

Test Report No.50348468 001

Appendix D: Radiated and Mains Spurious Emission Data

(File: 50348468 001 Appendix D)

Contents

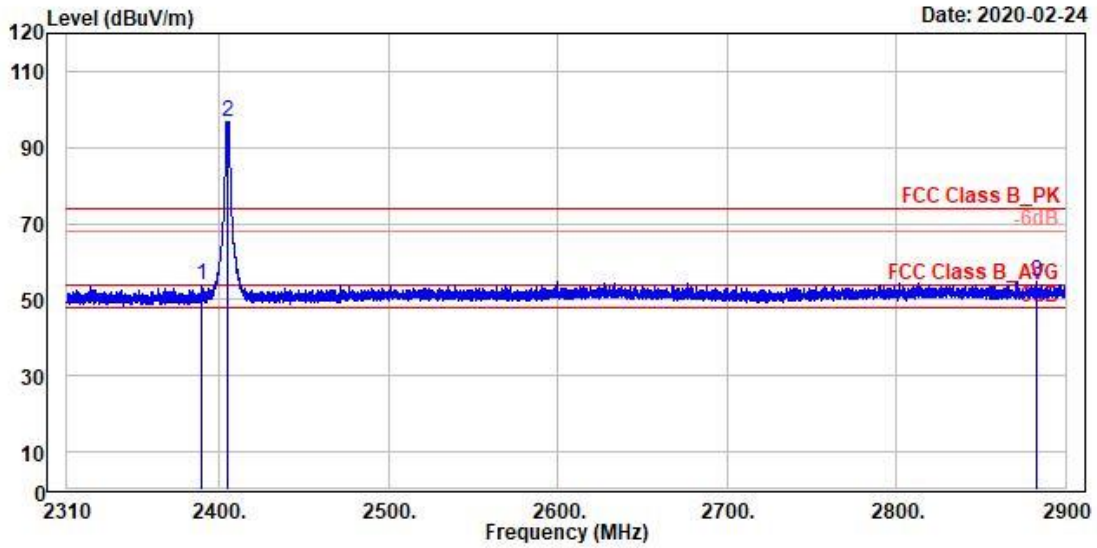
Spurious Emissions, Band Edges	2
Spurious Emissions, TX Mode, 9kHz-30MHz.....	14
Spurious Emissions, TX Mode, 30MHz-1GHz.....	16
Spurious Emissions, TX Mode, 1GHz-26.5GHz.....	18
Spurious Emissions, AC Mains	24

Spurious Emissions, Band Edges

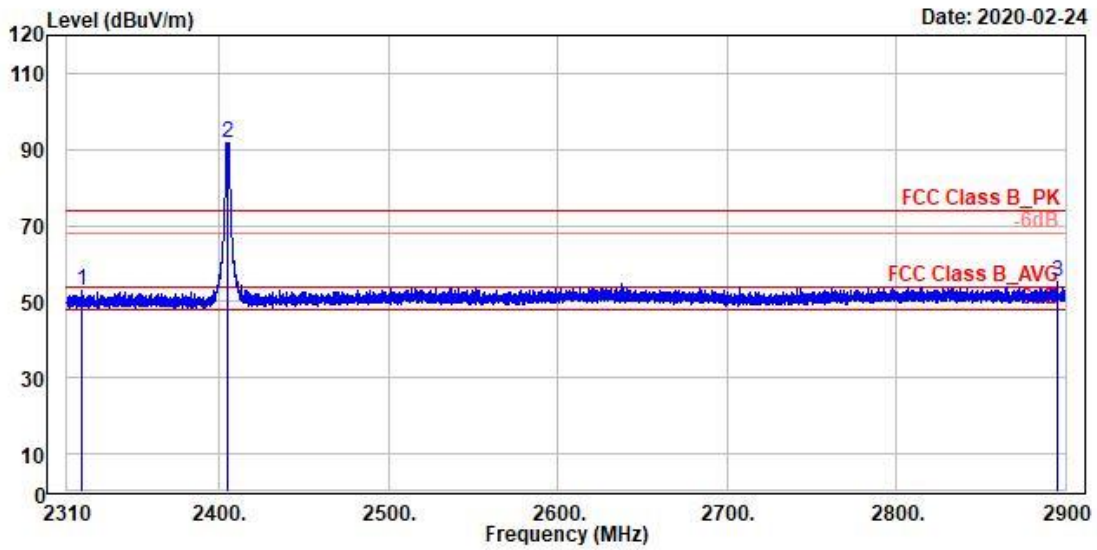
2405MHz



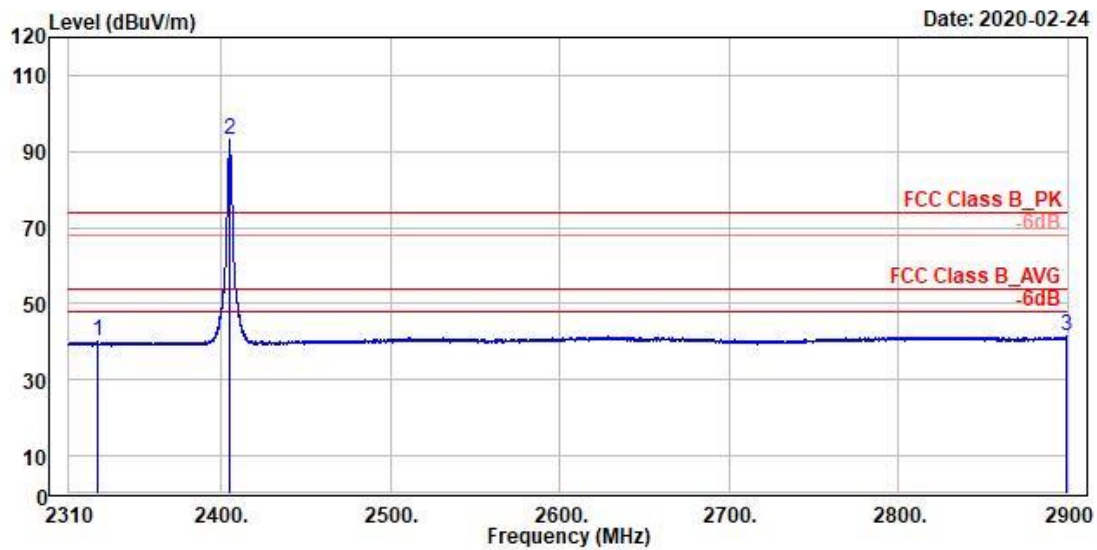
TUV Rheinland Taiwan Ltd.
 No. 458-18, Sec 2, Fenliao, Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
 Tel:+886-2172-1000 Fax:+886-2172-1322



