

Appendix D: Test Results of Radiated Spurious Emissions for PCB

Antenna

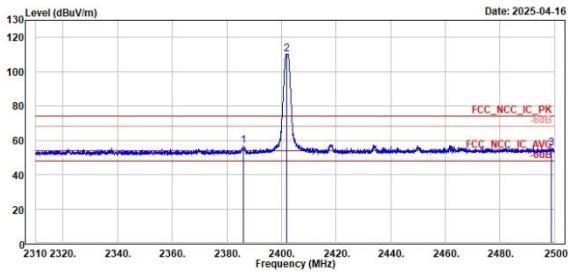
ANT 14, Main Source, ECC, PIC32WM-BZ6204UC
Band Edges, 2.31GHz ~ 2.5GHz

BLE_1M

Low Channel (Horizontal) Peak



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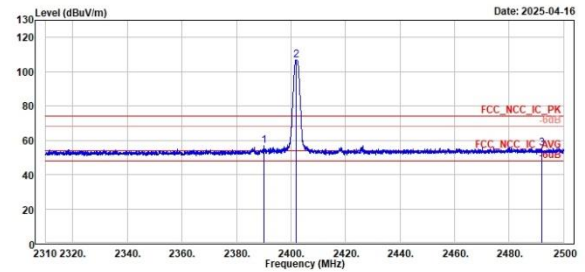


	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	Level Factor	Line	Limit	cm	deg			
1	2386.00	56.80	18.63	38.17	74.00	-17.20	301	199 Peak	Horizontal	
2 *	2402.00	110.37	72.06	38.31	74.00	36.37	301	199 Peak	Horizontal	
3	2498.96	55.37	16.75	38.62	74.00	-18.63	301	199 Peak	Horizontal	

Low Channel (Vertical) Peak



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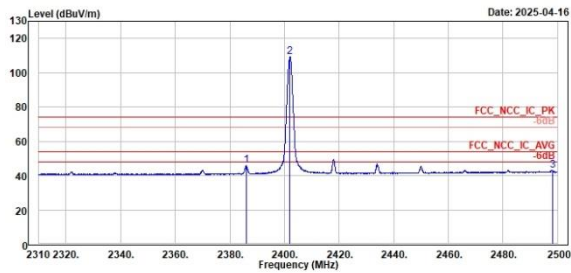
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	MHz	dBuV/m	Level Factor	Line	Limit	cm	deg			
1	2389.99	56.71	18.50	38.21	74.00	-17.29	304	109 Peak	Vertical	
2 *	2402.00	106.67	68.36	38.31	74.00	32.67	304	109 Peak	Vertical	
3	2491.97	55.52	16.91	38.61	74.00	-18.48	304	109 Peak	Vertical	

BLE_1M

Low Channel (Horizontal) Average



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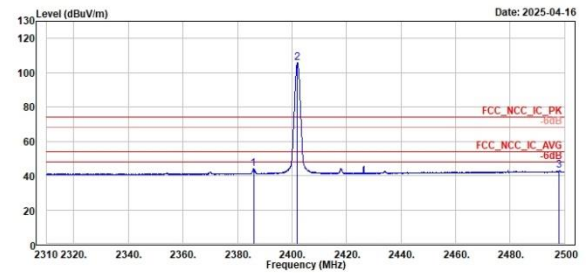


	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2386.00	45.78	7.61	38.17	54.00	-8.22	301	199	Average	Horizontal		
2 *	2402.00	109.28	70.97	38.31	54.00	55.28	301	199	Average	Horizontal		
3	2498.10	43.13	4.51	38.62	54.00	-10.87	301	199	Average	Horizontal		

Low Channel (Vertical) Average



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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2385.91	43.82	5.65	38.17	54.00	-10.18	304	109	Average	Vertical		
2 *	2402.00	109.67	67.36	38.31	54.00	55.67	304	109	Average	Vertical		
3	2498.05	42.78	4.16	38.62	54.00	-11.22	304	109	Average	Vertical		

