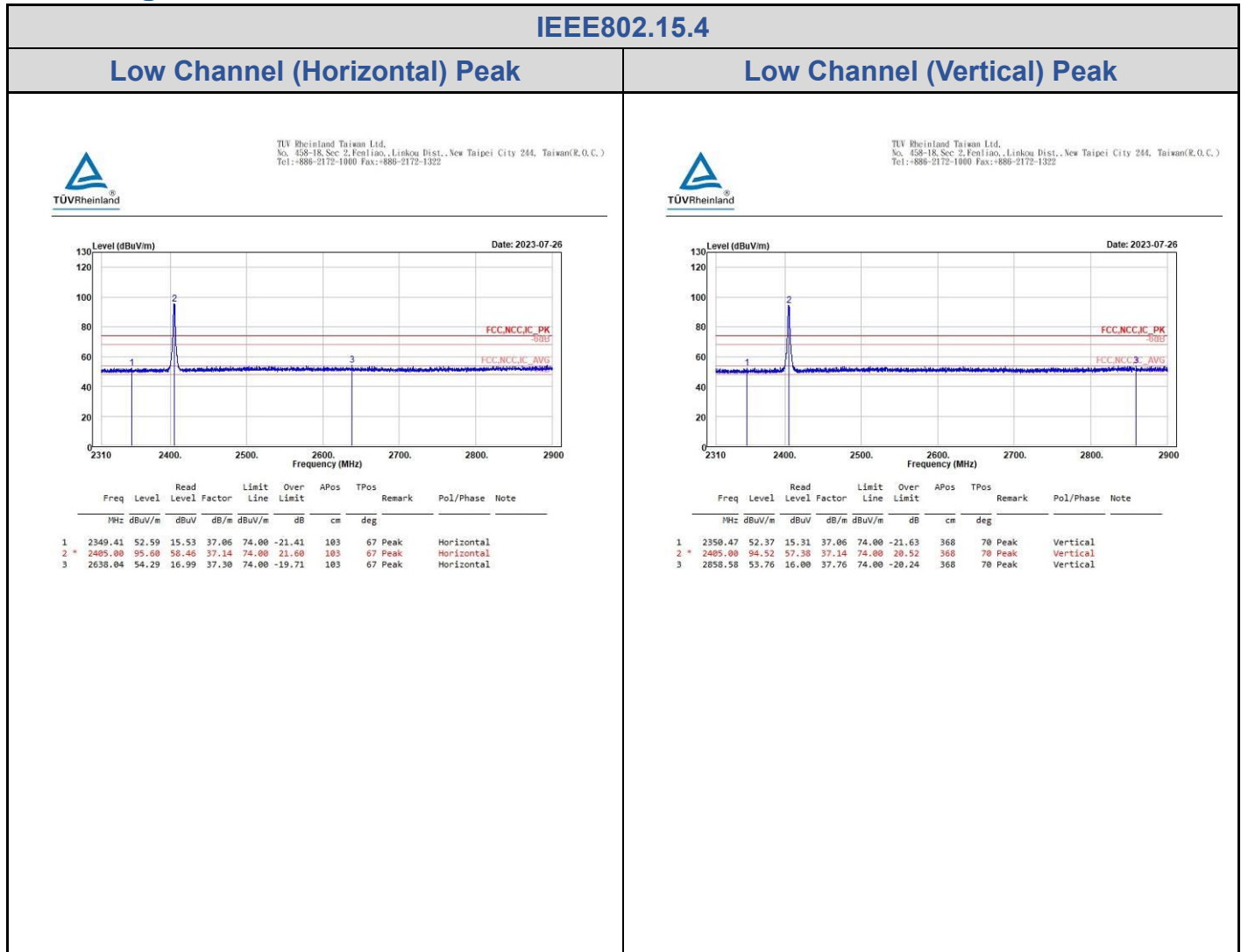


Appendix B: Test Results of Radiated Spurious Emissions & Mains

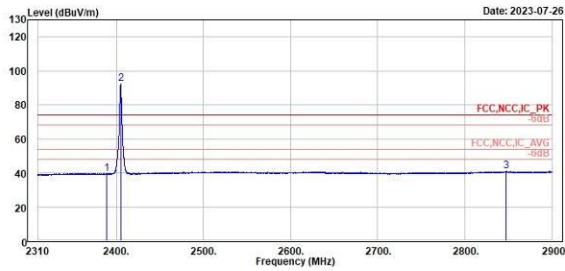
Conducted Emission Test

Band Edges, 2.31GHz ~ 2.9GHz



IEEE802.15.4
Low Channel (Horizontal) Average
Low Channel (Vertical) Average

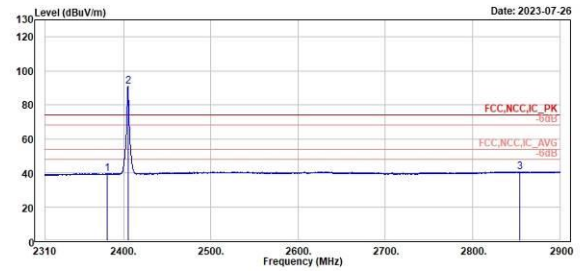

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Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2389.38	39.55	2.45	37.10	54.00	-14.45	103	67 Average	Horizontal	
2 *	2405.00	92.19	55.85	37.14	54.00	38.19	103	67 Average	Horizontal	
3	2847.25	40.95	3.25	37.70	54.00	-13.05	103	67 Average	Horizontal	



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Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2381.39	39.55	2.46	37.09	54.00	-14.45	368	70 Average	Vertical	
2 *	2405.00	91.01	53.87	37.14	54.00	37.01	368	70 Average	Vertical	
