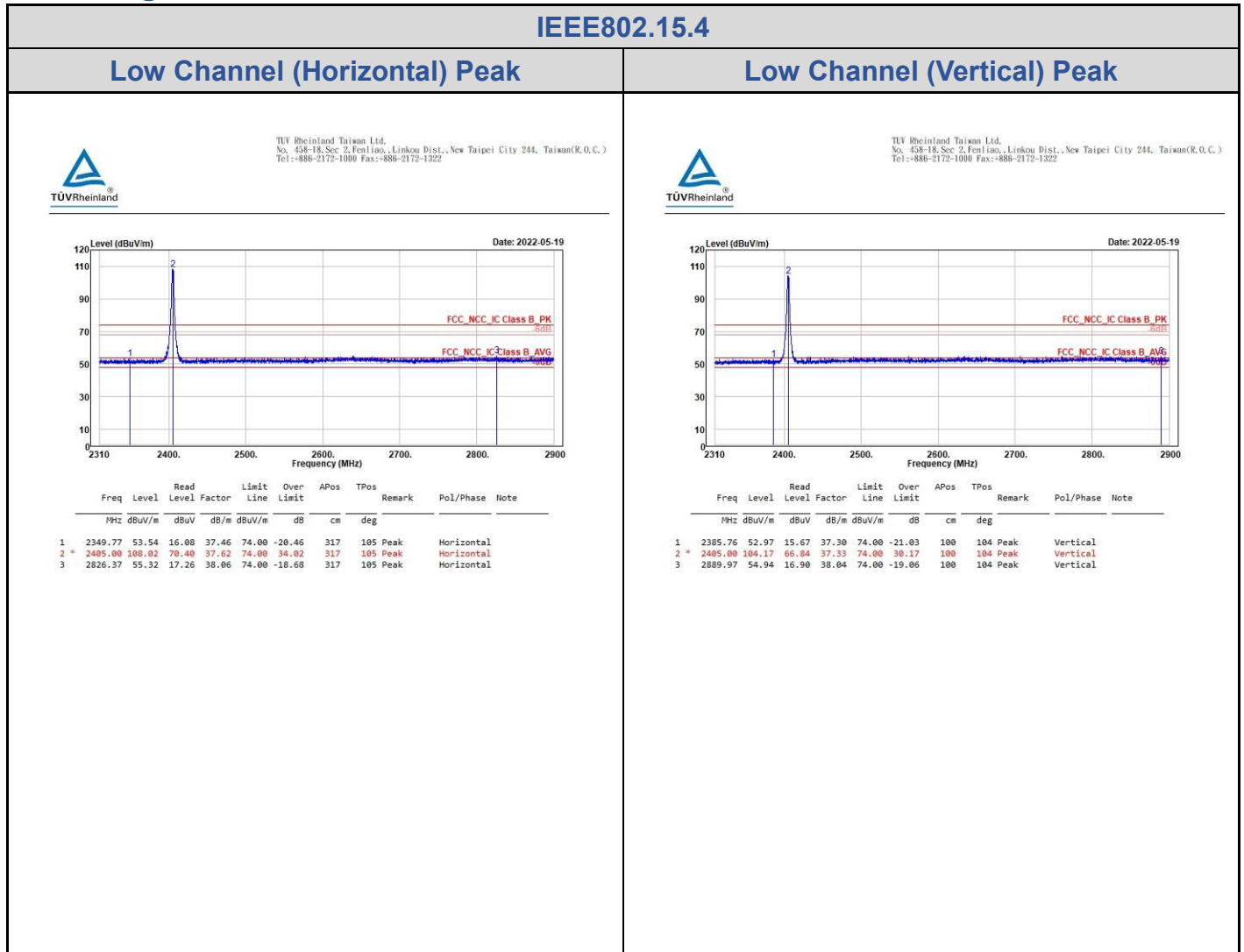


# Appendix B: Test Results of Radiated Spurious Emissions & Mains

## Conducted Emission Test

### Band Edges, 2.31GHz ~ 2.9GHz



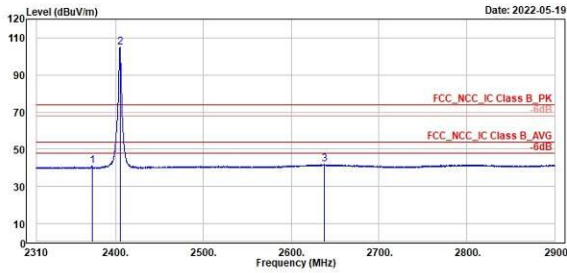
IEEE802.15.4

Low Channel (Horizontal) Average

Low Channel (Vertical) Average



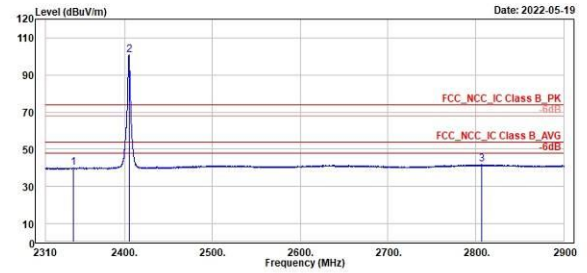
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Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2373.25	41.07	3.54	37.53	54.00	-12.93	317	105 Average	Horizontal	
2 *	2405.00	104.84	67.22	37.62	54.00	50.84	317	105 Average	Horizontal	
3	2638.84	41.86	3.67	38.19	54.00	-12.14	317	105 Average	Horizontal	

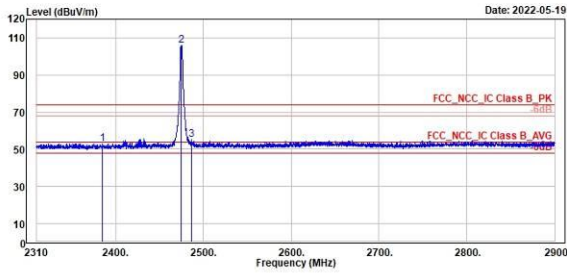


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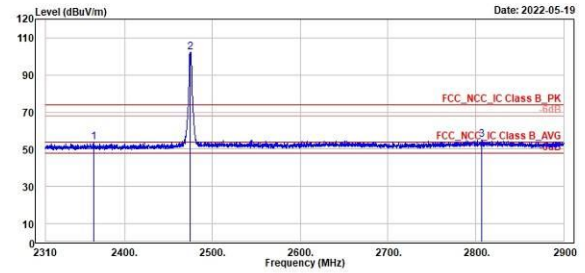


Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2341.51	40.27	3.07	37.20	54.00	-13.73	100	104 Average	Vertical	
2 *	2405.00	100.91	63.58	37.33	54.00	46.91	100	104 Average	Vertical	
3	2806.90	41.75	3.56	38.19	54.00	-12.25	100	104 Average	Vertical	

**IEEE802.15.4**
**High Channel (Horizontal) Peak**
**High Channel (Vertical) Peak**

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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	2385.05	53.06	15.49	37.57	74.00	-20.94	145	155	Peak	Horizontal	
2 *	2475.00	105.81	68.21	37.60	74.00	31.81	145	155	Peak	Horizontal	
3	2485.94	55.20	17.63	37.57	74.00	-18.80	145	155	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	2364.40	53.65	16.38	37.27	74.00	-20.35	100	104	Peak	Vertical	
2 *	2475.00	102.30	64.65	37.65	74.00	28.30	100	104	Peak	Vertical	
3	2806.66	55.20	17.01	38.19	74.00	-18.80	100	104	Peak	Vertical	