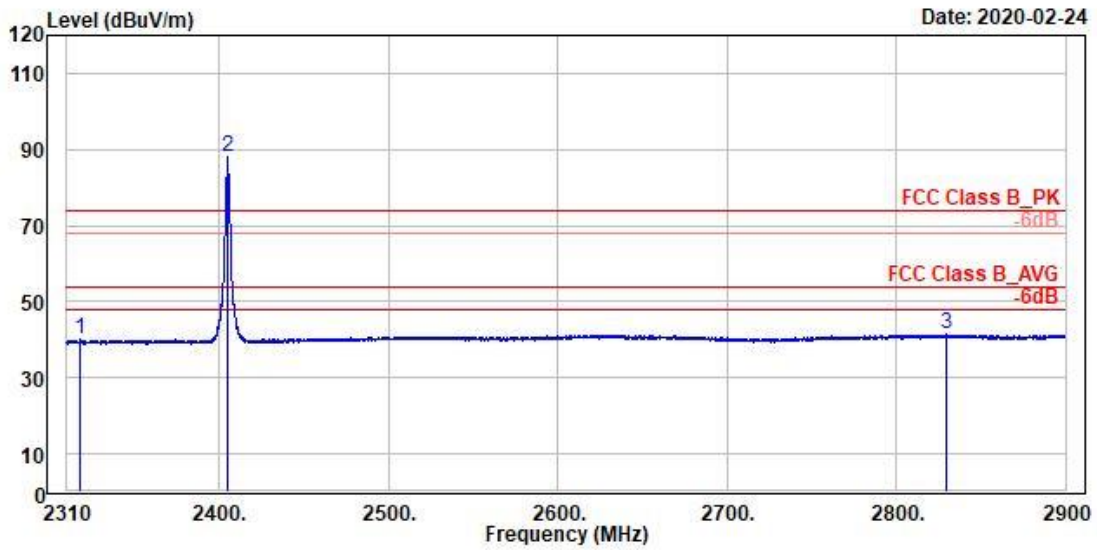
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2389.77	53.80	16.47	37.33	74.00	-20.20	113	269	Peak	Horizontal
2 *	2405.00	96.74	59.36	37.38	74.00	22.74	113	269	Peak	Horizontal
3	2883.19	54.95	16.72	38.23	74.00	-19.05	113	269	Peak	Horizontal



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2318.38	52.82	15.71	37.11	74.00	-21.18	102	228	Peak	Vertical
2 *	2405.00	91.76	54.38	37.38	74.00	17.76	102	228	Peak	Vertical
3	2895.58	55.30	17.00	38.30	74.00	-18.70	102	228	Peak	Vertical



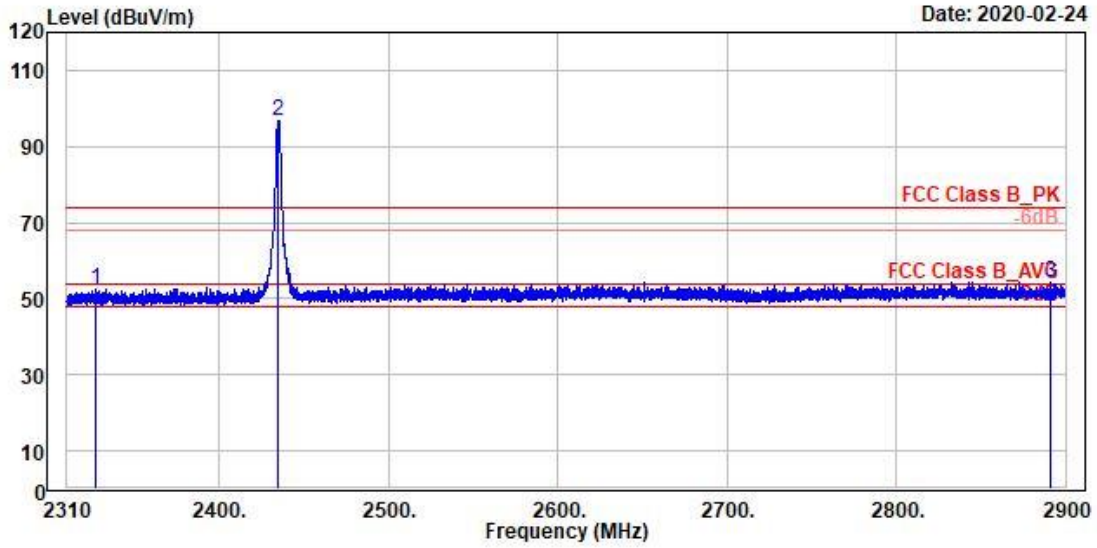
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2327.29	40.09	2.96	37.13	54.00	-13.91	113	269	Average	Horizontal
2 *	2405.00	93.15	55.77	37.38	54.00	39.15	113	269	Average	Horizontal
3	2899.88	41.31	2.99	38.32	54.00	-12.69	113	269	Average	Horizontal



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2317.85	39.98	2.87	37.11	54.00	-14.02	102	228	Average	Vertical
2 *	2405.00	87.93	50.55	37.38	54.00	33.93	102	228	Average	Vertical
3	2829.61	41.33	3.33	38.00	54.00	-12.67	102	228	Average	Vertical

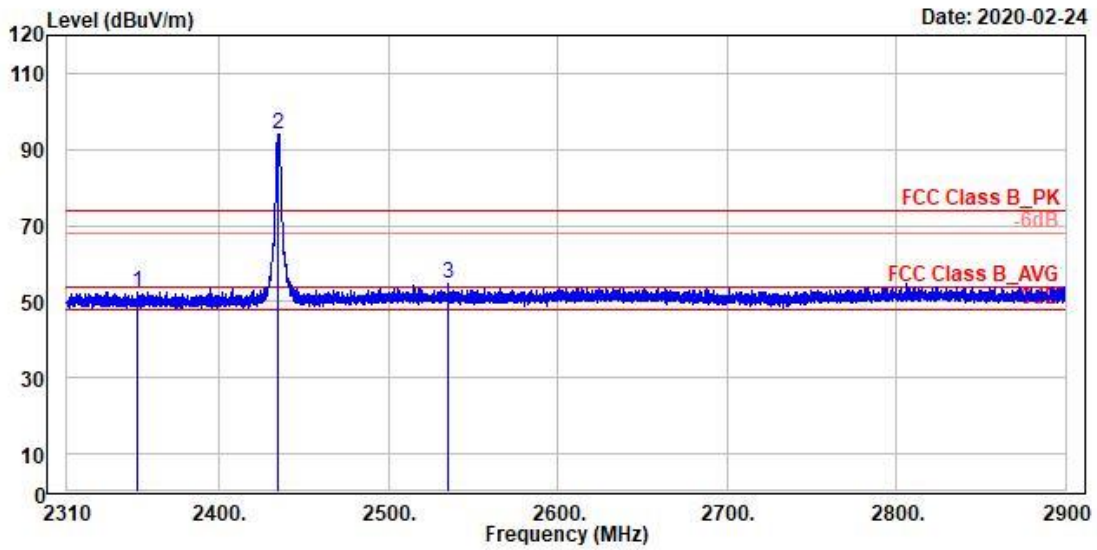


TUV Rheinland Taiwan Ltd.
 No. 458-18, Sec 2, Fenliao, Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
 Tel:+886-2172-1000 Fax:+886-2172-1322

