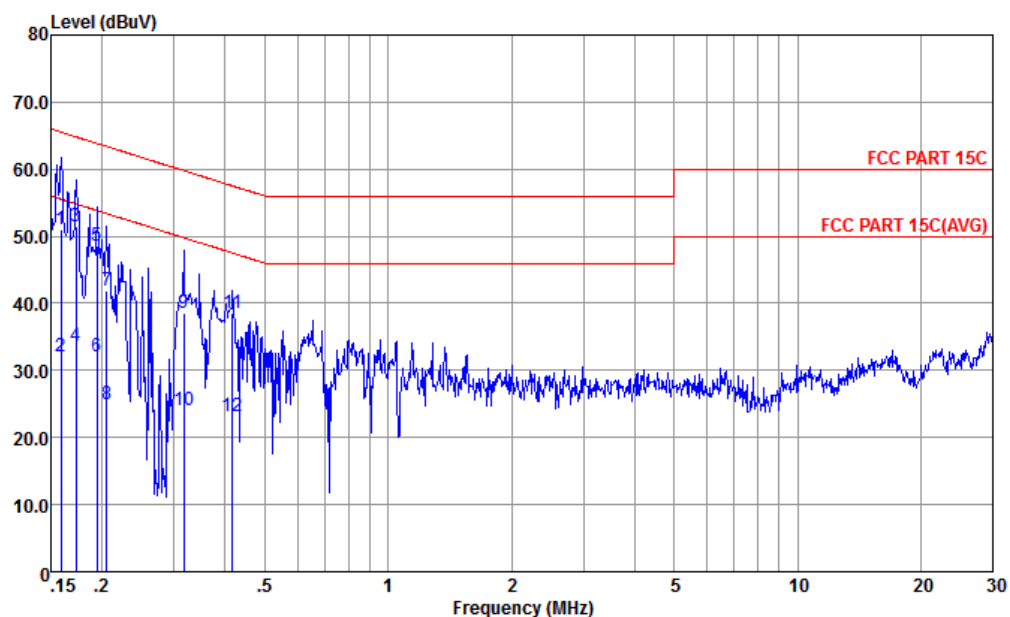
Peak Power

2.4GHz Band MIMO																
Mod.	DataRate	NTX	CH.	Freq. (MHz)	Peak Conducted Powe(dBm)			Conducted Power Limit(dBm)		DG(dBi)		EIRP Power (dBm)		EIRPPower Limit(dBm)		Pass/Fail
					Ant1	Ant2	SUM	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	
11b	1Mbps	2	1	2412	22.65	22.21	25.45	30.00		-3.30		22.15		36.00		Pass
11b	1Mbps	2	6	2437	22.67	22.28	25.49	30.00		-3.30		22.19		36.00		Pass
11b	1Mbps	2	11	2462	22.42	22.33	25.39	30.00		-3.30		22.09		36.00		Pass
11g	6Mbps	2	1	2412	25.78	26.15	28.98	30.00		-3.30		25.68		36.00		Pass
11g	6Mbps	2	6	2437	25.63	25.85	28.75	30.00		-3.30		25.45		36.00		Pass
11g	6Mbps	2	11	2462	25.56	26.12	28.86	30.00		-3.30		25.56		36.00		Pass
HT20	MCS0	2	1	2412	26.02	25.89	28.97	30.00		-3.30		25.67		36.00		Pass
HT20	MCS0	2	6	2437	25.76	25.94	28.86	30.00		-3.30		25.56		36.00		Pass
HT20	MCS0	2	11	2462	25.75	26.12	28.95	30.00		-3.30		25.65		36.00		Pass
HT40	MCS0	2	3	2422	25.22	25.68	28.47	30.00		-3.30		25.17		36.00		Pass
HT40	MCS0	2	6	2437	24.93	25.44	28.20	30.00		-3.30		24.90		36.00		Pass
HT40	MCS0	2	9	2452	25.03	25.12	28.09	30.00		-3.30		24.79		36.00		Pass
HE20	Full	2	1	2412	26.01	26.13	29.08	30.00		-3.30		25.78		36.00		Pass