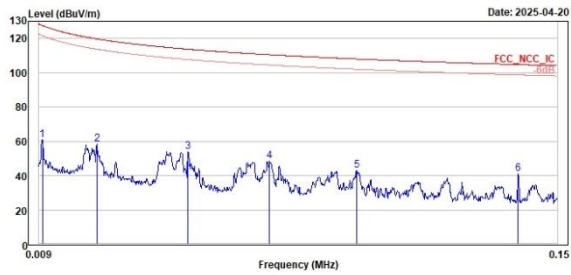
Spurious Emissions, Tx Mode, 9kHz ~ 30MHz

BLE_2M

Low Channel (Open) 9kHz~150kHz



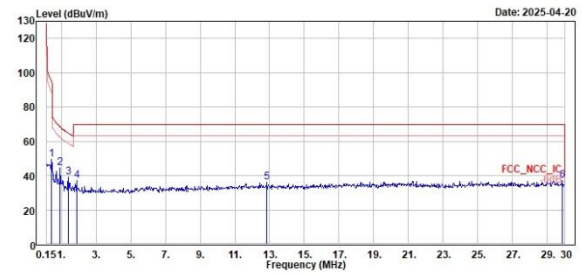
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	0.01	61.03	42.92	18.11	127.60	-66.57	100	150 Peak		Open		
2	0.02	58.43	38.68	19.75	119.70	-61.27	100	244 Peak		Open		
3	0.05	54.02	35.00	19.02	113.68	-59.66	100	244 Peak		Open		
4	0.07	48.56	30.09	18.47	110.48	-61.92	100	258 Peak		Open		
5	0.10	42.99	24.96	18.03	106.00	-65.01	100	258 Peak		Open		
6	0.14	41.26	22.99	18.27	104.72	-63.46	100	216 Peak		Open		



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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	0.45	49.67	30.97	18.70	94.57	-44.90	100	217 Peak		Open		
2	0.93	44.58	25.73	18.85	68.27	-23.69	100	217 Peak		Open		
3	1.40	39.20	20.39	18.81	64.66	-25.46	100	176 Peak		Open		
4	1.88	37.24	18.41	18.83	69.50	-32.26	100	176 Peak		Open		
5	12.84	35.87	14.28	21.59	69.50	-33.63	100	161 Peak		Open		
6	29.85	36.85	13.60	23.25	69.50	-32.65	100	220 Peak		Open		

Spurious Emissions, Tx Mode, 30MHz ~ 1GHz

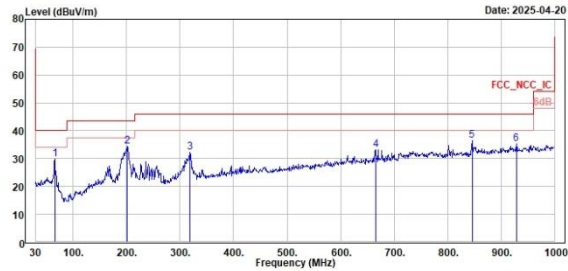
BLE_2M

Low Channel (Horizontal)

Low Channel (Vertical)



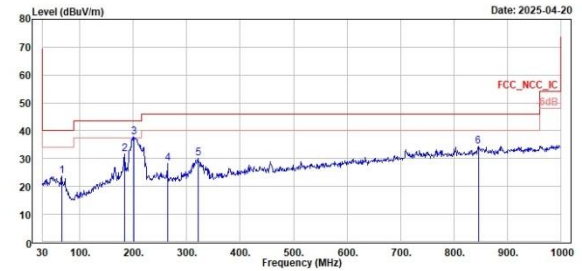
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	65.89	29.79	37.36	-7.57	40.00	-10.21	400	173	Peak	Horizontal		
2	201.69	34.36	42.53	-8.17	43.50	-9.14	100	254	Peak	Horizontal		
3	319.06	32.19	36.92	-4.73	46.00	-13.81	100	146	Peak	Horizontal		
4	665.35	33.27	31.84	1.43	46.00	-12.73	100	220	Peak	Horizontal		
5	845.77	36.39	32.30	4.09	46.00	-9.61	300	22	Peak	Horizontal		
6	928.22	35.28	30.05	5.23	46.00	-10.72	200	182	Peak	Horizontal		