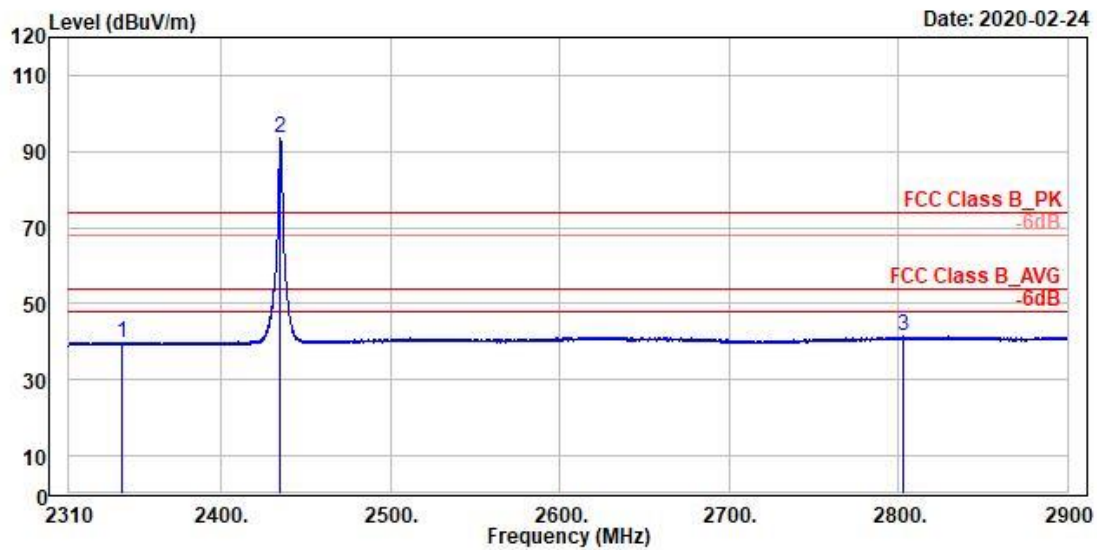


Date: 2020-02-24

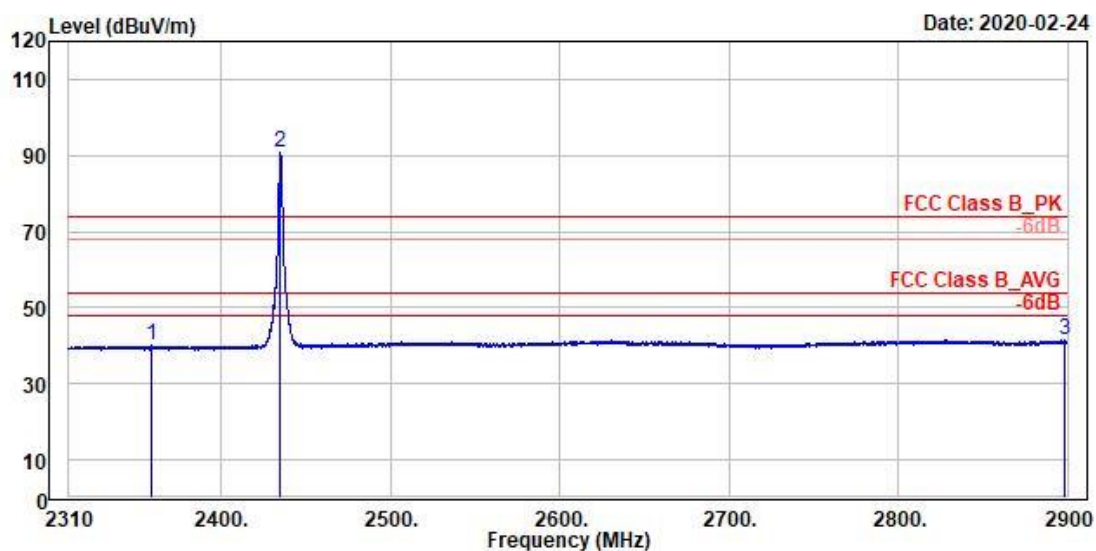
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2327.35	52.61	15.48	37.13	74.00	-21.39	141	183	Peak	Horizontal
2 *	2435.00	96.88	59.41	37.47	74.00	22.88	141	183	Peak	Horizontal
3	2891.09	54.52	16.25	38.27	74.00	-19.48	141	183	Peak	Horizontal



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2352.07	52.55	15.34	37.21	74.00	-21.45	146	101	Peak	Vertical
2 *	2435.00	94.01	56.54	37.47	74.00	20.01	146	101	Peak	Vertical
3	2535.20	54.85	17.09	37.76	74.00	-19.15	146	101	Peak	Vertical



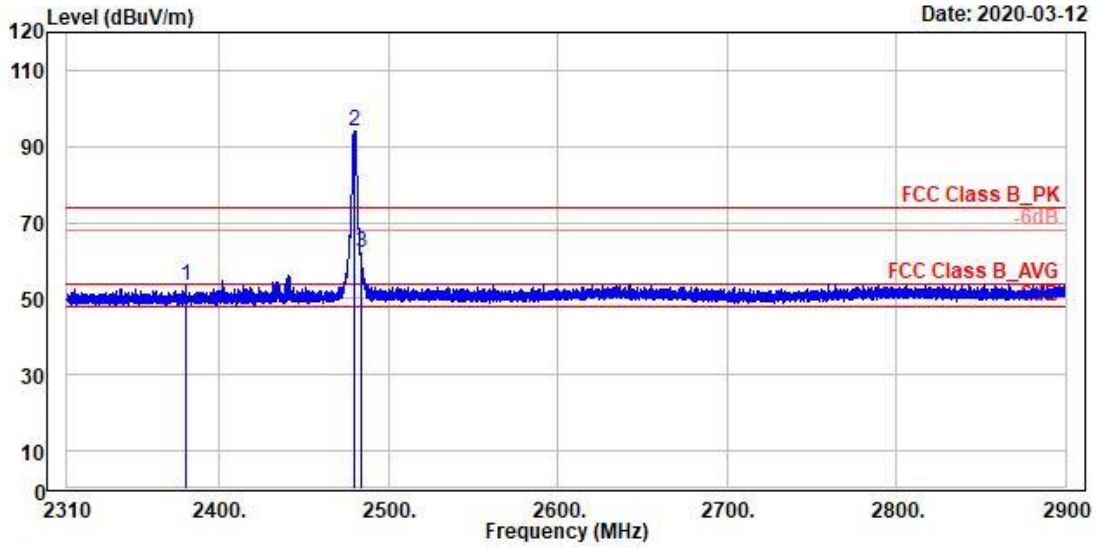
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2340.86	39.85	2.67	37.18	54.00	-14.15	141	183	Average	Horizontal
2 *	2435.00	93.47	56.00	37.47	54.00	39.47	141	183	Average	Horizontal
3	2802.77	41.35	3.43	37.92	54.00	-12.65	141	183	Average	Horizontal



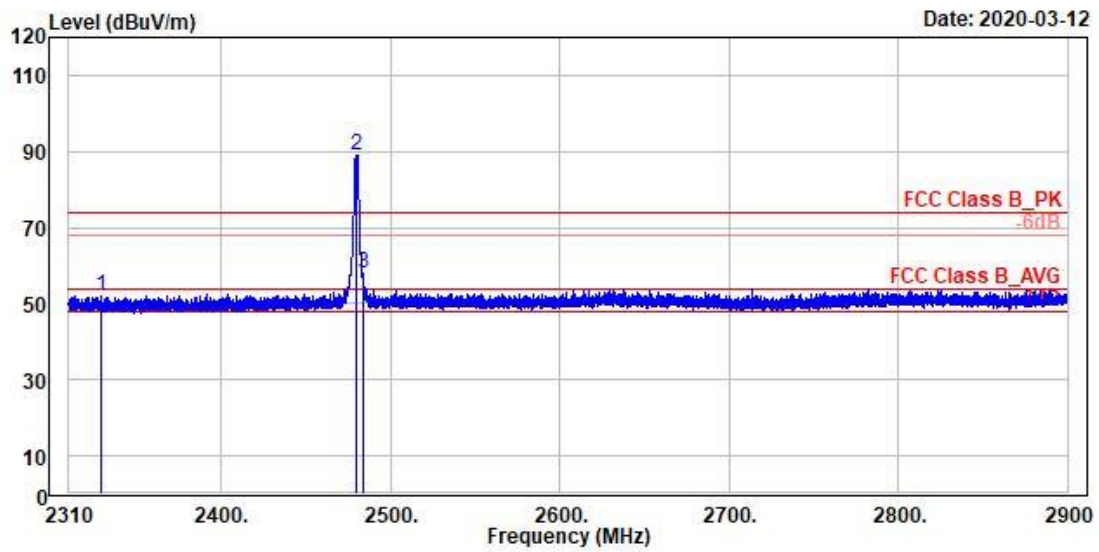
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2358.73	39.98	2.74	37.24	54.00	-14.02	146	101	Average	Vertical
2 *	2435.00	90.63	53.16	37.47	54.00	36.63	146	101	Average	Vertical
3	2898.53	41.38	3.07	38.31	54.00	-12.62	146	101	Average	Vertical