HE20	26/0	2	1	2412	20.06	20.54	23.32	30.00		-3.30		20.02		36.00		Pass
HE20	52/37	2	1	2412	21.58	22.18	24.90	30.00		-3.30		21.60		36.00		Pass
HE20	106/53	2	1	2412	23.44	23.93	26.70	30.00		-3.30		23.40		36.00		Pass
HE20	Full	2	6	2437	25.98	26.08	29.04	30.00		-3.30		25.74		36.00		Pass
HE20	26/4	2	6	2437	19.73	20.09	22.92	30.00		-3.30		19.62		36.00		Pass
HE20	52/39	2	6	2437	21.22	21.44	24.34	30.00		-3.30		21.04		36.00		Pass
HE20	106/53	2	6	2437	23.03	23.25	26.15	30.00		-3.30		22.85		36.00		Pass
HE20	Full	2	11	2462	25.72	26.23	28.99	30.00		-3.30		25.69		36.00		Pass
HE20	26/8	2	11	2462	19.66	20.32	23.01	30.00		-3.30		19.71		36.00		Pass
HE20	52/40	2	11	2462	20.95	21.76	24.38	30.00		-3.30		21.08		36.00		Pass
HE20	106/54	2	11	2462	23.42	23.62	26.53	30.00		-3.30		23.23		36.00		Pass
HE40	Full	2	3	2422	25.58	25.63	28.62	30.00		-3.30		25.32		36.00		Pass
HE40	242/61	2	3	2422	23.63	24.10	26.88	30.00		-3.30		23.58		36.00		Pass
HE40	Full	2	6	2437	25.41	25.55	28.49	30.00		-3.30		25.19		36.00		Pass
HE40	242/61	2	6	2437	23.44	23.70	26.58	30.00		-3.30		23.28		36.00		Pass
HE40	Full	2	9	2452	25.05	25.18	28.13	30.00		-3.30		24.83		36.00		Pass
HE40	242/62	2	9	2452	23.31	23.54	26.44	30.00		-3.30		23.14		36.00		Pass



