

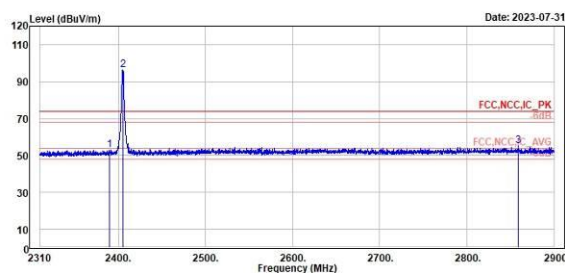
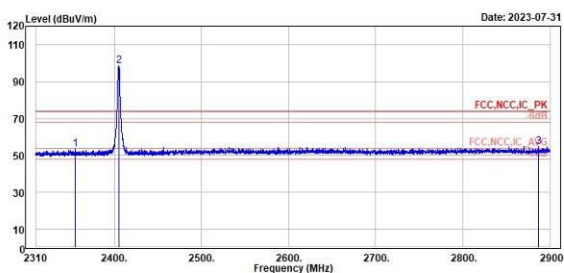
# Appendix A: Test Results of Radiated Spurious Emissions

## Band Edges, 2.31GHz ~ 2.9GHz

### IEEE802.15.4

#### Low Channel (Horizontal) Peak

#### Low Channel (Vertical) Peak

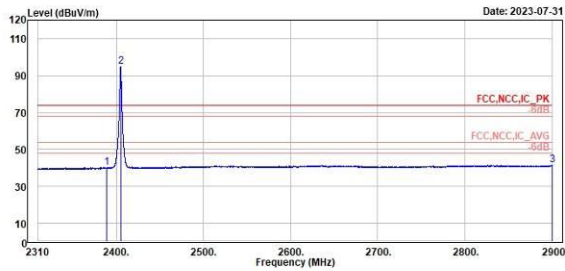


Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2355.31	53.33	15.93	37.40	74.00	-20.67	272	213 Peak	Horizontal	
2 *	2405.00	98.33	60.69	37.64	74.00	24.33	272	213 Peak	Horizontal	
3	2886.55	54.98	16.62	38.36	74.00	-19.02	272	213 Peak	Horizontal	

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	2389.53	53.08	15.50	37.58	74.00	-20.92	100	196 Peak	Vertical	
2 *	2405.00	96.44	58.80	37.64	74.00	22.44	100	196 Peak	Vertical	
3	2858.70	55.19	16.99	38.20	74.00	-18.81	100	196 Peak	Vertical	

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

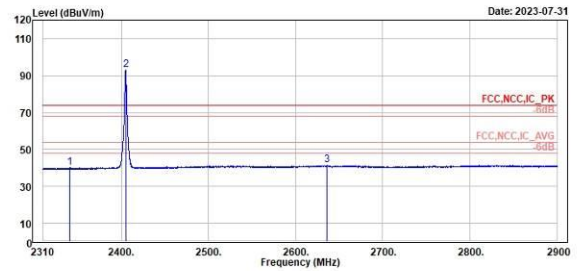

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Freq	Level	Read Level Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2389.18	40.21	2.63	37.58	54.00	-13.79	272	213 Average	Horizontal
2 *	2405.00	95.09	57.45	37.64	54.00	41.09	272	213 Average	Horizontal
3	2899.88	41.43	3.01	38.42	54.00	-12.57	272	213 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	2340.68	40.19	2.85	37.34	54.00	-13.81	100	196 Average	Vertical
2 *	2405.00	95.13	55.49	37.64	54.00	39.13	100	196 Average	Vertical
3	2635.68	41.48	3.47	38.01	54.00	-12.52	100	196 Average	Vertical

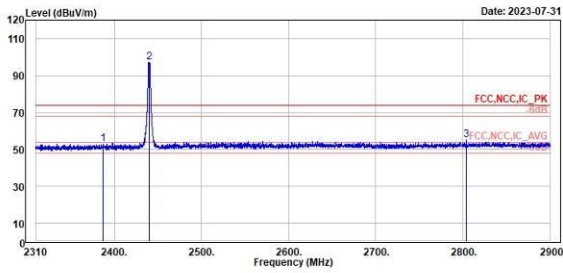
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Middle Channel (Horizontal) Peak

