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A.1 RADIATED EMISSION

Test Date	2024/10/15	Temp./Hum.	23°C/55%
Test Voltage	DC 6V (Via Battery)	Tested By	Brian Hsieh

A.1.1 Emissions within Restricted Frequency Bands

A.2.1.1 Frequency 9kHz~30MHz

The emissions (9kHz~30MHz) not reported for there is no emission be found.

A.2.1.2 Frequency Below 1 GHz

Mode	FASSTest	Frequency	TX 2472.960MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
30.970	23.59	1.22	26.50	31.96	30.27	40.00	9.73	Peak
164.830	15.40	3.03	25.97	39.47	31.93	43.50	11.57	Peak
373.574	20.50	5.24	26.32	39.04	38.45	46.00	7.55	Peak
679.124	24.44	7.19	27.49	32.31	36.45	46.00	9.55	Peak
902.224	26.16	8.73	27.14	32.72	40.47	46.00	5.53	Peak
981.376	26.84	9.17	26.88	33.10	42.24	54.00	11.76	Peak
30.970	23.59	1.22	26.50	31.96	30.27	40.00	9.73	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
68.412	11.78	1.87	26.41	47.61	34.84	40.00	5.16	Peak
126.030	17.66	2.60	26.16	32.65	26.76	43.50	16.74	Peak
240.490	17.34	3.79	25.75	44.00	39.37	46.00	6.63	Peak
708.806	24.57	7.36	27.48	33.28	37.73	46.00	8.27	Peak
903.970	26.18	8.74	27.14	32.77	40.56	46.00	5.44	Peak
970.706	26.75	9.11	26.91	32.84	41.79	54.00	12.21	Peak

Mode	T-FHSS	Frequency	TX 2467.500MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
32.910	22.73	1.26	26.50	31.17	28.66	40.00	11.34	Peak
192.960	14.87	3.32	25.86	34.86	27.19	43.50	16.31	Peak
282.782	18.36	4.20	25.68	41.20	38.08	46.00	7.92	Peak
657.978	24.34	7.08	27.49	36.90	40.83	46.00	5.17	Peak
898.150	26.10	8.71	27.15	33.10	40.76	46.00	5.24	Peak
960.424	26.66	9.06	26.95	33.32	42.08	54.00	11.92	Peak

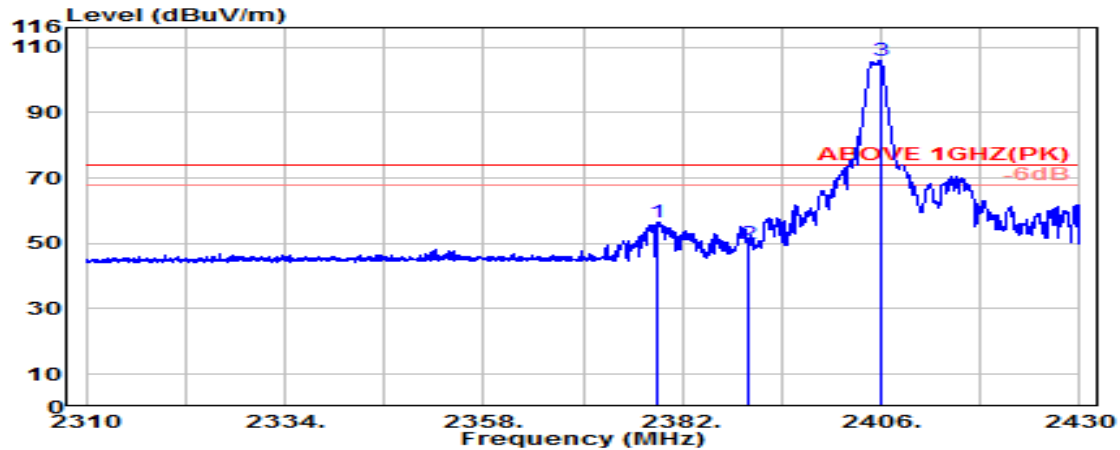
Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
39.894	19.04	1.39	26.50	43.80	37.73	40.00	2.27	Peak
142.908	16.85	2.79	26.07	45.64	39.22	43.50	4.28	Peak
288.214	18.44	4.25	25.67	44.76	41.78	46.00	4.22	Peak
688.048	24.47	7.24	27.49	37.38	41.60	46.00	4.40	Peak
902.224	26.16	8.73	27.14	31.72	39.47	46.00	6.53	Peak
965.662	26.71	9.09	26.93	31.96	40.83	54.00	13.17	Peak