Appendix B. AC Conducted Emission Test Results

Test Engineer :	Amos Zhao	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.		

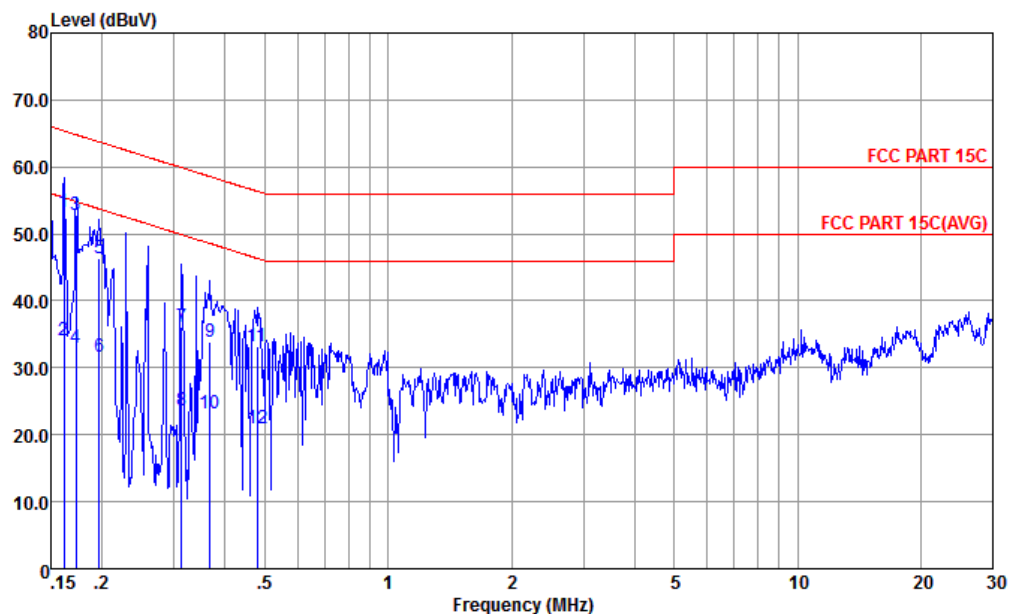


Site : CO01-KS
Condition : FCC PART 15C LISN-060105-L LINE

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.159	51.08	-14.44	65.52	40.60	0.02	10.46	QP
2	0.159	32.08	-23.44	55.52	21.60	0.02	10.46	Average
3 *	0.173	51.55	-13.26	64.81	41.10	0.03	10.42	QP
4	0.173	33.75	-21.06	54.81	23.30	0.03	10.42	Average
5	0.194	48.61	-15.23	63.84	38.20	0.04	10.37	QP
6	0.194	32.01	-21.83	53.84	21.60	0.04	10.37	Average
7	0.205	41.90	-21.50	63.40	31.50	0.04	10.36	QP
8	0.205	25.00	-28.40	53.40	14.60	0.04	10.36	Average
9	0.317	38.57	-21.23	59.80	28.20	0.07	10.30	QP
10	0.317	24.00	-25.80	49.80	13.63	0.07	10.30	Average
11	0.417	38.55	-18.96	57.51	28.20	0.09	10.26	QP
12	0.417	23.15	-24.36	47.51	12.80	0.09	10.26	Average



Test Engineer :	Amos Zhao	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	Remark
	MHz	dBμV	Limit	Line	Level	Factor	Loss	
			dB	dBμV	dBμV	dB	dB	
1 *	0.162	53.36	-12.02	65.38	42.80	0.11	10.45	QP
2	0.162	34.16	-21.22	55.38	23.60	0.11	10.45	Average
3	0.173	52.73	-12.08	64.81	42.20	0.11	10.42	QP
4	0.173	33.03	-21.78	54.81	22.50	0.11	10.42	Average
5	0.197	46.27	-17.49	63.76	35.80	0.10	10.37	QP
6	0.197	31.57	-22.19	53.76	21.10	0.10	10.37	Average
7	0.313	36.00	-23.88	59.88	25.60	0.10	10.30	QP
8	0.313	23.70	-26.18	49.88	13.30	0.10	10.30	Average
9	0.367	33.98	-24.58	58.56	23.60	0.10	10.28	QP
10	0.367	23.18	-25.38	48.56	12.80	0.10	10.28	Average
11	0.479	33.15	-23.21	56.36	22.80	0.11	10.24	QP
12	0.479	20.95	-25.41	46.36	10.60	0.11	10.24	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 (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.
4+6		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 11 2462MHz	*	2462	111.13	-	-	107.78	32.96	7.22	36.83	339	60	P	H
	*	2462	107.96	-	-	104.61	32.96	7.22	36.83	339	60	A	H
		2486.5	53.33	-20.67	74	49.92	32.98	7.25	36.82	339	60	P	H
		2484.82	41.85	-12.15	54	38.44	32.98	7.25	36.82	339	60	A	H
	*	2462	110.02	-	-	106.67	32.96	7.22	36.83	100	88	P	V
	*	2460	106.81	-	-	103.46	32.96	7.22	36.83	100	88	A	V
		2488.18	52.11	-21.89	74	48.67	33	7.25	36.81	100	88	P	V
		2485.6	41.2	-12.8	54	37.79	32.98	7.25	36.82	100	88	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.
4+6		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 11 2462MHz		4920	41.42	-32.58	74	62.27	34.26	10.34	65.45	300	0	P	H
		7380	46.53	-27.47	74	64.03	35.88	12.73	66.11	300	0	P	H
		4920	41.57	-32.43	74	62.42	34.26	10.34	65.45	100	0	P	V
		7380	51.05	-22.95	74	68.55	35.88	12.73	66.11	134	138	P	V
		7380	46.99	-7.01	54	64.49	35.88	12.73	66.11	134	138	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 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.		(MHz)	(dBμV/m)	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+6				(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
8802.11ax HE20 Full CH 11 2462MHz	*	2462	112.03	-	-	108.68	32.96	7.22	36.83	101	309	P	H