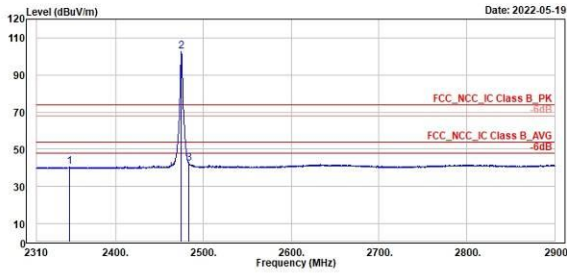
IEEE802.15.4

High Channel (Horizontal) Average

High Channel (Vertical) Average



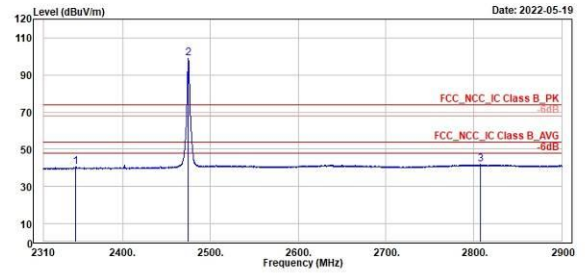
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Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2347.41	40.51	3.07	37.44	54.00	-13.49	145	155 Average	Horizontal	
2 *	2475.00	102.55	64.95	37.60	54.00	48.55	145	155 Average	Horizontal	
3	2483.46	42.44	4.86	37.58	54.00	-11.56	145	155 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	2346.70	40.40	3.17	37.23	54.00	-13.60	100	104 Average	Vertical	
2 *	2475.00	99.12	61.47	37.65	54.00	45.12	100	104 Average	Vertical	
3	2807.61	41.83	3.64	38.19	54.00	-12.17	100	104 Average	Vertical	

Spurious Emissions, Tx Mode, 9kHz ~ 30MHz

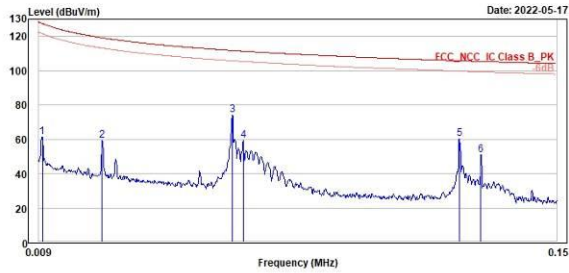
IEEE802.15.4

Low Channel (Open) 9kHz~150kHz

Low Channel (Open) 150kHz~30MHz



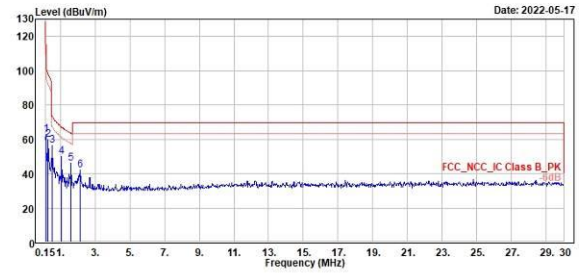
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Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	0.01	61.14	43.43	17.71	127.60	-66.46	100	183 QP	Open
2	0.03	59.19	40.01	19.18	119.18	-59.99	100	246 QP	Open
3	0.06	74.12	55.07	19.05	111.78	-37.66	100	154 QP	Open
4	0.06	59.48	40.49	18.99	111.38	-51.90	100	119 QP	Open
5	0.12	60.21	41.91	18.30	105.76	-45.55	100	168 QP	Open
6	0.13	51.07	32.75	18.32	105.36	-54.29	100	121 QP	Open



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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	0.10	63.02	44.52	18.50	102.50	-39.48	100	153 QP	Open
2	0.30	59.63	40.70	18.93	98.08	-38.45	100	124 QP	Open
3	0.54	56.48	37.52	18.96	72.99	-16.51	100	153 QP	Open
4	1.08	50.08	30.82	19.26	66.97	-16.09	100	150 QP	Open
5	1.61	45.96	26.63	19.33	63.45	-17.49	100	147 QP	Open
6	2.15	42.09	22.70	19.39	69.50	-27.41	100	153 QP	Open