Middle Channel (Vertical) Peak



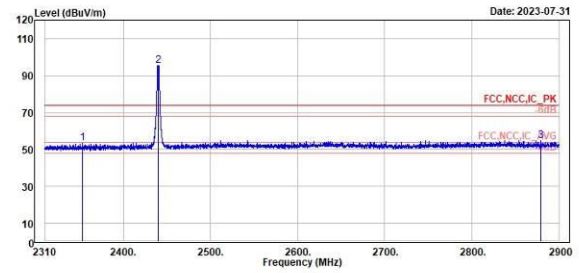
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Peak	Freq	Level	Read Level	Level Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2386.58	52.96	15.39	37.57	74.00	-21.04	100		216 Peak	Horizontal	
2 *	2440.00	97.07	59.39	37.68	74.00	23.07	100		216 Peak	Horizontal	
3	2803.48	55.08	16.68	38.20	74.00	-18.92	100		216 Peak	Horizontal	



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Peak	Freq	Level	Read Level	Level Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2352.95	53.35	15.96	37.39	74.00	-20.65	100		222 Peak	Vertical	
2 *	2440.00	95.53	57.85	37.68	74.00	21.53	100		222 Peak	Vertical	
3	2879.11	54.96	16.64	38.32	74.00	-19.04	100		222 Peak	Vertical	

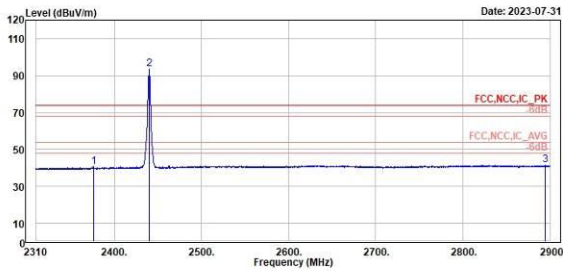
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Middle Channel (Horizontal) Average

Middle Channel (Vertical) Average



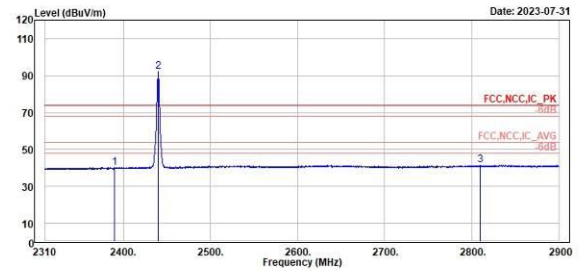
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Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2376.20	40.60	3.10	37.50	54.00	-13.40	100	216 Average	Horizontal	
2 *	2440.00	93.68	56.00	37.68	54.00	39.68	100	216 Average	Horizontal	
3	2894.69	41.42	3.02	38.40	54.00	-12.58	100	216 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	2389.41	40.33	2.75	37.58	54.00	-13.67	100	222 Average	Vertical	
2 *	2440.00	92.17	54.49	37.68	54.00	38.17	100	222 Average	Vertical	
3	2889.38	41.49	3.29	38.20	54.00	-12.51	100	222 Average	Vertical	

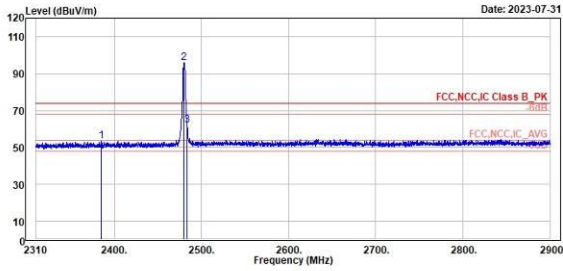
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High Channel (Horizontal) Peak

High Channel (Vertical) Peak



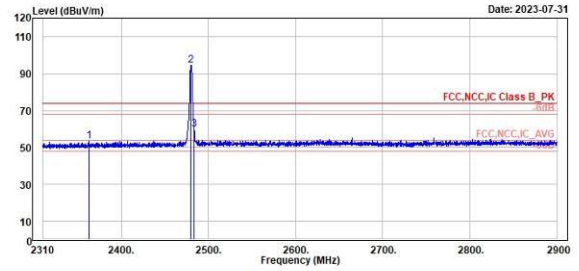
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Peak	Freq	Level	Read Level	Level Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2385.48	53.19	15.64	37.55	74.00	-20.81	179	195	Peak	Horizontal	
2 *	2480.00	95.99	58.20	37.79	74.00	21.99	179	195	Peak	Horizontal	
3	2483.46	62.08	24.28	37.80	74.00	-11.92	179	195	Peak	Horizontal	