	*	2460	103.76	-	-	100.41	32.96	7.22	36.83	101	309	A	H
		2484.58	64.13	-9.87	74	60.72	32.98	7.25	36.82	101	309	P	H
		2483.5	50.51	-3.49	54	47.1	32.98	7.25	36.82	101	309	A	H
	*	2460	114.99	-	-	111.64	32.96	7.22	36.83	228	262	P	V
	*	2460	104.62	-	-	101.27	32.96	7.22	36.83	228	262	A	V
		2485	62.9	-11.1	74	59.49	32.98	7.25	36.82	228	262	P	V
		2483.5	49.16	-4.84	54	45.75	32.98	7.25	36.82	228	262	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	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.		(MHz)	(dBμV/m)	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+6				(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ax HE20 Full CH 11 2462MHz		4920	41.45	-32.55	74	62.3	34.26	10.34	65.45	300	0	P	H
		7380	43.88	-30.12	74	61.38	35.88	12.73	66.11	300	0	P	H
		4920	41.06	-32.94	74	61.91	34.26	10.34	65.45	100	0	P	V
		7380	42.49	-31.51	74	59.99	35.88	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 802.11ax HE20 Partial 106 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.		(MHz)	(dBμV/m)	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+6				(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ax HE20 Partial 106/53 CH 01 2412MHz		2389.95	52.52	-21.48	74	49.4	32.88	7.1	36.86	314	63	P	H
		2389.95	38.35	-15.65	54	35.23	32.88	7.1	36.86	314	63	A	H
		2410	108.41	-	-	105.23	32.9	7.13	36.85	314	63	P	H
		2410	99.98	-	-	96.8	32.9	7.13	36.85	314	63	A	H
		2389.95	54.12	-19.88	74	51	32.88	7.1	36.86	105	86	P	V
		2389.95	38.78	-15.22	54	35.66	32.88	7.1	36.86	105	86	A	V
		2410	110.53	-	-	107.35	32.9	7.13	36.85	105	86	P	V
		2408	101.61	-	-	98.43	32.9	7.13	36.85	105	86	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	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.		(MHz)	(dBμV/m)	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+6				(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ax HE40 Full CH 09 2452MHz		2374.22	51.12	-22.88	74	48.06	32.86	7.07	36.87	367	66	P	H
		2389.95	40.07	-13.93	54	36.95	32.88	7.1	36.86	367	66	A	H
	*	2460	109.3	-	-	105.95	32.96	7.22	36.83	367	66	P	H
	*	2460	99.1	-	-	95.75	32.96	7.22	36.83	367	66	A	H
		2484.94	63.28	-10.72	74	59.87	32.98	7.25	36.82	367	66	P	H
		2483.5	49.91	-4.09	54	46.5	32.98	7.25	36.82	367	66	A	H
		2386.96	52.07	-21.93	74	48.95	32.88	7.1	36.86	100	102	P	V
		2389.95	40.94	-13.06	54	37.82	32.88	7.1	36.86	100	102	A	V
	*	2450	110.51	-	-	107.22	32.94	7.19	36.84	100	102	P	V
	*	2460	100.58	-	-	97.23	32.96	7.22	36.83	100	102	A	V
		2484.88	64.55	-9.45	74	61.14	32.98	7.25	36.82	100	102	P	V
		2483.5	50.67	-3.33	54	47.26	32.98	7.25	36.82	100	102	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. 4+6	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		4904	40.21	-33.79	74	61.08	34.25	10.32	65.44	300	0	P	H
HE40 Full		7356	43.53	-30.47	74	60.99	35.87	12.73	66.06	300	0	P	H
CH 09		4904	40.19	-33.81	74	61.06	34.25	10.32	65.44	100	0	P	V
2452MHz		7356	44.93	-29.07	74	62.39	35.87	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.												