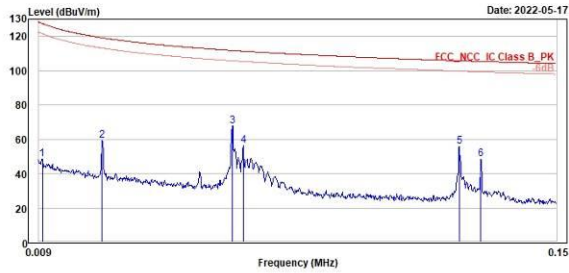
IEEE802.15.4

Low Channel (Close) 9kHz~150kHz

Low Channel (Close) 150kHz~30MHz



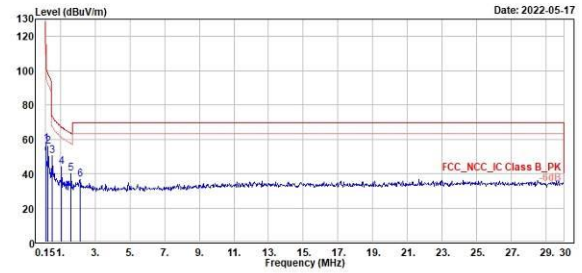
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Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	0.01	48.52	30.81	17.71	127.60	-79.08	100	20 QP	Close
2	0.03	59.15	39.97	19.18	119.18	-60.83	100	63 QP	Close
3	0.06	67.88	48.83	19.05	111.78	-43.90	100	199 QP	Close
4	0.06	56.29	37.30	18.99	111.38	-55.09	100	158 QP	Close
5	0.12	55.69	37.39	18.30	105.76	-50.07	100	122 QP	Close
6	0.13	48.40	30.00	18.32	105.36	-56.96	100	150 QP	Close

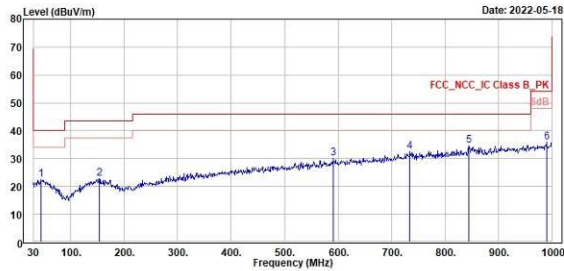


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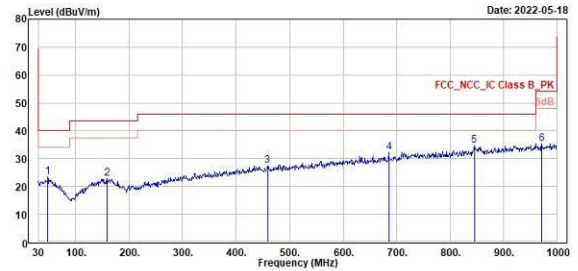


Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	0.10	57.45	38.95	18.50	102.50	-45.05	100	193 QP	Close
2	0.30	55.76	36.83	18.93	98.08	-42.32	100	148 QP	Close
3	0.54	50.50	31.54	18.96	72.99	-22.49	100	200 QP	Close
4	1.08	44.12	24.86	19.26	66.97	-22.85	100	193 QP	Close
5	1.61	40.00	20.67	19.33	63.45	-23.45	100	198 QP	Close
6	2.15	36.00	17.41	19.39	69.50	-32.70	100	122 QP	Close

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

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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	43.58	22.41	28.39	-5.98	48.00	-17.59	300	27 QP	Horizontal
2	153.19	22.71	28.62	-5.91	43.50	-20.79	100	277 QP	Horizontal
3	596.66	30.01	29.89	0.12	46.00	-15.99	300	316 QP	Horizontal
4	734.22	32.48	30.21	2.27	46.00	-13.52	200	28 QP	Horizontal
5	844.80	34.71	30.68	4.03	46.00	-11.29	100	322 QP	Horizontal
6	996.38	35.98	29.77	6.13	54.00	-16.10	300	56 QP	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	47.46	23.40	29.16	-5.76	48.00	-16.60	300	45 QP	Vertical
2	158.04	22.80	28.67	-5.87	43.50	-20.70	200	26 QP	Vertical
3	458.74	27.44	29.39	-1.95	46.00	-18.56	300	283 QP	Vertical
4	685.72	32.11	30.53	1.58	46.00	-13.89	300	358 QP	Vertical
5	845.77	34.75	30.72	4.03	46.00	-11.25	200	35 QP	Vertical
6	971.87	35.25	29.45	5.80	54.00	-16.75	200	173 QP	Vertical