3	2853.51	40.77	3.03	37.74	54.00	-13.23	368	70 Average	Vertical	

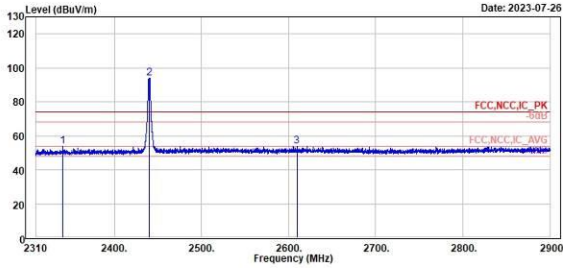
IEEE802.15.4

Middle Channel (Horizontal) Peak

Middle Channel (Vertical) Peak



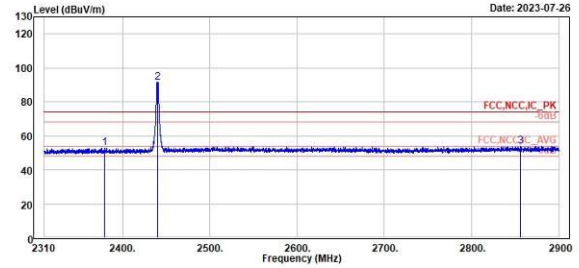
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Peak	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2340.92	53.70	16.70	37.00	74.00	-20.30	151	67	Peak	Horizontal	
2 *	2440.00	93.74	56.36	37.38	74.00	19.74	151	67	Peak	Horizontal	
3	2609.37	53.97	16.53	37.44	74.00	-20.03	151	67	Peak	Horizontal	



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Peak	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2379.62	53.01	15.92	37.09	74.00	-20.99	123	85	Peak	Vertical	
2 *	2440.00	91.51	54.13	37.38	74.00	17.51	123	85	Peak	Vertical	
3	2856.22	54.07	16.32	37.75	74.00	-19.93	123	85	Peak	Vertical	