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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	65.89	23.72	31.29	-7.57	40.00	-16.28	300	17	Peak	Vertical		
2	184.23	31.72	39.14	-7.42	43.50	-11.78	100	252	Peak	Vertical		
3	201.69	37.81	45.98	-8.17	43.50	-5.69	100	84	Peak	Vertical		
4	263.77	28.24	34.70	-6.46	46.00	-17.76	200	188	Peak	Vertical		
5	321.00	29.97	34.66	-4.69	46.00	-16.03	218	0	Peak	Vertical		
6	845.77	34.31	30.22	4.09	46.00	-11.69	200	306	Peak	Vertical		

Spurious Emissions, Tx Mode, 1GHz ~ 26.5GHz

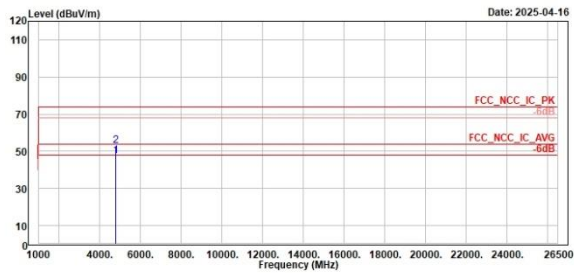
BLE_1M

Low Channel (Horizontal)

Low Channel (Vertical)



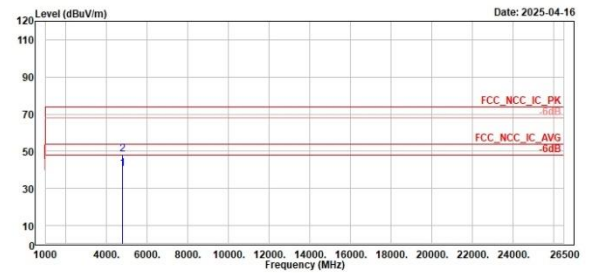
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Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	4804.00	47.35	56.43	-9.08	54.00	-6.65	279	164	Average	Horizontal	
2	4804.00	53.02	62.10	-9.08	74.00	-20.98	279	164	Peak	Horizontal	



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Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	4804.00	48.72	49.08	-9.08	54.00	-13.28	480	121	Average	Vertical	
2	4804.00	48.16	57.24	-9.08	74.00	-25.84	480	121	Peak	Vertical	

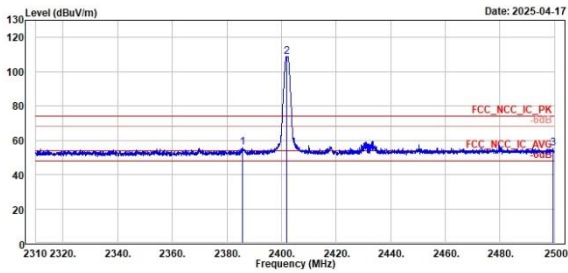
ANT 15, Main Source, ECC, PIC32WM-BZ6204UC
Band Edges, 2.31GHz ~ 2.5GHz

BLE_1M

Low Channel (Horizontal) Peak



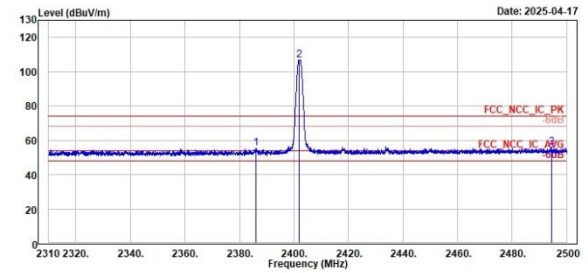
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	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2385.67	56.01	17.84	38.17	74.00	-17.99	294	203 Peak	Horizontal	
2 *	2402.00	100.71	70.40	38.31	74.00	34.71	294	203 Peak	Horizontal	
3	2499.48	55.58	16.96	38.62	74.00	-18.42	294	203 Peak	Horizontal	