A.2.1.3 Frequency Above 1 GHz to 10th harmonics

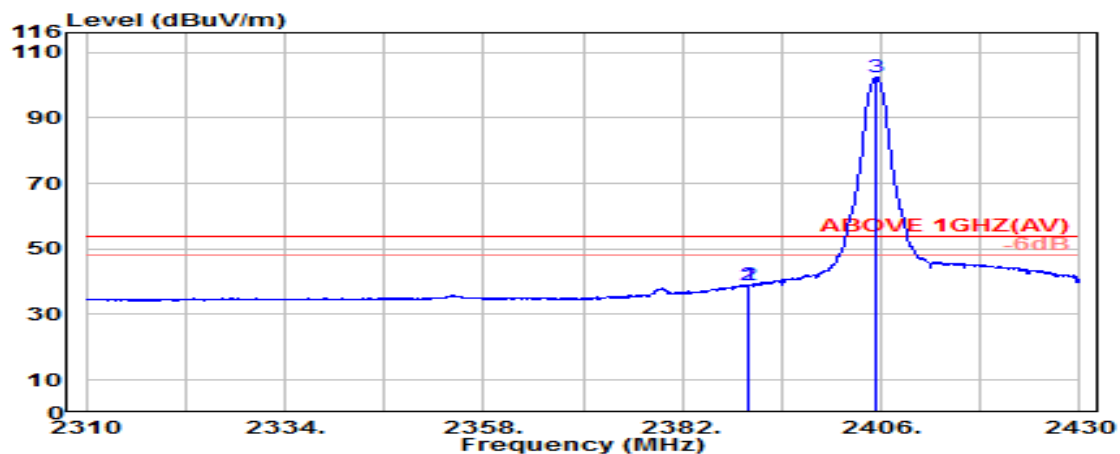
Band Edge:

Mode	FASSTest	Frequency	TX 2405.376MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2378.900	28.18	5.71	39.88	62.63	56.64	74.00	17.36	Peak
2390.000	28.14	5.72	39.88	55.71	49.69	74.00	24.31	Peak
@ 2405.900	28.12	5.74	39.88	111.83	105.82	---	---	Peak