2.4GHz 2400~2483.5MHz

WIFI 802.11ax HE40 Partial 242 (Band Edge @ 3m)

WIFI Ant. 4+6	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 Partial 242/62 CH 09 2452MHz		2311.69	48.65	-25.35	74	45.81	32.77	6.98	36.91	302	66	P	H
		2389.95	37.84	-16.16	54	34.72	32.88	7.1	36.86	302	66	A	H
		2483.68	57.33	-16.67	74	53.92	32.98	7.25	36.82	302	66	P	H
		2483.5	41.76	-12.24	54	38.35	32.98	7.25	36.82	302	66	A	H
		2470	105.3	-	-	101.95	32.96	7.22	36.83	302	66	P	H
		2460	96.08	-	-	92.73	32.96	7.22	36.83	302	66	A	H
		2323.91	49.14	-24.86	74	46.24	32.79	7.01	36.9	100	84	P	V
		2389.82	38.46	-15.54	54	35.34	32.88	7.1	36.86	100	84	A	V
		2486.56	58.67	-15.33	74	55.26	32.98	7.25	36.82	100	84	P	V
		2483.5	42.48	-11.52	54	39.07	32.98	7.25	36.82	100	84	A	V
Remark		2460	107.36	-	-	104.01	32.96	7.22	36.83	100	84	P	V
		2460	98.29	-	-	94.94	32.96	7.22	36.83	100	84	A	V
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 Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
4+6		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11ax HE40 LF		30.97	20.53	-19.47	40	27.64	24.98	0.71	32.8	-	-	P	H
		131.85	15.28	-28.22	43.5	28.66	17.72	1.74	32.84	-	-	P	H
		264.74	18.02	-27.98	46	28.94	19.64	2.48	33.04	-	-	P	H
		383.08	20.56	-25.44	46	28.14	22.27	2.98	32.83	-	-	P	H
		633.34	26.58	-19.42	46	29.6	25.77	3.84	32.63	-	-	P	H
		873.9	30.12	-15.88	46	30.85	27.3	4.52	32.55	-	-	P	H
		30	21.9	-18.1	40	28.39	25.5	0.71	32.7	-	-	P	V
		64.92	16.6	-23.4	40	35.19	13.3	1.21	33.1	-	-	P	V
		250.19	19.81	-26.19	46	31.09	19.4	2.42	33.1	-	-	P	V
		421.88	21.05	-24.95	46	27.58	23.1	3.13	32.76	-	-	P	V
		640.13	26	-20	46	28.98	25.82	3.86	32.66	-	-	P	V
		857.41	28.71	-17.29	46	29.59	27.23	4.47	32.58	-	-	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	Peak or Average
H/V	Horizontal or Vertical



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)

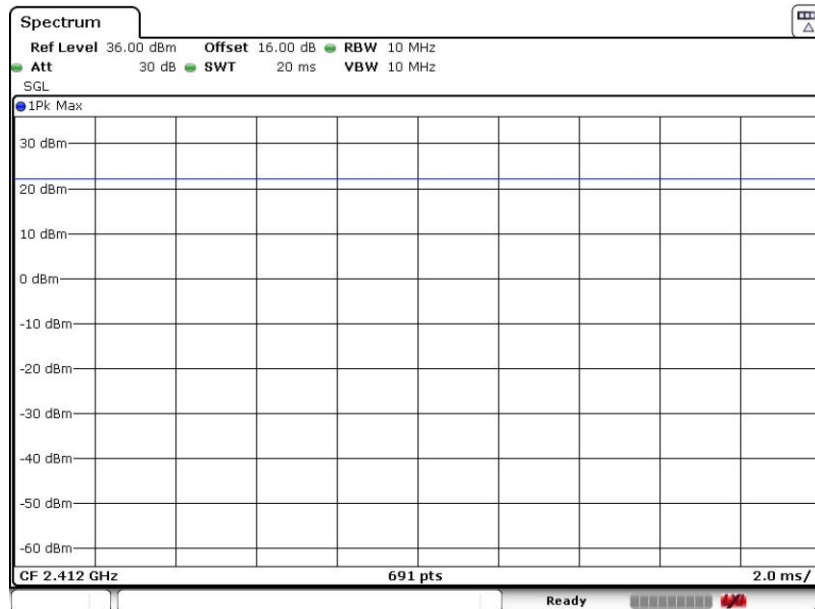
= -10.46(dB)

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
802.11b	100	-	-	10Hz
802.11g	100	-	-	10Hz
802.11ax HE20	100	-	-	10Hz
802.11ax HE40	100	-	-	10Hz