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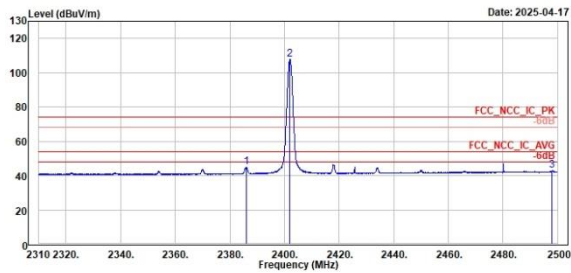
	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2386.14	55.38	17.21	38.17	74.00	-18.62	349	284 Peak	Vertical	
2 *	2402.00	100.73	68.42	38.31	74.00	32.73	349	284 Peak	Vertical	
3	2494.63	55.71	17.10	38.61	74.00	-18.29	349	284 Peak	Vertical	

BLE_1M

Low Channel (Horizontal) Average



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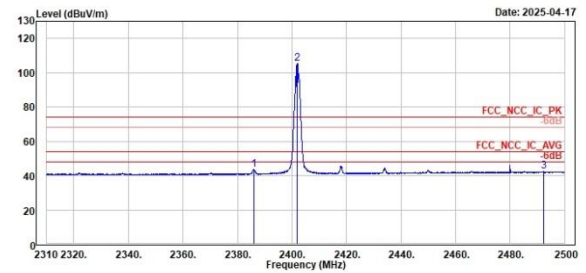


	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2386.10	45.12	6.95	38.17	54.00	-8.88	294	203	Average	Horizontal		
2 *	2402.00	107.60	69.29	38.31	54.00	53.60	294	203	Average	Horizontal		
3	2498.05	42.80	4.18	38.62	54.00	-11.20	294	203	Average	Horizontal		

Low Channel (Vertical) Average



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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2386.05	43.70	5.53	38.17	54.00	-10.30	349	284	Average	Vertical		
2 *	2402.00	105.30	66.99	38.31	54.00	51.30	349	284	Average	Vertical		
3	2492.40	42.32	3.71	38.61	54.00	-11.68	349	284	Average	Vertical		

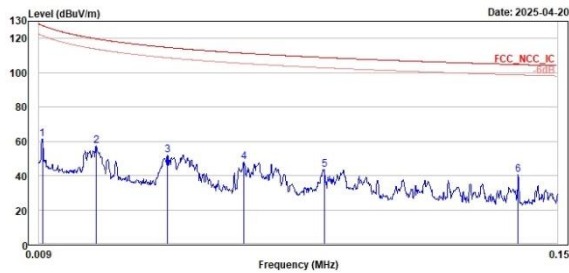
Spurious Emissions, Tx Mode, 9kHz ~ 30MHz

BLE_2M

Low Channel (Open) 9kHz~150kHz



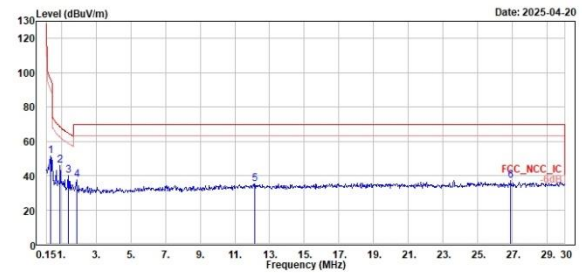
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	0.01	61.36	43.25	18.11	127.60	-66.24	100	180	Peak	Open		
2	0.02	57.33	37.59	19.74	119.75	-62.42	100	291	Peak	Open		
3	0.04	51.95	32.94	19.01	114.73	-62.78	100	8	Peak	Open		
4	0.06	48.11	29.90	18.21	111.36	-63.25	100	293	Peak	Open		
5	0.09	43.74	25.65	18.09	108.85	-65.11	100	293	Peak	Open		
6	0.14	40.39	22.12	18.27	104.72	-64.33	100	216	Peak	Open		



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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	0.39	51.62	32.98	18.64	95.81	-44.19	100	217	Peak	Open		
2	0.93	46.14	27.29	18.85	68.27	-22.13	100	206	Peak	Open		
3	1.40	39.80	20.99	18.81	64.66	-24.86	100	206	Peak	Open		
4	1.88	37.61	18.78	18.83	69.50	-31.89	100	206	Peak	Open		
5	12.15	35.17	13.45	21.72	69.50	-34.33	100	179	Peak	Open		
6	26.90	37.13	14.13	23.00	69.50	-32.37	100	294	Peak	Open		