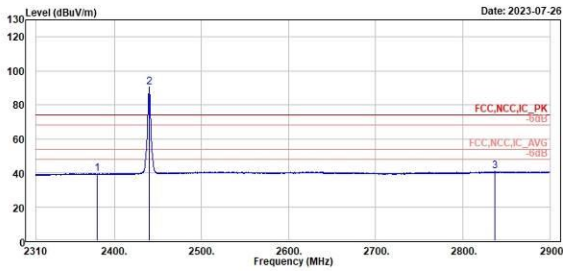
IEEE802.15.4

Middle Channel (Horizontal) Average

Middle Channel (Vertical) Average



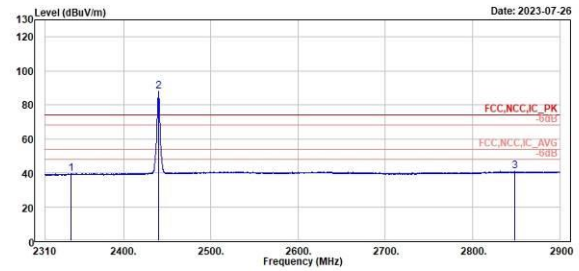
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Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2389.09	39.51	2.42	37.09	54.00	-14.49	151	67 Average	Horizontal
2 *	2440.00	98.29	52.91	37.38	54.00	36.29	151	67 Average	Horizontal
3	2836.99	40.96	3.35	37.61	54.00	-13.04	151	67 Average	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	2339.62	39.56	2.57	36.99	54.00	-14.44	123	85 Average	Vertical
2 *	2440.00	88.01	50.63	37.38	54.00	34.01	123	85 Average	Vertical
3	2847.84	40.90	3.20	37.70	54.00	-13.10	123	85 Average	Vertical

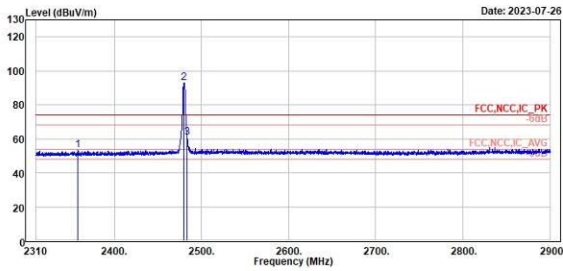
IEEE802.15.4

High Channel (Horizontal) Peak

High Channel (Vertical) Peak



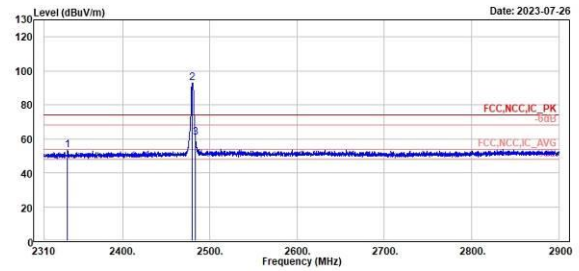
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Peak	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2358.58	53.23	16.16	37.07	74.00	-20.77	100	38	38	Peak	Horizontal	
2 *	2480.00	93.00	55.52	37.48	74.00	19.00	100	38	38	Peak	Horizontal	
3	2483.58	60.99	23.51	37.48	74.00	-13.01	100	38	38	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	2337.26	53.18	16.21	36.97	74.00	-20.82	392	71	71	Peak	Vertical	
2 *	2480.00	92.88	55.40	37.48	74.00	18.88	392	71	71	Peak	Vertical	
3	2483.46	60.81	23.33	37.48	74.00	-13.19	392	71	71	Peak	Vertical	