Spurious Emissions, Tx Mode, 1GHz ~ 26.5GHz

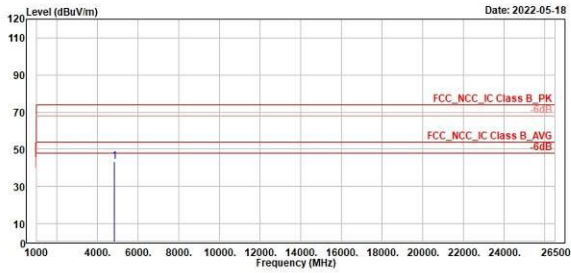
IEEE802.15.4

Low Channel (Horizontal)

Low Channel (Vertical)



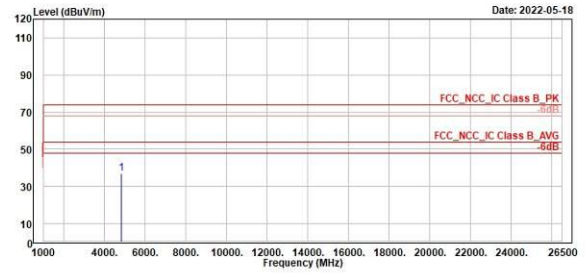
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Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4810.00	43.47	52.49	-9.02	74.00	-30.53	366	360 Peak	Horizontal	



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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	4810.00	36.90	46.30	-9.40	74.00	-37.10	186	360 Peak	Vertical	



IEEE802.15.4

Middle Channel (Horizontal)

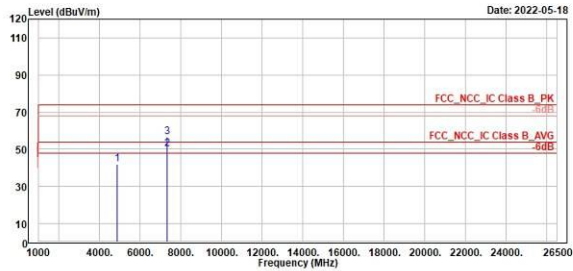
Middle Channel (Vertical)



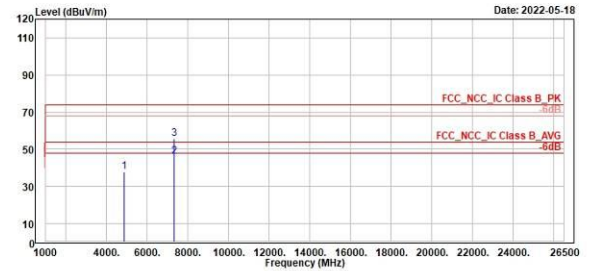
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Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4880.00	42.12	51.12	-9.00	74.00	-31.88	480	24 Peak	Horizontal	
2	7320.00	50.36	56.87	-6.51	54.00	-3.64	183	152 Average	Horizontal	
3	7320.00	56.60	63.11	-6.51	74.00	-17.40	183	152 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	4880.00	37.94	47.30	-9.36	74.00	-36.06	480	172 Peak	Vertical	
2	7320.00	46.22	52.85	-6.63	54.00	-7.78	180	242 Average	Vertical	
3	7320.00	55.52	62.15	-6.63	74.00	-18.48	180	242 Peak	Vertical	

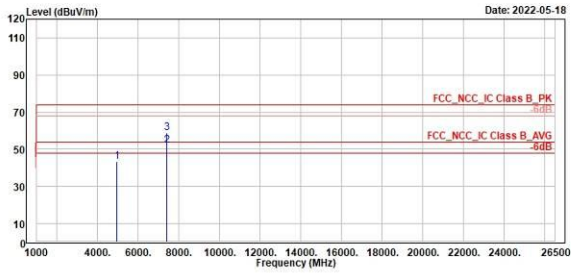
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High Channel (Horizontal)

High Channel (Vertical)