Spurious Emissions, Tx Mode, 30MHz ~ 1GHz

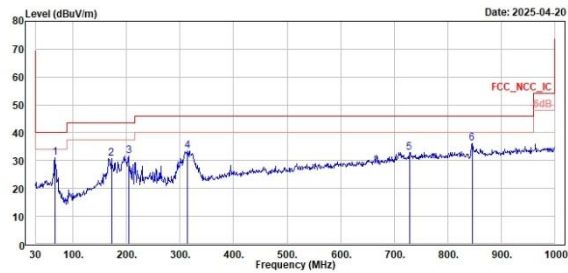
BLE_2M

Low Channel (Horizontal)

Low Channel (Vertical)



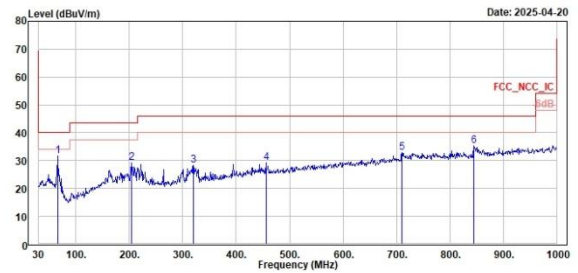
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Peak	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	65.89	30.95	38.52	-7.57	40.00	-9.05	100	112	Peak	Horizontal		
2	171.62	30.72	36.72	-6.00	43.50	-12.78	200	25	Peak	Horizontal		
3	203.63	31.77	39.94	-8.17	43.50	-11.73	200	267	Peak	Horizontal		
4	314.21	33.33	38.26	-4.93	46.00	-12.67	100	117	Peak	Horizontal		
5	728.40	32.94	38.16	2.78	46.00	-13.06	276	0	Peak	Horizontal		
6	845.77	36.31	32.22	4.09	46.00	-9.69	321	360	Peak	Horizontal		



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Peak	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	65.89	31.49	39.06	-7.57	40.00	-8.51	400	61	Peak	Vertical		
2	204.60	29.24	37.42	-8.18	43.50	-14.26	100	11	Peak	Vertical		
3	320.03	28.39	33.08	-4.69	46.00	-17.61	188	360	Peak	Vertical		
4	455.83	29.26	31.28	-2.02	46.00	-16.74	100	195	Peak	Vertical		
5	709.97	32.76	30.43	2.33	46.00	-13.24	300	168	Peak	Vertical		
6	844.80	35.16	31.09	4.07	46.00	-10.84	100	166	Peak	Vertical		

Spurious Emissions, Tx Mode, 1GHz ~ 26.5GHz

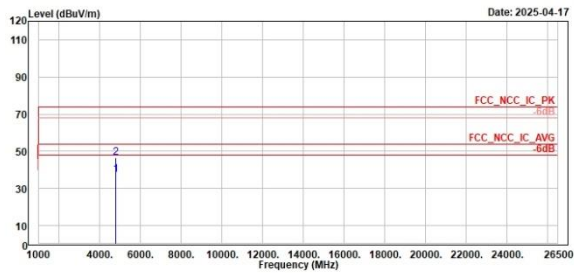
BLE_1M

Low Channel (Horizontal)

Low Channel (Vertical)



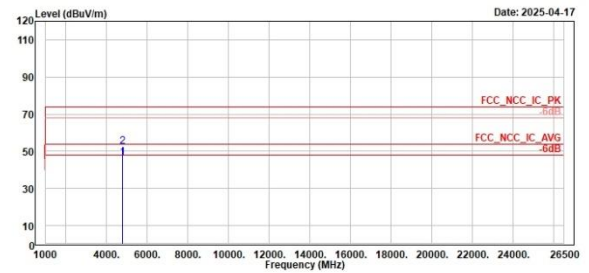
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Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	4804.00	37.51	46.59	-9.08	54.00	-16.49	344	197	Average	Horizontal	
2	4804.00	46.65	55.73	-9.08	74.00	-27.35	344	197	Peak	Horizontal	



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Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	4804.00	46.32	55.40	-9.08	54.00	-7.68	236	295	Average	Vertical	
2	4804.00	52.27	61.35	-9.08	74.00	-21.73	236	295	Peak	Vertical	