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Peak	Freq	Level	Read Level	Level Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2362.63	53.23	15.79	37.44	74.00	-20.77	100	191	Peak	Vertical	
2 *	2480.00	94.53	56.74	37.79	74.00	20.53	100	191	Peak	Vertical	
3	2483.46	59.88	22.08	37.80	74.00	-14.12	100	191	Peak	Vertical	

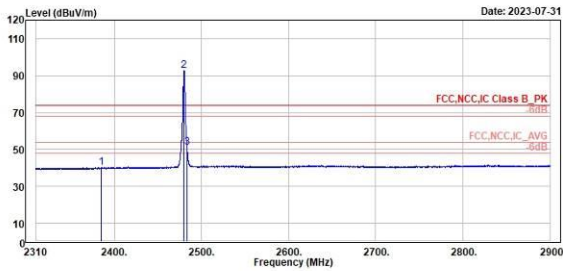
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High Channel (Horizontal) Average

High Channel (Vertical) Average



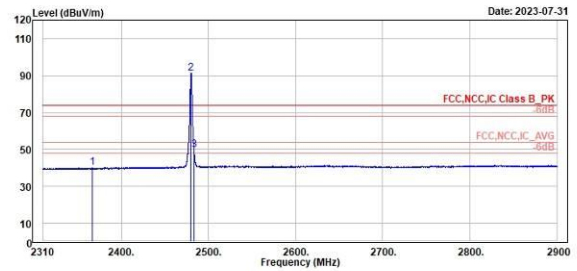
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Freq	Level	Read Level Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2385.48	40.13	2.58	37.55	54.00	-13.87	179	195 Average	Horizontal
2 *	2480.00	92.63	54.84	37.79	54.00	38.63	179	195 Average	Horizontal
3 †	2483.46	51.31	13.51	37.80	54.00	-2.69	179	195 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	2366.99	40.10	2.64	37.46	54.00	-13.90	100	191 Average	Vertical
2 *	2480.00	91.16	53.37	37.79	54.00	37.16	100	191 Average	Vertical
3 †	2483.46	49.68	11.88	37.80	54.00	-4.32	100	191 Average	Vertical

Spurious Emissions, Tx Mode, 9kHz ~ 30MHz

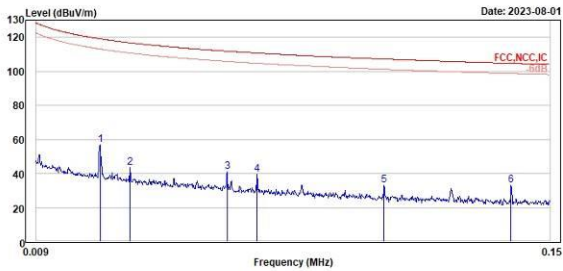
IEEE802.15.4

High Channel (Open) 9kHz~150kHz

High Channel (Open) 150kHz~30MHz



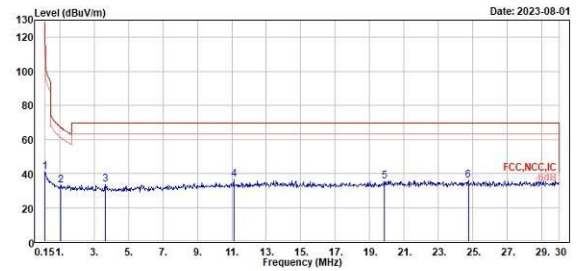
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Peak	Freq (MHz)	Level (dBuV/m)	Read Level (dBuV)	Level Factor (dB/m)	Limit Line (dBuV/m)	Over Limit (dB)	APos (cm)	TPos (deg)	Remark	PoI/Phase	Note
1	0.03	56.67	37.71	18.96	119.08	-62.41	100	284	Peak	Open	
2	0.03	43.44	24.25	19.19	116.76	-73.32	100	182	Peak	Open	
3	0.06	41.06	22.21	18.85	111.82	-70.76	100	20	Peak	Open	
4	0.07	39.78	21.13	18.65	110.74	-70.96	100	140	Peak	Open	
5	0.10	33.16	15.21	17.95	107.22	-74.06	100	99	Peak	Open	
6	0.14	32.98	14.81	18.09	104.72	-71.82	100	130	Peak	Open	