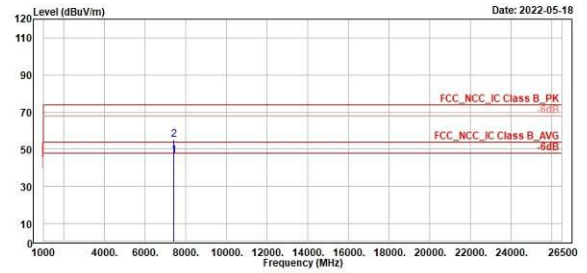
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Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4950.00	43.33	52.20	-8.87	74.00	-30.67	100	209 Peak	Horizontal	
2	7425.00	52.06	58.32	-6.26	54.00	-1.94	100	153 Average	Horizontal	
3	7425.00	58.91	65.17	-6.26	74.00	-15.09	100	153 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	7425.00	46.63	53.19	-6.56	54.00	-7.37	100	243 Average	Vertical	
2	7425.00	55.23	61.79	-6.56	74.00	-18.77	100	243 Peak	Vertical	

Mains Conducted Emission, Tx Mode, 150kHz ~ 30MHz

Worst Band

(Line)

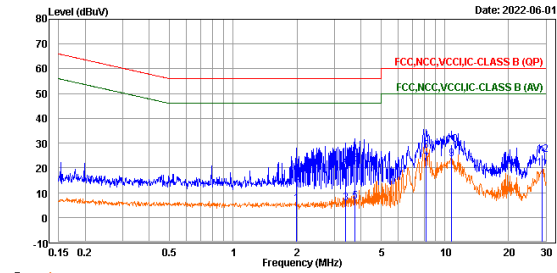
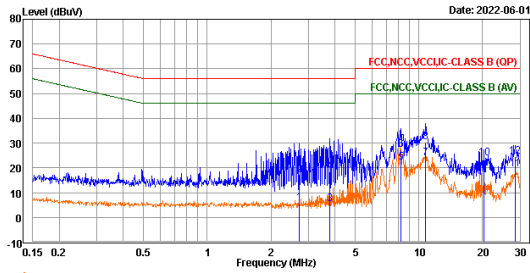
(Neutral)



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Trace: 1

Line	Freq	Level	Read Level	Factor	Limit	Over	Remark	Pol/Phase	Note
	MHz	dBuV	dBuV	dB	dBuV	dB			
1	2.71	5.69	-3.96	9.65	46.00	-40.31	Average	line1	
2	2.71	17.48	7.83	9.65	56.00	-38.52	QP	line1	
3	3.79	5.46	-4.21	9.67	46.00	-40.54	Average	line1	
4	3.79	18.54	8.87	9.67	56.00	-37.46	QP	line1	
5	8.21	22.12	12.41	9.71	50.00	-27.88	Average	line1	
6	8.21	27.14	17.43	9.71	60.00	-32.86	QP	line1	
7	10.74	24.02	14.30	9.72	50.00	-25.98	Average	line1	
8	10.74	30.26	20.54	9.72	60.00	-29.74	QP	line1	
9	20.34	17.36	7.64	9.72	50.00	-32.64	Average	line1	
10	20.34	23.96	14.24	9.72	60.00	-36.04	QP	line1	
11	28.40	19.30	9.66	9.64	50.00	-30.70	Average	line1	
12	28.40	24.49	14.85	9.64	60.00	-35.51	QP	line1	

Trace: 1

Line	Freq	Level	Read Level	Factor	Limit	Over	Remark	Pol/Phase	Note
	MHz	dBuV	dBuV	dB	dBuV	dB			
1	1.98	5.56	-4.07	9.63	46.00	-40.44	Average	neutral	
2	1.98	13.87	4.24	9.63	56.00	-42.13	QP	neutral	
3	3.40	5.81	-3.85	9.66	46.00	-40.19	Average	neutral	
4	3.40	20.56	10.90	9.66	56.00	-35.44	QP	neutral	
5	3.77	6.59	-3.07	9.66	46.00	-39.41	Average	neutral	
6	3.77	21.32	11.66	9.66	56.00	-34.68	QP	neutral	
7	8.17	21.99	12.21	9.72	50.00	-28.07	Average	neutral	
8	8.17	26.98	17.26	9.72	60.00	-33.02	QP	neutral	
9	10.74	23.44	13.70	9.74	50.00	-26.56	Average	neutral	
10	10.74	29.39	19.65	9.74	60.00	-30.61	QP	neutral	
11	28.68	19.87	10.03	9.84	50.00	-30.13	Average	neutral	
12	28.68	25.42	15.58	9.84	60.00	-34.58	QP	neutral	