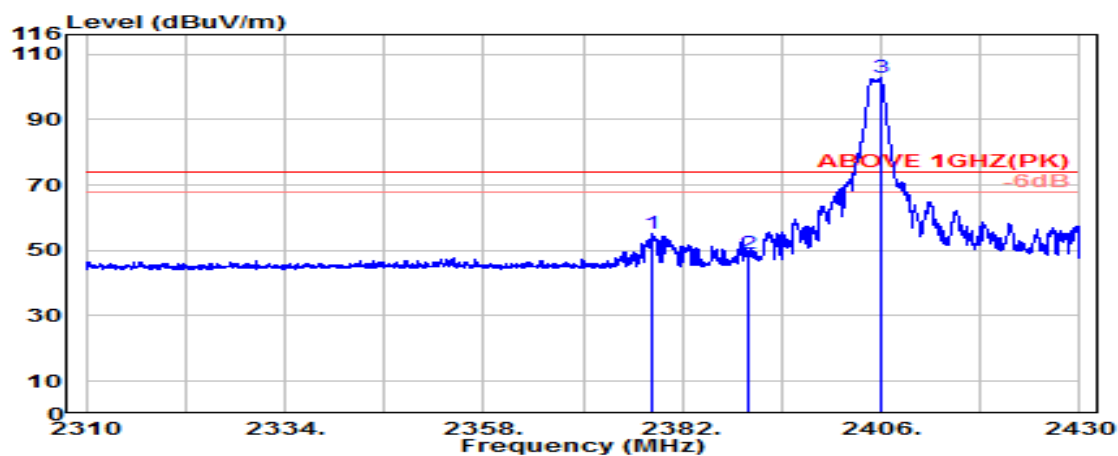


Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2389.850	28.14	5.72	39.88	45.05	39.03	54.00	14.97	Average
2390.000	28.14	5.72	39.88	44.94	38.92	54.00	15.08	Average
@ 2405.450	28.12	5.74	39.88	108.45	102.44	---	---	Average

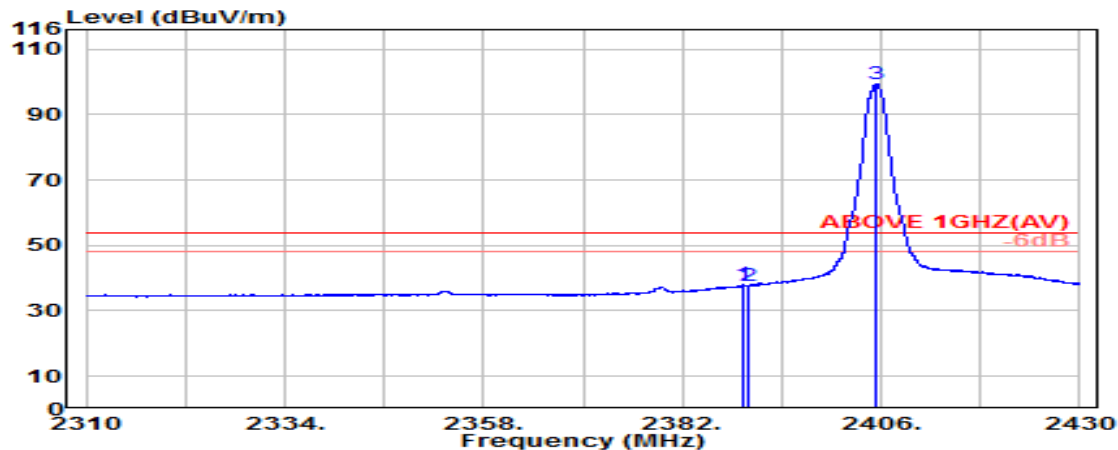
Remark: The “@” means fundamental frequency, it is ignored in this section.

Mode	FASSTest	Frequency	TX 2405.376MHz
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Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2378.200	28.19	5.71	39.88	60.95	54.96	74.00	19.04	Peak
2390.000	28.14	5.72	39.88	54.97	48.95	74.00	25.05	Peak
@ 2405.900	28.12	5.74	39.88	108.71	102.69	---	---	Peak