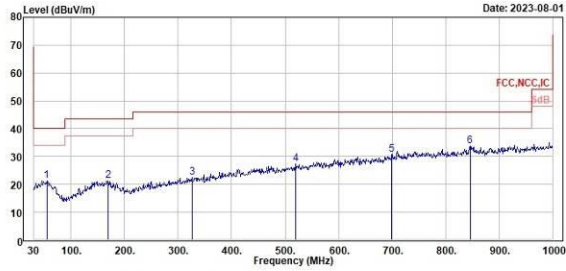
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Peak	Freq (MHz)	Level (dBuV/m)	Read Level (dBuV)	Level Factor (dB/m)	Limit Line (dBuV/m)	Over Limit (dB)	APos (cm)	TPos (deg)	Remark	PoI/Phase	Note
1	0.15	40.94	22.81	18.13	104.08	-63.14	100	218	Peak	Open	
2	1.05	33.31	14.23	19.08	67.22	-33.91	100	138	Peak	Open	
3	3.64	33.68	14.08	19.60	69.50	-35.82	100	85	Peak	Open	
4	11.10	36.56	14.92	21.64	69.50	-32.94	100	275	Peak	Open	
5	19.85	35.82	13.59	22.23	69.50	-33.68	100	99	Peak	Open	
6	24.72	36.04	13.76	22.28	69.50	-33.46	100	175	Peak	Open	

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

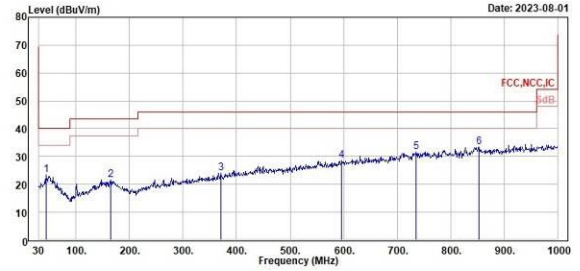

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Peak	Freq (MHz)	Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit Line (dBuV/m)	Over Limit (dB)	Apos (cm)	TPos (deg)	Remark	Pol/Phase	Note
1	54.25	21.25	28.24	-6.99	46.00	-18.75	100	257	Peak	Horizontal	
2	169.68	21.39	28.57	-7.18	43.50	-22.11	200	179	Peak	Horizontal	
3	325.85	22.59	28.44	-5.85	46.00	-23.41	217	100	Peak	Horizontal	
4	519.85	27.25	29.37	-2.12	46.00	-18.75	100	148	Peak	Horizontal	
5	699.30	30.82	29.19	1.63	46.00	-15.18	100	154	Peak	Horizontal	
6	845.77	33.76	30.06	3.70	46.00	-12.24	100	195	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	Pol/Phase	Note
1	43.58	23.29	30.78	-7.49	46.00	-16.71	100	131	Peak	Vertical	
2	163.86	21.54	28.49	-6.95	43.50	-22.96	300	112	Peak	Vertical	
3	370.47	23.95	28.99	-5.04	46.00	-22.05	100	95	Peak	Vertical	
4	596.48	28.59	28.91	-0.32	46.00	-17.41	230	43	Peak	Vertical	
5	735.19	31.61	29.69	1.92	46.00	-14.39	200	124	Peak	Vertical	
6	852.56	33.35	29.70	3.65	46.00	-12.65	300	140	Peak	Vertical	



Spurious Emissions, Tx Mode, 1GHz ~ 26.5GHz

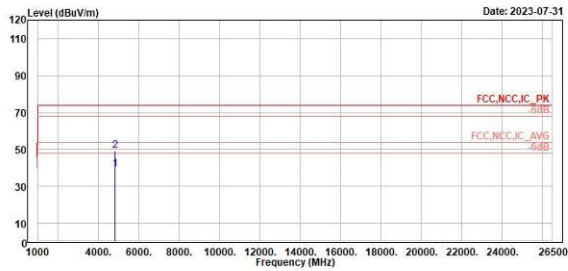
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Low Channel (Horizontal)

Low Channel (Vertical)