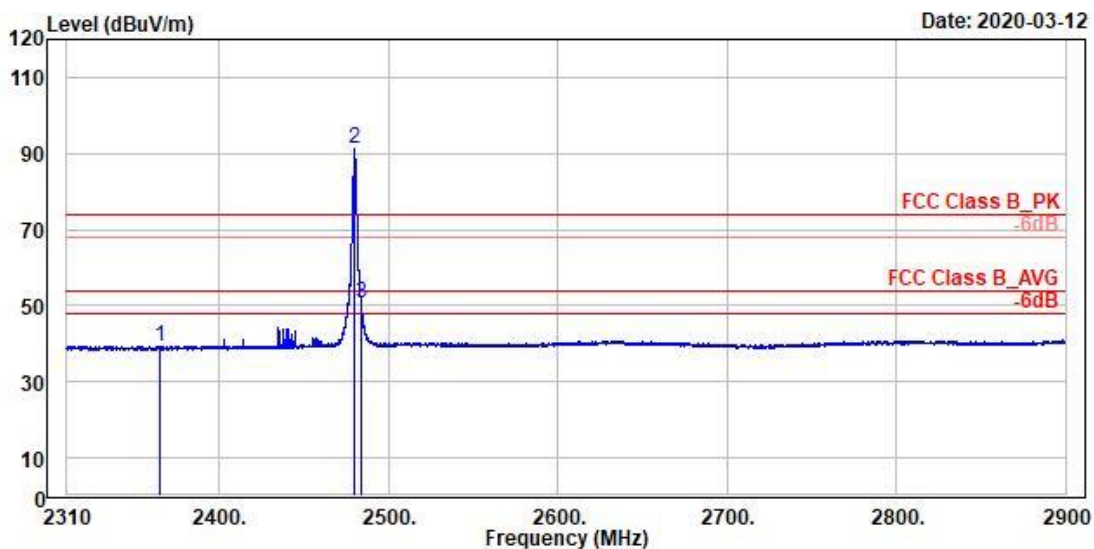
TUV Rheinland Taiwan Ltd.
 No. 458-18, Sec 2, Fenliao, Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
 Tel:+886-2172-1000 Fax:+886-2172-1322



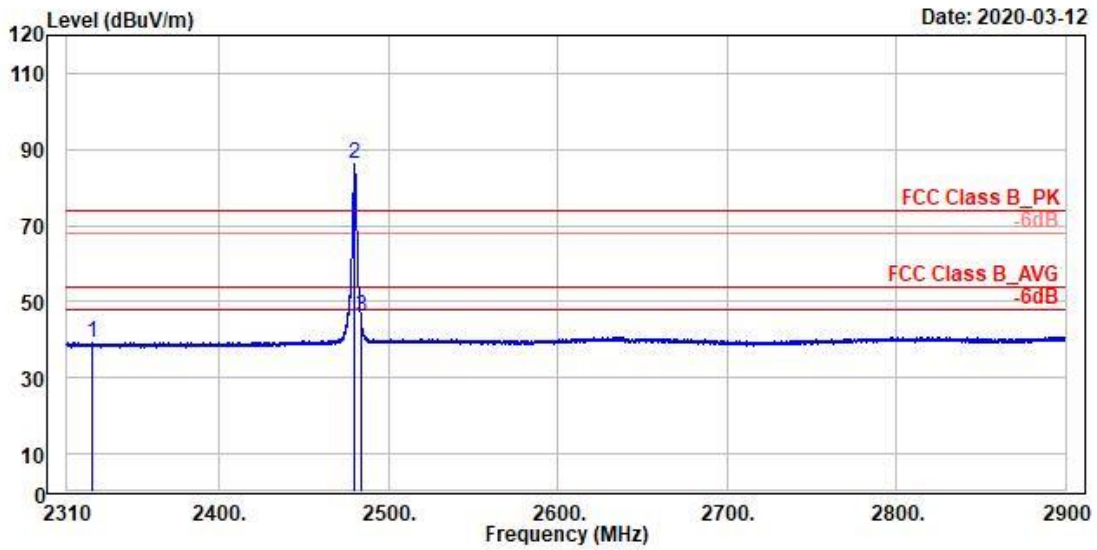
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2380.60	53.24	15.94	37.30	74.00	-20.76	214	142	Peak	Horizontal
2 *	2480.00	94.20	56.64	37.56	74.00	20.20	214	142	Peak	Horizontal
3	2483.58	62.26	24.70	37.56	74.00	-11.74	214	142	Peak	Horizontal



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2328.76	52.21	15.07	37.14	74.00	-21.79	101	225	Peak	Vertical
2 *	2480.00	89.12	51.56	37.56	74.00	15.12	101	225	Peak	Vertical
3	2483.58	58.13	20.57	37.56	74.00	-15.87	101	225	Peak	Vertical



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2364.99	39.20	1.95	37.25	54.00	-14.80	214	142	Average	Horizontal
2 *	2480.00	91.24	53.68	37.56	54.00	37.24	214	142	Average	Horizontal
3 !	2483.54	50.76	13.20	37.56	54.00	-3.24	214	142	Average	Horizontal



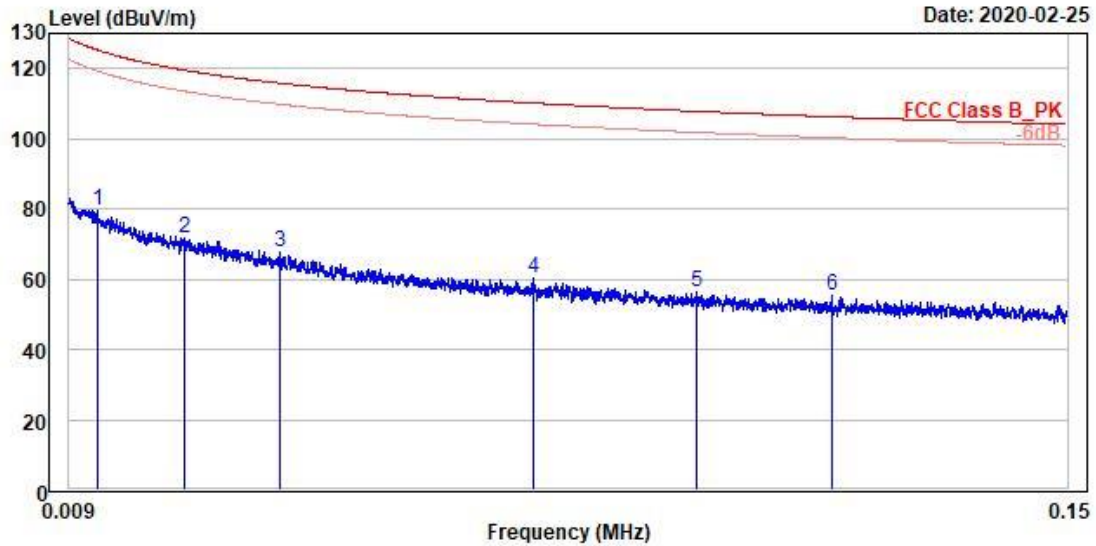
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2324.75	39.14	2.01	37.13	54.00	-14.86	101	225	Average	Vertical
2 *	2480.00	86.05	48.49	37.56	54.00	32.05	101	225	Average	Vertical
3	2483.54	46.03	8.47	37.56	54.00	-7.97	101	225	Average	Vertical