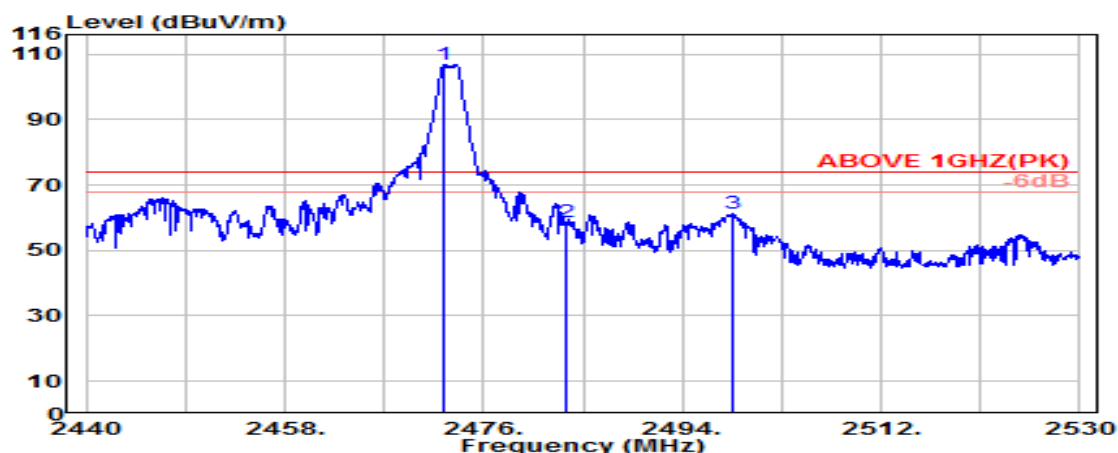


Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2389.200	28.14	5.72	39.88	43.89	37.88	54.00	16.12	Average
2390.000	28.14	5.72	39.88	43.82	37.80	54.00	16.20	Average
@ 2405.450	28.12	5.74	39.88	105.41	99.39	---	---	Average

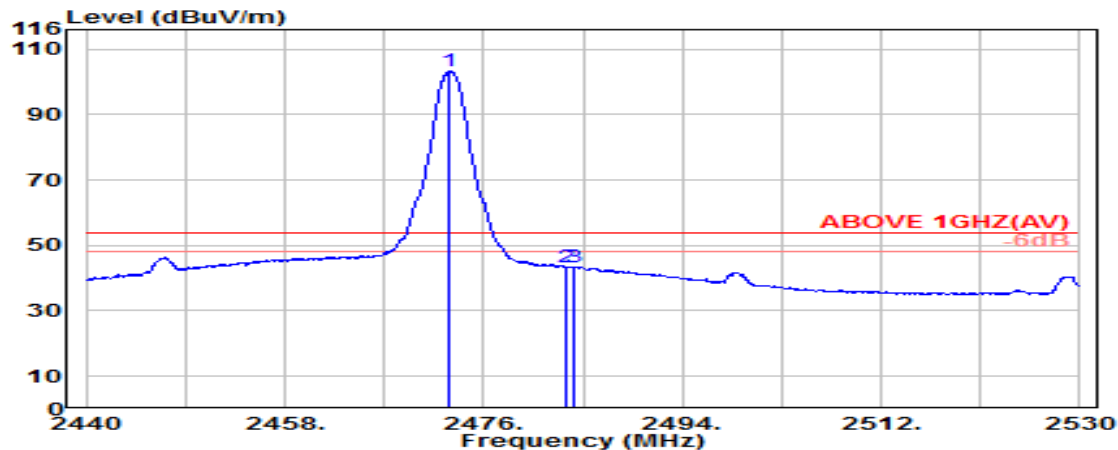
Remark: The “@” means fundamental frequency, it is ignored in this section.

Mode	FASSTest	Frequency	TX 2472.960MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2472.450	28.35	5.82	39.87	112.51	106.80	---	---	Peak
2483.500	28.37	5.83	39.87	64.50	58.83	74.00	15.17	Peak
2498.500	28.40	5.85	39.87	67.08	61.45	74.00	12.55	Peak