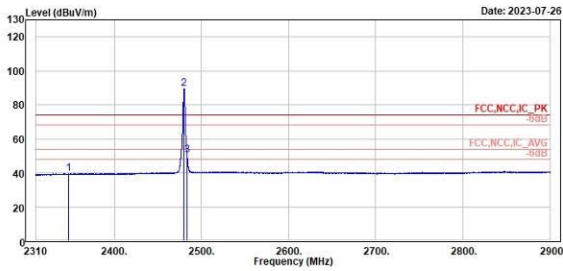
IEEE802.15.4

High Channel (Horizontal) Average

High Channel (Vertical) Average



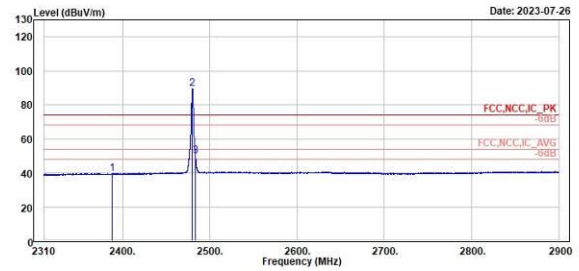
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Freq	Level	Read	Level	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2347.29	39.64	2.69	37.04	54.00	-14.36	100	38 Average	Horizontal	
2 *	2483.46	89.60	52.12	37.48	54.00	35.60	100	38 Average	Horizontal	
3 !	2483.46	50.32	12.84	37.48	54.00	-3.68	100	38 Average	Horizontal	

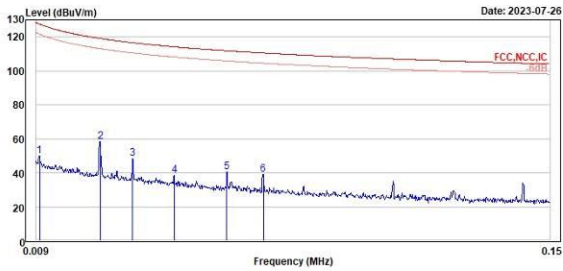


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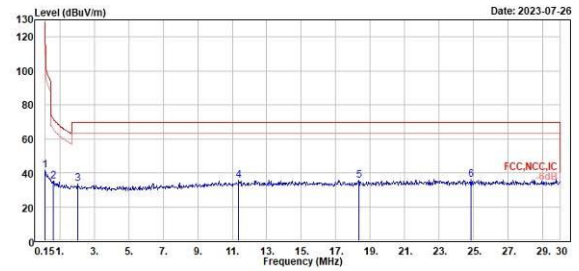


Freq	Level	Read	Level	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2388.35	39.55	2.45	37.10	54.00	-14.45	392	71 Average	Vertical	
2 *	2483.46	89.46	51.98	37.48	54.00	35.46	392	71 Average	Vertical	
3 !	2483.46	49.98	12.50	37.48	54.00	-4.02	392	71 Average	Vertical	

Spurious Emissions, Tx Mode, 9kHz ~ 30MHz
IEEE802.15.4
High Channel (Open) 9kHz~150kHz
High Channel (Open) 150kHz~30MHz

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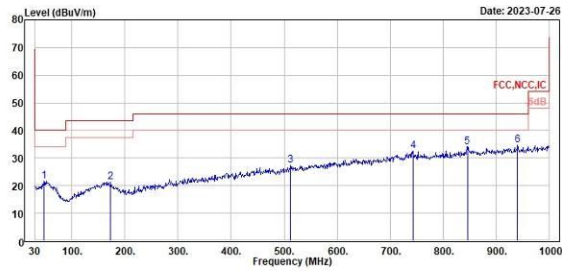
Peak	Freq (MHz)	Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit Line (dBuV/m)	Over Limit (dB)	APos (cm)	TPos (deg)	Remark	PoI/Phase	Note
1	0.01	49.70	31.98	17.72	127.68	-77.98	100	249	Peak	Open	
2	0.03	58.45	39.49	18.96	119.08	-60.63	100	249	Peak	Open	
3	0.04	48.24	29.06	19.18	116.58	-68.34	100	123	Peak	Open	
4	0.05	38.43	19.29	19.14	114.16	-75.73	100	108	Peak	Open	
5	0.06	40.64	21.79	18.85	111.84	-71.20	100	272	Peak	Open	
6	0.07	39.12	20.51	18.61	110.53	-71.41	100	175	Peak	Open	