Spurious Emissions, TX Mode, 9kHz-30MHz

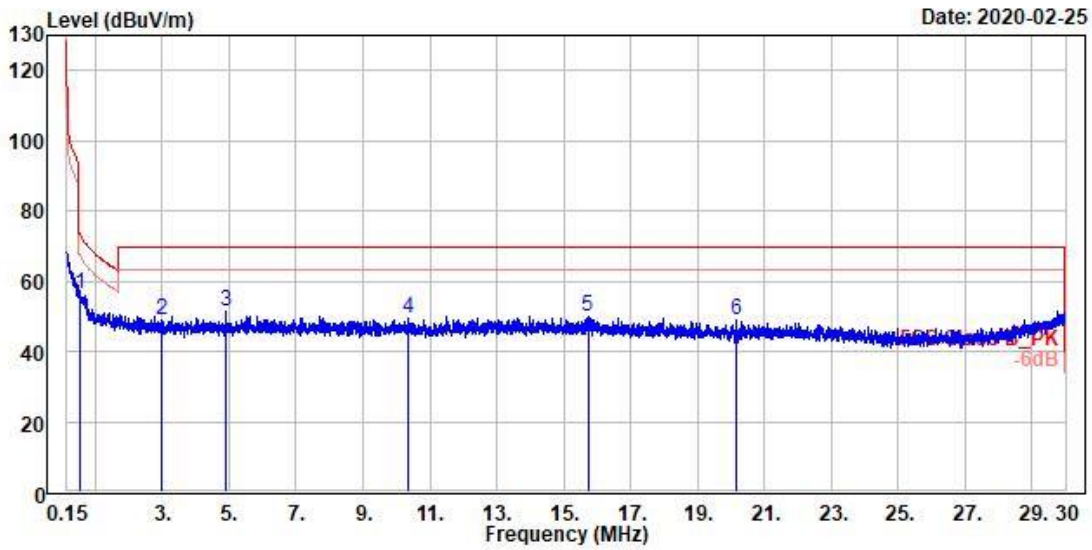
2405MHz



TUV Rheinland Taiwan Ltd.
 No. 458-18, Sec 2, Fenliao, Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
 Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	0.01	79.65	2.71	76.94	125.30	-45.65	100	68	QP	vertical
2	0.03	71.82	0.23	71.59	119.53	-47.71	100	210	QP	vertical
3	0.04	67.75	-0.21	67.96	115.83	-48.08	100	95	QP	vertical
4	0.07	60.16	-1.69	61.85	110.15	-49.99	100	26	QP	vertical
5	0.10	56.42	-3.11	59.53	107.80	-51.38	100	303	QP	vertical
6	0.12	55.53	-2.75	58.28	106.25	-50.72	100	245	QP	vertical



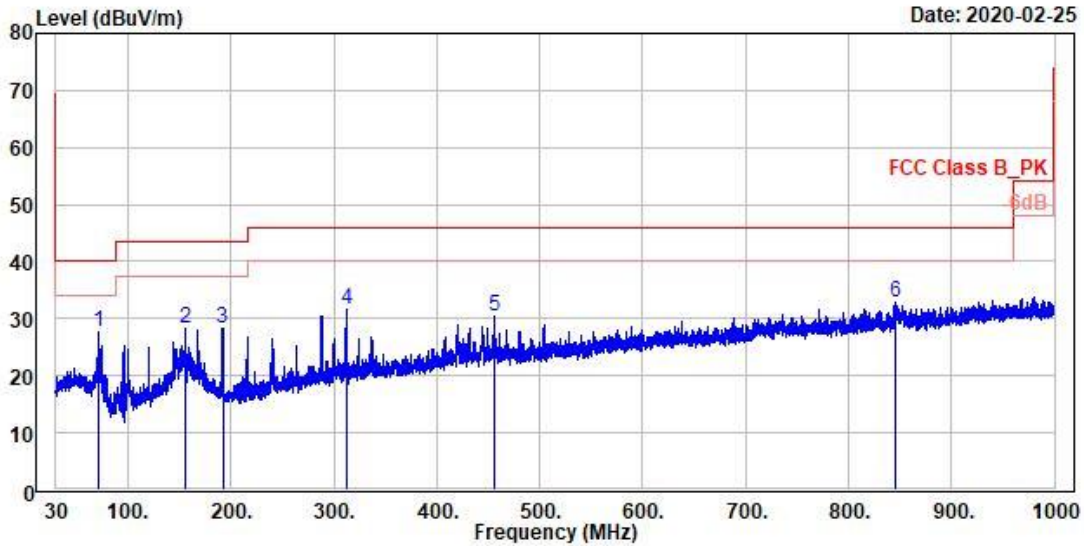
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	0.55	56.34	10.42	45.92	72.75	-16.41	100	0	QP	vertical
2	3.00	49.03	10.81	38.22	69.50	-20.47	100	195	QP	vertical
3	4.92	51.43	13.09	38.34	69.50	-18.07	100	255	QP	vertical
4	10.35	49.63	12.18	37.45	69.50	-19.87	100	334	QP	vertical
5	15.73	49.91	12.33	37.58	69.50	-19.59	100	46	QP	vertical
6	20.15	48.87	12.64	36.23	69.50	-20.63	100	124	QP	vertical

Spurious Emissions, TX Mode, 30MHz-1GHz

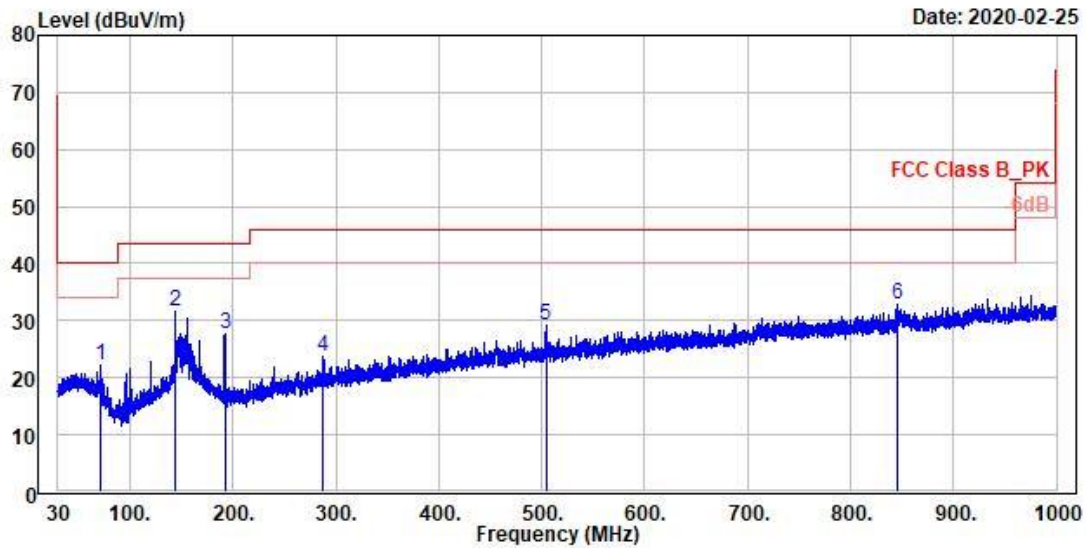
2405MHz



TUV Rheinland Taiwan Ltd.
 No. 458-18, Sec 2, Fenliao, Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
 Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	71.90	27.63	38.10	-10.47	40.00	-12.37	400	182	QP	horizontal
2	156.00	28.31	35.90	-7.59	43.50	-15.19	200	224	QP	horizontal
3	191.99	28.44	38.26	-9.82	43.50	-15.06	100	215	QP	horizontal
4	311.98	31.49	37.71	-6.22	46.00	-14.51	100	344	QP	horizontal
5	456.02	30.27	33.93	-3.66	46.00	-15.73	100	132	QP	horizontal
6	845.09	32.99	30.65	2.34	46.00	-13.01	400	113	QP	horizontal