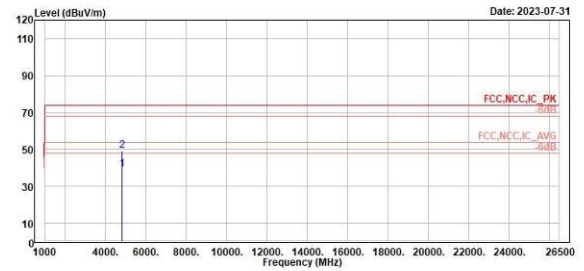
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Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
Level	Line	Limit	cm	deg			
dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg	
39.19	54.00	-14.81	490	243	Average	Horizontal	
49.48	74.00	-24.52	490	243	Peak	Horizontal	



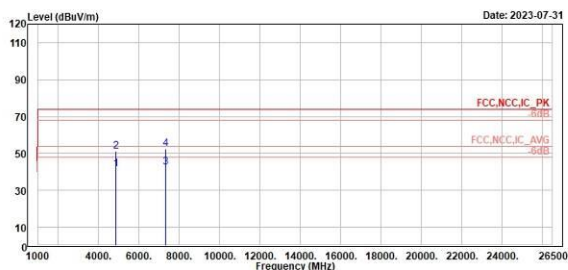
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Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
Level	Line	Limit	cm	deg			
dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg	
39.48	54.00	-14.52	490	242	Average	Vertical	
49.32	74.00	-24.68	490	242	Peak	Vertical	

**IEEE802.15.4**
**Middle Channel (Horizontal)**
**Middle Channel (Vertical)**

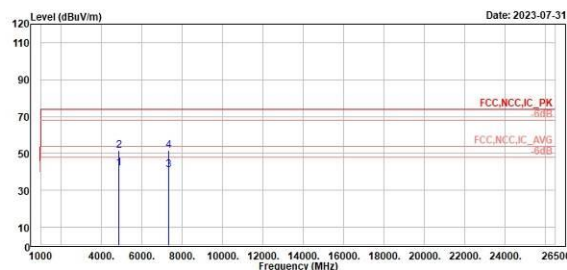

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Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4889.00	41.50	51.83	-10.33	54.00	-12.50	375	309 Average	Horizontal	
2	4889.00	51.20	61.53	-10.33	74.00	-22.80	375	309 Peak	Horizontal	
3	7320.00	42.64	51.14	-8.50	54.00	-11.36	342	360 Average	Horizontal	
4	7320.00	52.54	61.04	-8.50	74.00	-21.46	342	360 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	41.81	52.14	-10.33	54.00	-12.19	350	270 Average	Vertical	
2	4889.00	51.54	61.87	-10.33	74.00	-22.46	350	270 Peak	Vertical	
3	7320.00	41.25	49.75	-8.50	54.00	-12.75	400	45 Average	Vertical	
4	7320.00	51.65	60.15	-8.50	74.00	-22.35	400	45 Peak	Vertical	

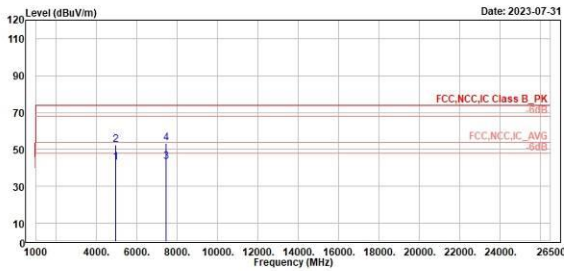
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High Channel (Horizontal)

High Channel (Vertical)



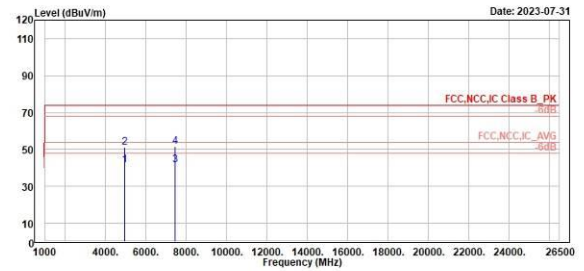
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1	2	3	4
Freq	Level	Read Level Factor	Limit Line
MHz	dBuV/m	dBuV	dB/m
4968.00	42.81	53.03	-10.22
4968.00	52.35	62.57	-10.22
7448.00	43.20	51.52	-8.32
7448.00	53.35	61.67	-8.32



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1	2	3	4
Freq	Level	Read Level Factor	Limit Line
MHz	dBuV/m	dBuV	dB/m
4968.00	41.39	51.61	-10.22
4968.00	51.13	61.35	-10.22
7448.00	41.71	50.03	-8.32
7448.00	51.78	60.10	-8.32