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Peak	Freq (MHz)	Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit Line (dBuV/m)	Over Limit (dB)	APos (cm)	TPos (deg)	Remark	PoI/Phase	Note
1	0.15	41.53	23.40	18.13	104.88	-62.55	100	165	Peak	Open	
2	0.63	35.32	16.41	18.91	71.65	-36.33	100	341	Peak	Open	
3	2.03	33.76	14.39	19.37	69.50	-35.74	100	4	Peak	Open	
4	11.37	35.62	13.97	21.65	69.50	-33.88	100	278	Peak	Open	
5	18.33	35.63	13.50	22.13	69.50	-33.87	100	344	Peak	Open	
6	24.84	36.13	13.85	22.28	69.50	-33.37	100	12	Peak	Open	

Spurious Emissions, Tx Mode, 30MHz ~ 1GHz
IEEE802.15.4
High Channel (Horizontal)
High Channel (Vertical)

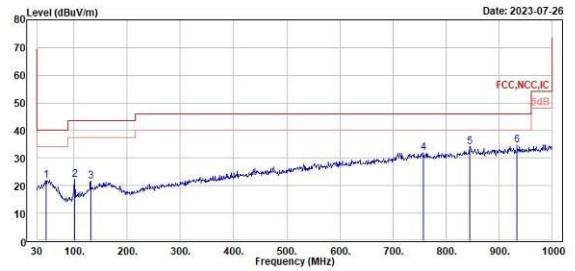

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Peak	Freq (MHz)	Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit Line (dBuV/m)	Over Limit (dB)	APos (cm)	TPos (deg)	Remark	PoI/Phase	Note
1	46.49	21.73	28.85	-7.12	48.00	-18.27	380		178 Peak	Horizontal	
2	172.59	21.41	28.75	-7.34	43.50	-22.09	300		128 Peak	Horizontal	
3	512.89	27.23	29.64	-2.41	46.00	-18.77	200		230 Peak	Horizontal	
4	742.95	32.41	30.02	2.39	46.00	-13.59	103		360 Peak	Horizontal	
5	845.77	34.09	30.39	3.70	46.00	-11.91	200		71 Peak	Horizontal	
6	940.83	34.83	29.96	4.87	46.00	-11.17	400		15 Peak	Horizontal	



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Peak	Freq (MHz)	Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit Line (dBuV/m)	Over Limit (dB)	APos (cm)	TPos (deg)	Remark	PoI/Phase	Note
1	46.49	22.81	29.13	-7.12	48.00	-17.99	180	98	Peak	Vertical	
2	100.81	22.30	34.24	-11.94	43.50	-21.20	280	193	Peak	Vertical	
3	130.88	21.61	30.65	-9.04	43.50	-21.89	300	260	Peak	Vertical	
4	750.47	31.92	29.09	2.83	46.00	-14.08	200	328	Peak	Vertical	
5	844.80	34.21	30.49	3.72	46.00	-11.79	109	360	Peak	Vertical	
6	934.04	34.75	29.71	5.04	46.00	-11.25	280	360	Peak	Vertical	

Spurious Emissions, Tx Mode, 1GHz ~ 26.5GHz

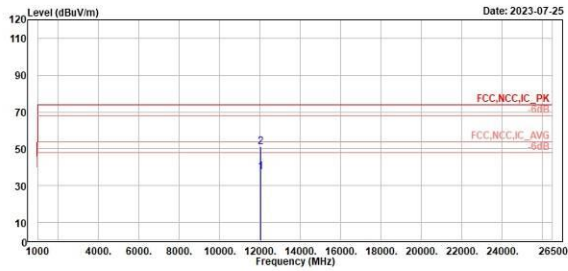
IEEE802.15.4

Low Channel (Horizontal)