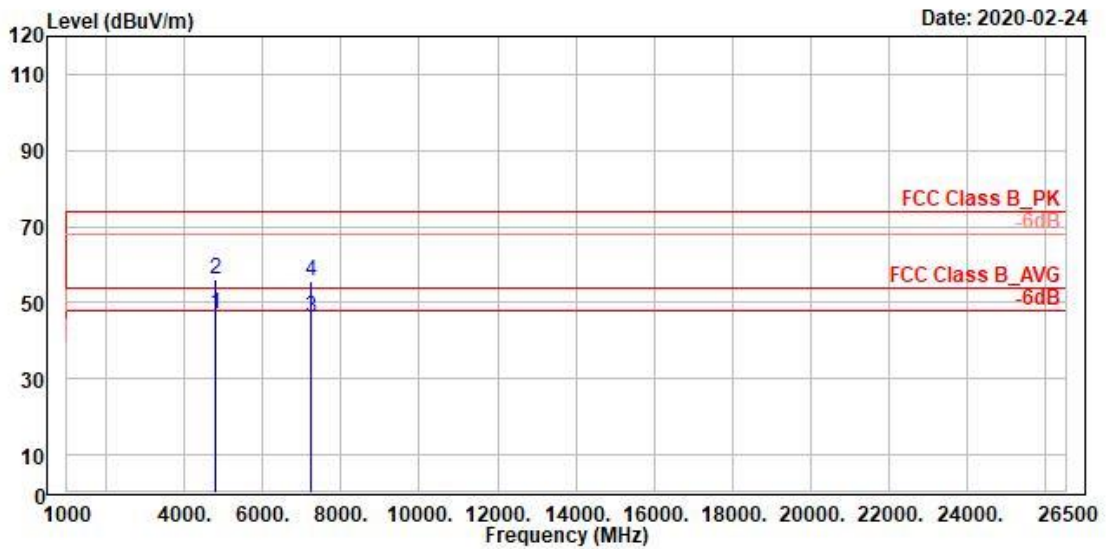
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	72.00	22.24	32.73	-10.49	40.00	-17.76	300	37	QP	vertical
2	143.98	31.78	39.43	-7.65	43.50	-11.72	100	35	QP	vertical
3	192.18	27.60	37.43	-9.83	43.50	-15.90	100	20	QP	vertical
4	287.44	23.59	30.35	-6.76	46.00	-22.41	100	60	QP	vertical
5	504.04	29.14	32.24	-3.10	46.00	-16.86	100	162	QP	vertical
6	844.99	32.99	30.65	2.34	46.00	-13.01	400	270	QP	vertical

Spurious Emissions, TX Mode, 1GHz-26.5GHz

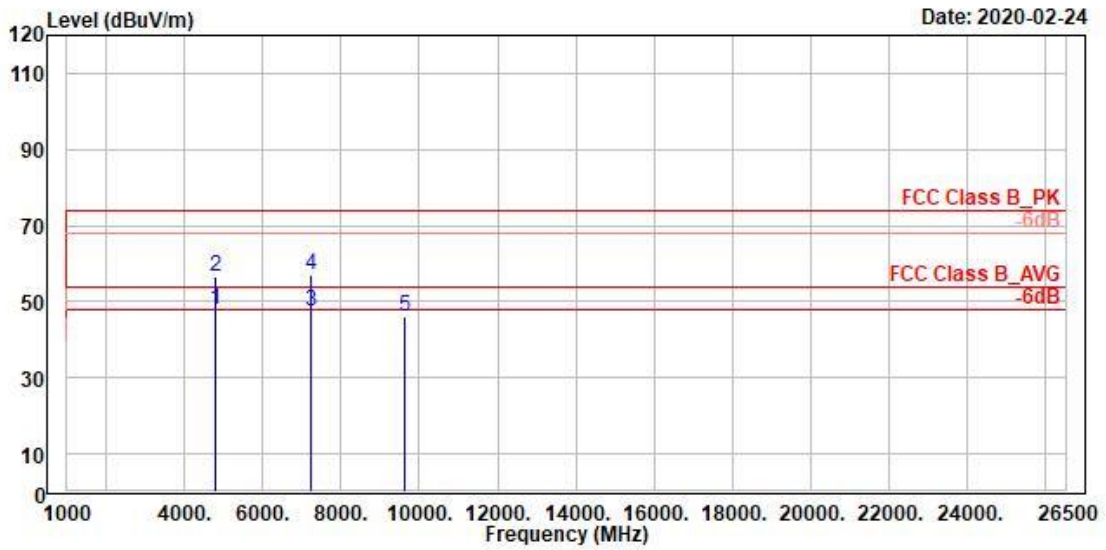
2405MHz



TUV Rheinland Taiwan Ltd.
 No. 458-18, Sec 2, Fenliao, Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
 Tel:+886-2172-1000 Fax:+886-2172-1322



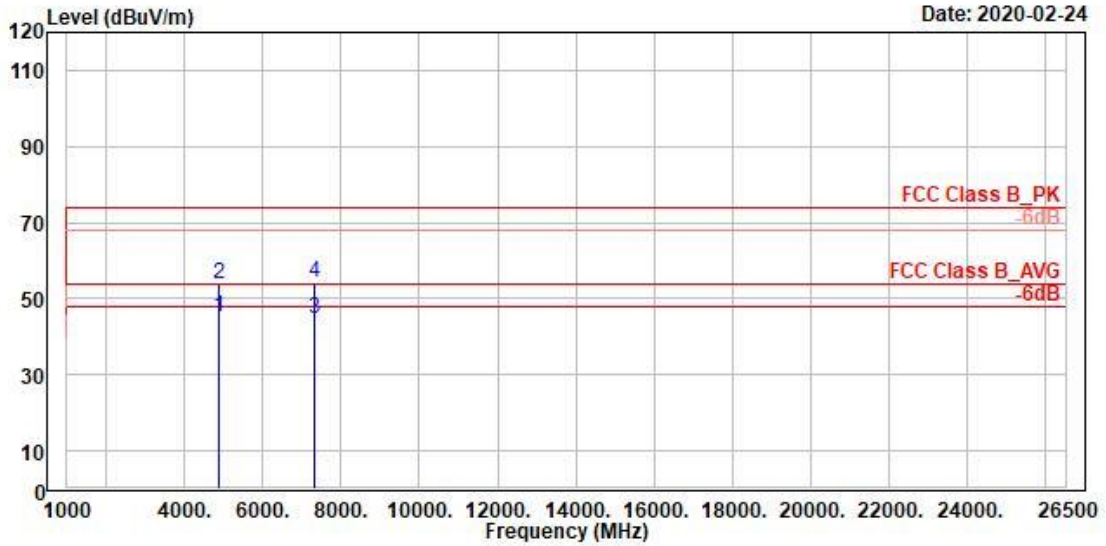
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	4810.00	47.17	57.35	-10.18	54.00	-6.83	126	0	Average	horizontal
2	4810.00	56.22	66.40	-10.18	74.00	-17.78	126	0	Peak	horizontal
3	7215.00	45.97	53.66	-7.69	54.00	-8.03	119	169	Average	horizontal
4	7215.00	55.52	63.21	-7.69	74.00	-18.48	119	169	Peak	horizontal