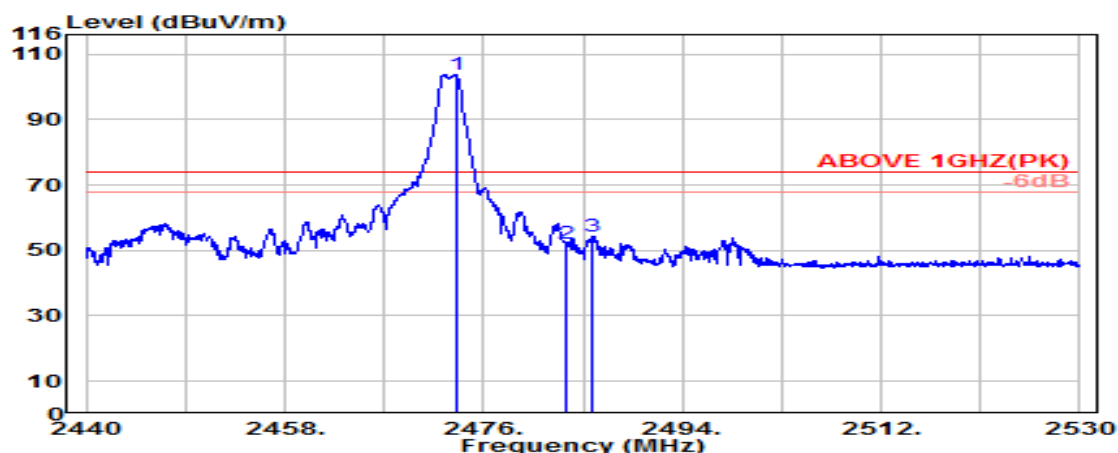


Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2472.950	28.35	5.82	39.87	109.05	103.35	---	---	Average
2483.500	28.37	5.83	39.87	49.12	43.44	54.00	10.56	Average
2484.150	28.37	5.83	39.87	49.22	43.55	54.00	10.45	Average

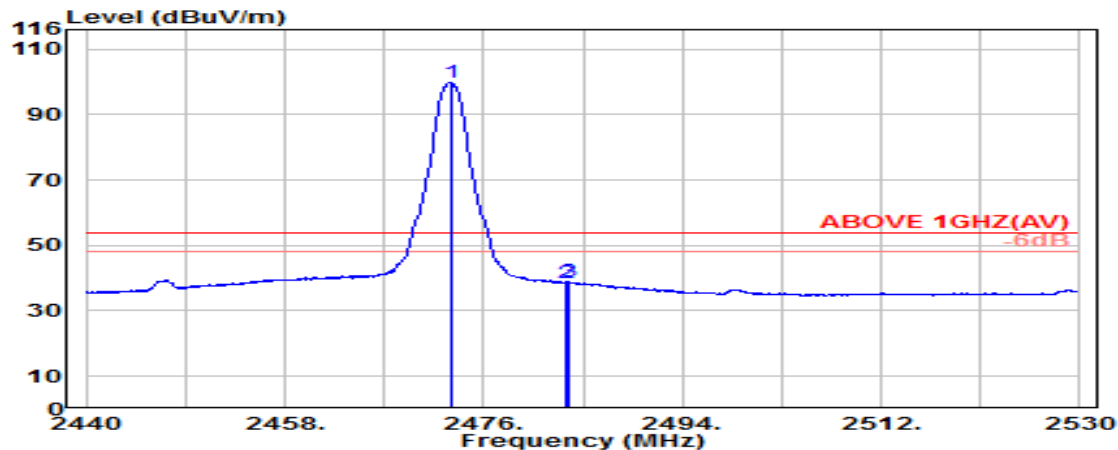
Remark: The “@” means fundamental frequency, it is ignored in this section.

Mode	FASSTest	Frequency	TX 2472.960MHz
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Antenna at Vertical Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@	2473.550	28.35	5.82	39.87	109.55	103.85	74.00	---	Peak
	2483.500	28.37	5.83	39.87	57.91	52.24	74.00	21.76	Peak
	2485.850	28.37	5.83	39.87	60.13	54.47	74.00	19.53	Peak