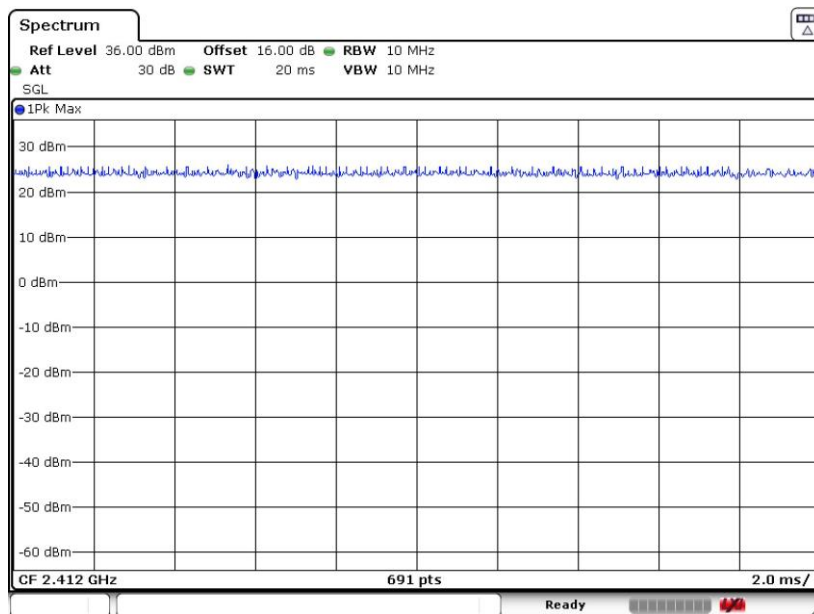
802.11b



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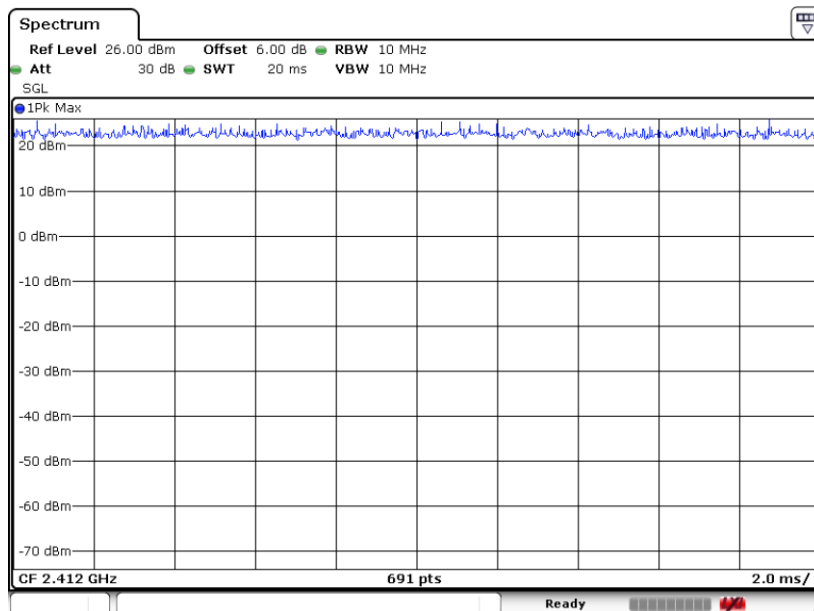


802.11g



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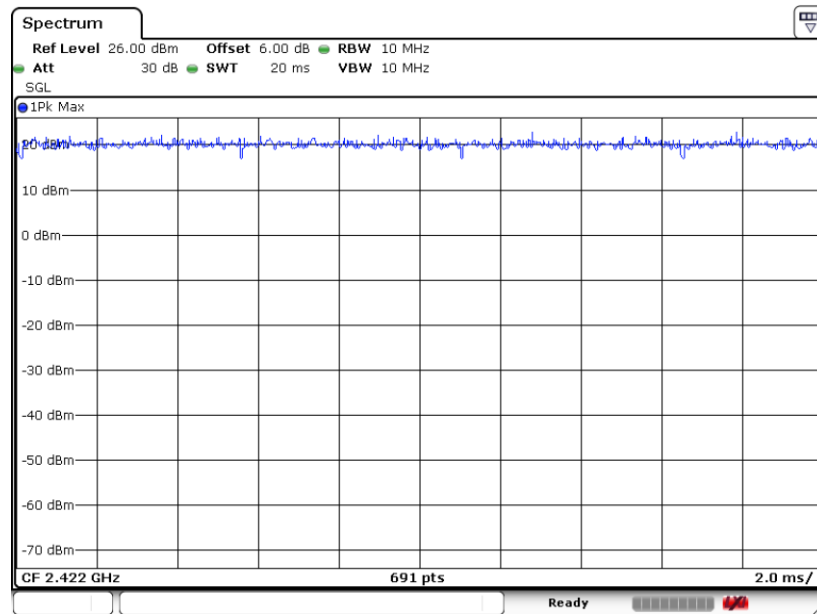
802.11ax HE20



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802.11ax HE40



Date: 9.JUN.2022 05:12:35