Low Channel (Vertical)



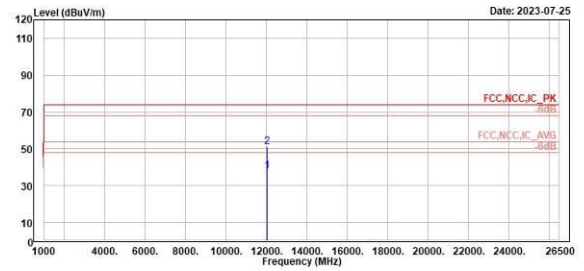
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Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	12025.00	37.50	39.16	-1.66	54.00	-16.50	100	109 Average	Horizontal
2	12025.00	51.12	52.78	-1.66	74.00	-22.88	100	109 Peak	Horizontal



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Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	12025.00	37.75	39.41	-1.66	54.00	-16.25	200	142 Average	Vertical
2	12025.00	51.24	52.90	-1.66	74.00	-22.76	200	142 Peak	Vertical

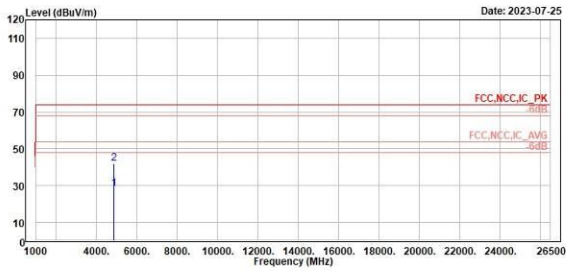
IEEE802.15.4

Middle Channel (Horizontal)

Middle Channel (Vertical)



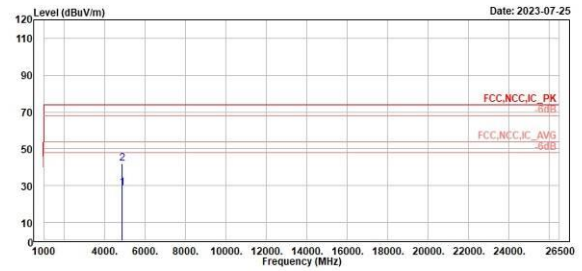
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Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4889.00	28.39	38.72	-10.33	54.00	-25.61	300	199 Average	Horizontal	
2	4889.00	42.02	52.35	-10.33	74.00	-31.98	300	199 Peak	Horizontal	



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Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4889.00	28.59	38.92	-10.33	54.00	-25.41	200	360 Average	Vertical	
2	4889.00	42.13	52.46	-10.33	74.00	-31.87	200	360 Peak	Vertical	

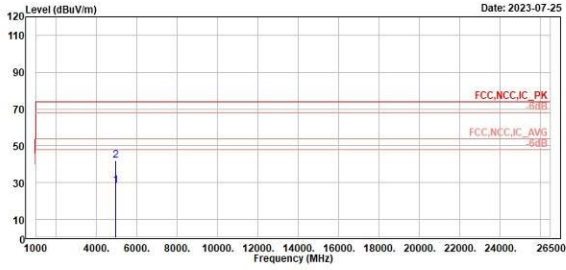
IEEE802.15.4

High Channel (Horizontal)

High Channel (Vertical)



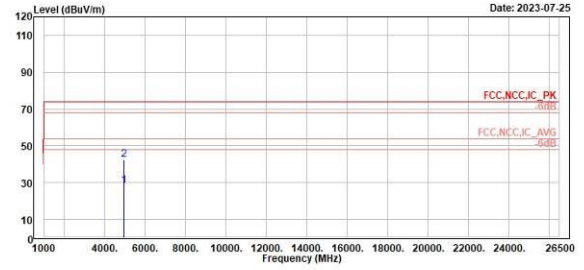
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Freq	Level	Read	Level	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4969.00	28.28	38.59	-18.22	54.00	-25.72	180	95 Average	Horizontal	
2	4969.00	42.05	52.27	-18.22	74.00	-31.95	180	95 Peak	Horizontal	