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBUV/m	dBUV	dB/m	dBUV/m	dB	cm	deg		
1 !	4810.00	48.00	58.18	-10.18	54.00	-6.00	142	196	Average	vertical
2	4810.00	56.62	66.80	-10.18	74.00	-17.38	142	196	Peak	vertical
3	7215.00	47.46	55.15	-7.69	54.00	-6.54	100	109	Average	vertical
4	7215.00	56.99	64.68	-7.69	74.00	-17.01	100	109	Peak	vertical
5	9620.00	46.25	51.54	-5.29	74.00	-27.75	100	267	Peak	vertical

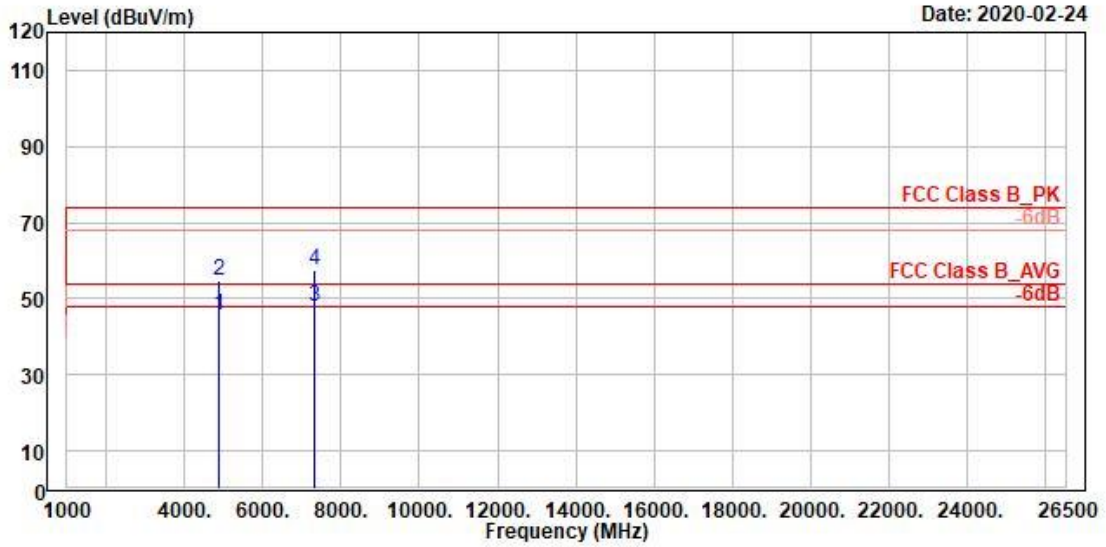


TUV Rheinland Taiwan Ltd.
 No. 458-18, Sec 2, Fenliao, Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
 Tel:+886-2172-1000 Fax:+886-2172-1322



Date: 2020-02-24

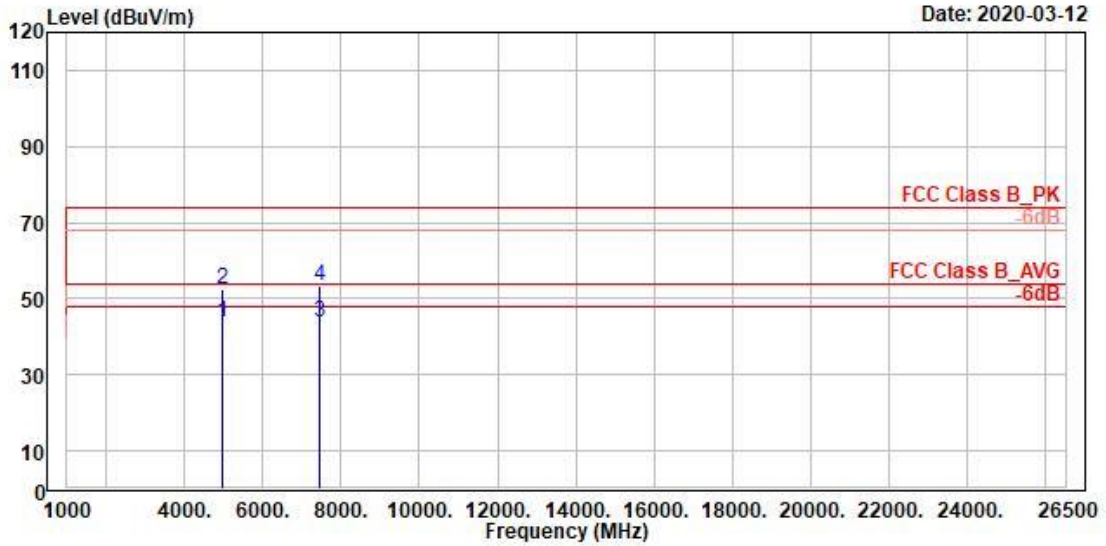
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	4870.00	44.98	55.04	-10.06	54.00	-9.02	100	342	Average	horizontal
2	4870.00	53.80	63.86	-10.06	74.00	-20.20	100	342	Peak	horizontal
3	7305.00	44.64	52.38	-7.74	54.00	-9.36	100	65	Average	horizontal
4	7305.00	54.29	62.03	-7.74	74.00	-19.71	100	65	Peak	horizontal



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	4870.00	45.67	55.73	-10.06	54.00	-8.33	167	194	Average	vertical
2	4870.00	54.58	64.64	-10.06	74.00	-19.42	167	194	Peak	vertical
3	7305.00	47.75	55.49	-7.74	54.00	-6.25	100	110	Average	vertical
4	7305.00	57.32	65.06	-7.74	74.00	-16.68	100	110	Peak	vertical

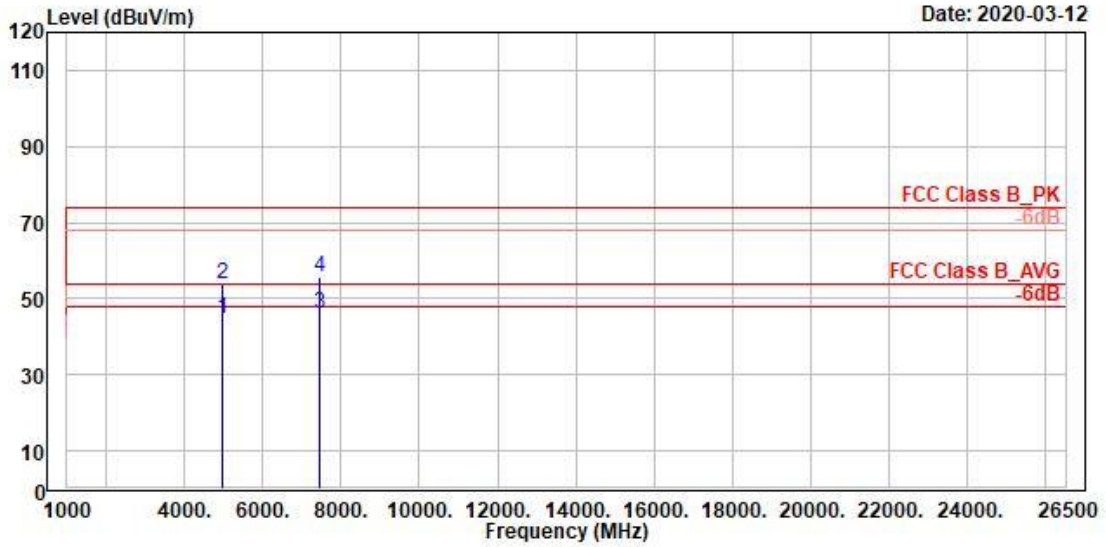


TUV Rheinland Taiwan Ltd.
 No. 458-18, Sec 2, Fenliao, Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
 Tel:+886-2172-1000 Fax:+886-2172-1322