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Freq	Level	Read	Level	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4969.00	28.18	38.40	-18.22	54.00	-25.82	180	192 Average	Vertical	
2	4969.00	42.43	52.65	-18.22	74.00	-31.57	180	192 Peak	Vertical	

Mains Conducted Emission, 150kHz ~ 30MHz

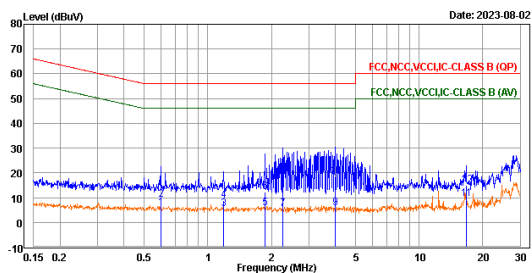
Worst Band

(Line)

(Neutral)



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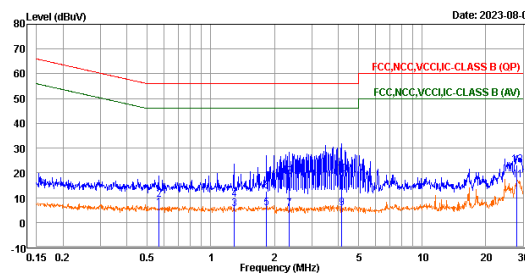


Trace: 1

Line	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark	Pol/Phase	Note
	MHz	dBuV	dBuV	dB	dBuV	dB			
1	0.60	5.60	-4.03	9.63	46.00	-40.40	Average	line1	
2	0.60	9.12	-0.51	9.63	56.00	-46.88	QP	line1	
3	1.19	5.47	-4.17	9.64	46.00	-40.53	Average	line1	
4	1.19	8.65	-0.99	9.64	56.00	-47.35	QP	line1	
5	1.86	5.87	-3.79	9.66	46.00	-40.13	Average	line1	
6	1.86	12.33	2.67	9.66	56.00	-43.67	QP	line1	
7	2.27	5.31	-4.35	9.66	46.00	-40.69	Average	line1	
8	2.27	17.91	8.25	9.66	56.00	-38.09	QP	line1	
9	4.00	5.61	-4.07	9.68	46.00	-40.39	Average	line1	
10	4.00	18.35	8.67	9.68	56.00	-37.65	QP	line1	
11	16.66	9.37	-0.40	9.77	50.00	-40.63	Average	line1	
12	16.66	14.84	5.07	9.77	60.00	-45.16	QP	line1	



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Trace: 1

Line	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark	Pol/Phase	Note
	MHz	dBuV	dBuV	dB	dBuV	dB			
1	0.57	5.72	-3.91	9.63	46.00	-40.28	Average	neutral	
2	0.57	9.28	-0.35	9.63	56.00	-46.72	QP	neutral	
3	1.29	5.57	-4.07	9.64	46.00	-40.43	Average	neutral	
4	1.29	9.14	-0.50	9.64	56.00	-46.86	QP	neutral	
5	1.83	5.88	-3.78	9.66	46.00	-40.12	Average	neutral	
6	1.83	12.43	2.77	9.66	56.00	-43.57	QP	neutral	
7	2.34	5.47	-4.19	9.66	46.00	-40.53	Average	neutral	
8	2.34	18.39	8.73	9.66	56.00	-37.61	QP	neutral	
9	4.15	5.82	-3.87	9.69	46.00	-40.18	Average	neutral	
10	4.15	19.33	9.64	9.69	56.00	-36.67	QP	neutral	
11	28.12	17.05	7.17	9.88	50.00	-32.95	Average	neutral	
12	28.12	23.18	13.30	9.88	60.00	-36.82	QP	neutral	