Date: 2020-03-12

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	4960.00	43.62	53.38	-9.76	54.00	-10.38	128	328	Average	horizontal
2	4960.00	52.50	62.26	-9.76	74.00	-21.50	128	328	Peak	horizontal
3	7440.00	43.65	51.37	-7.72	54.00	-10.35	106	63	Average	horizontal
4	7440.00	53.31	61.03	-7.72	74.00	-20.69	106	63	Peak	horizontal



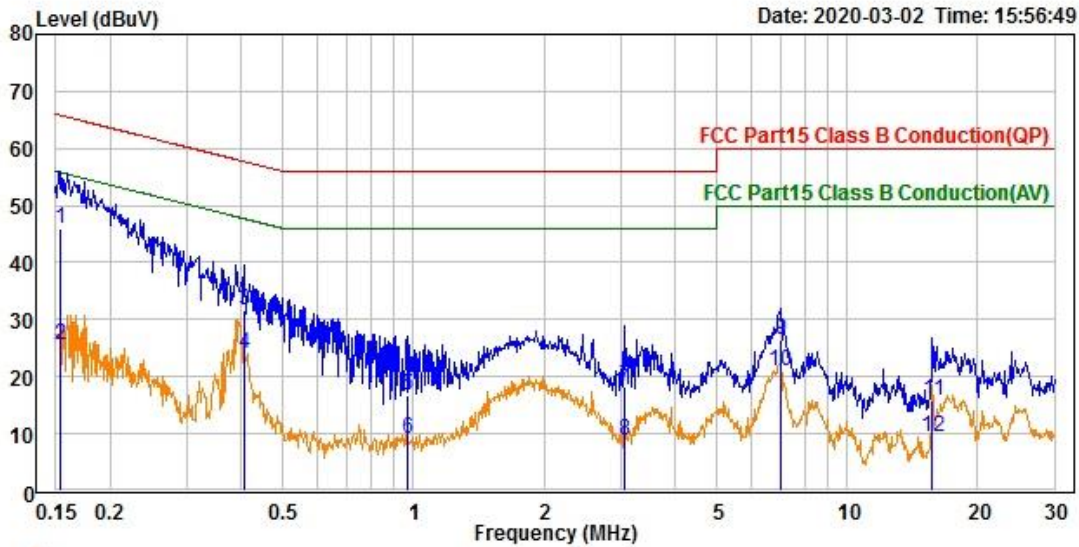
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	4960.00	44.90	54.66	-9.76	54.00	-9.10	300	219	Average	vertical
2	4960.00	53.74	63.50	-9.76	74.00	-20.26	300	219	Peak	vertical
3	7440.00	46.24	53.96	-7.72	54.00	-7.76	100	116	Average	vertical
4	7440.00	55.57	63.29	-7.72	74.00	-18.43	100	116	Peak	vertical

Spurious Emissions, AC Mains

2405MHz

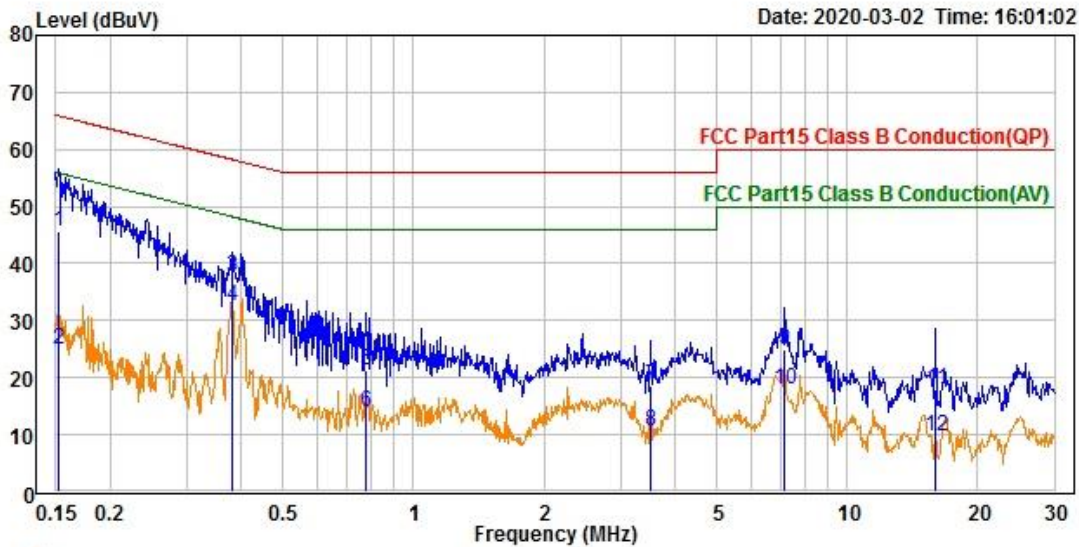


TUV Rheinland Taiwan Ltd.
 11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105
 Tel:+886-2172-7000 Fax:+886-2528-0018



Trace: 1

	Read Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Note
	MHz	dBuV	dB	dBuV	dBuV	dB		
1	0.153	36.19	9.61	45.80	65.83	-20.03	QP	
2	0.153	16.00	9.61	25.61	55.83	-30.22	Average	
3	0.406	22.09	9.62	31.71	57.72	-26.01	QP	
4	0.406	14.34	9.62	23.96	47.72	-23.76	Average	
5	0.972	7.04	9.62	16.66	56.00	-39.34	QP	
6	0.972	-0.40	9.62	9.22	46.00	-36.78	Average	
7	3.060	8.54	9.65	18.19	56.00	-37.81	QP	
8	3.060	-0.80	9.65	8.85	46.00	-37.15	Average	
9	6.999	16.76	9.70	26.46	60.00	-33.54	QP	
10	6.999	11.19	9.70	20.89	50.00	-29.11	Average	
11	15.693	6.13	9.77	15.90	60.00	-44.10	QP	
12	15.693	-0.33	9.77	9.44	50.00	-40.56	Average	



Trace: 1

	Read Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Note
	MHz	dBuV	dB	dBuV	dBuV	dB		
1	0.152	36.15	9.62	45.77	65.88	-20.11	QP	
2	0.152	15.45	9.62	25.07	55.88	-30.81	Average	
3	0.383	27.97	9.63	37.60	58.22	-20.62	QP	
4	0.383	23.01	9.63	32.64	48.22	-15.58	Average	
5	0.777	11.56	9.63	21.19	56.00	-34.81	QP	
6	0.777	4.29	9.63	13.92	46.00	-32.08	Average	
7	3.536	8.86	9.68	18.54	56.00	-37.46	QP	
8	3.536	0.85	9.68	10.53	46.00	-35.47	Average	
9	7.176	15.24	9.71	24.95	60.00	-35.05	QP	
10	7.176	8.33	9.71	18.04	50.00	-31.96	Average	
11	16.009	8.09	9.80	17.89	60.00	-42.11	QP	
12	16.009	0.00	9.80	9.80	50.00	-40.20	Average	