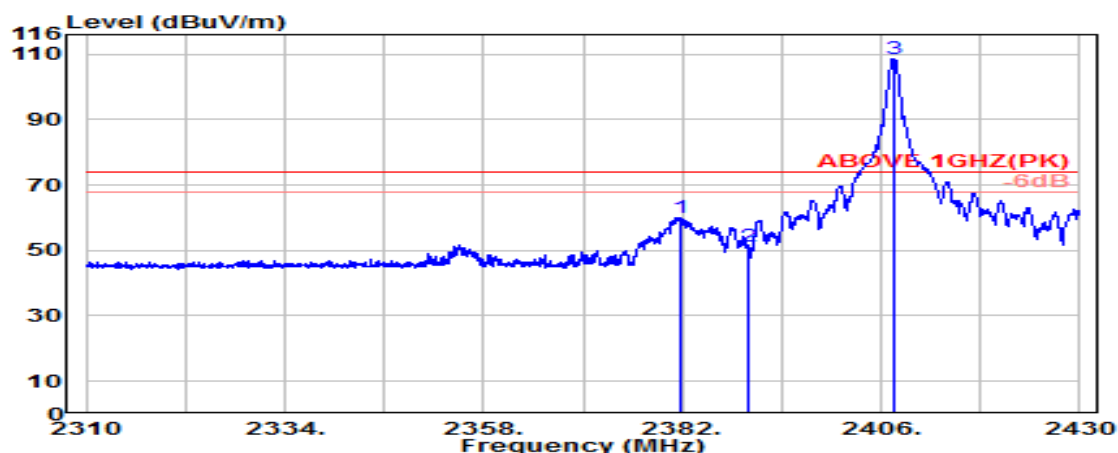


Antenna at Vertical Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@	2473.000	28.35	5.82	39.87	105.69	99.98	---	---	Average
	2483.500	28.37	5.83	39.87	44.40	38.73	54.00	15.27	Average
	2483.650	28.37	5.83	39.87	44.55	38.88	54.00	15.12	Average

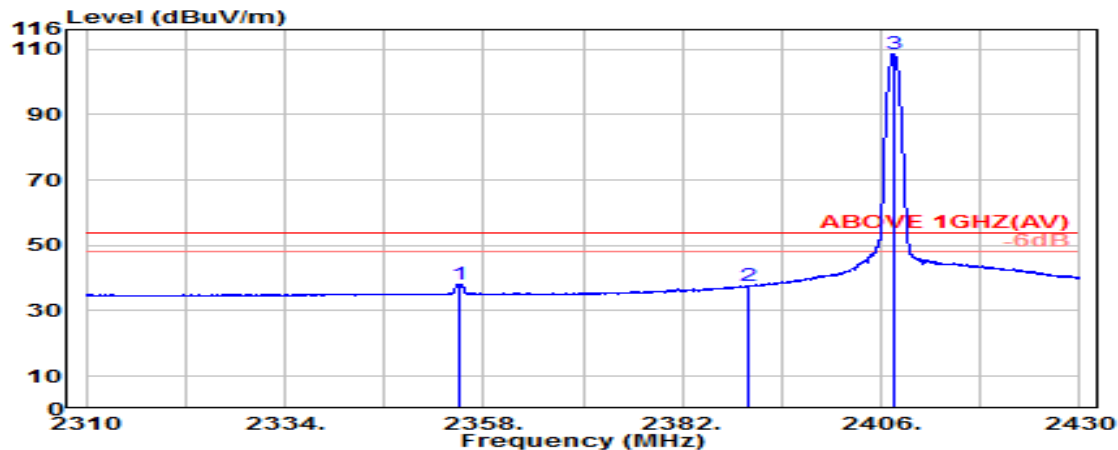
Remark: The “@” means fundamental frequency, it is ignored in this section.

Mode	T-FHSS	Frequency	TX 2407.500MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2381.850	28.17	5.71	39.88	65.92	59.92	74.00	14.08	Peak
2390.000	28.14	5.72	39.88	57.30	51.28	74.00	22.72	Peak
@ 2407.500	28.13	5.74	39.88	114.69	108.69	---	---	Peak

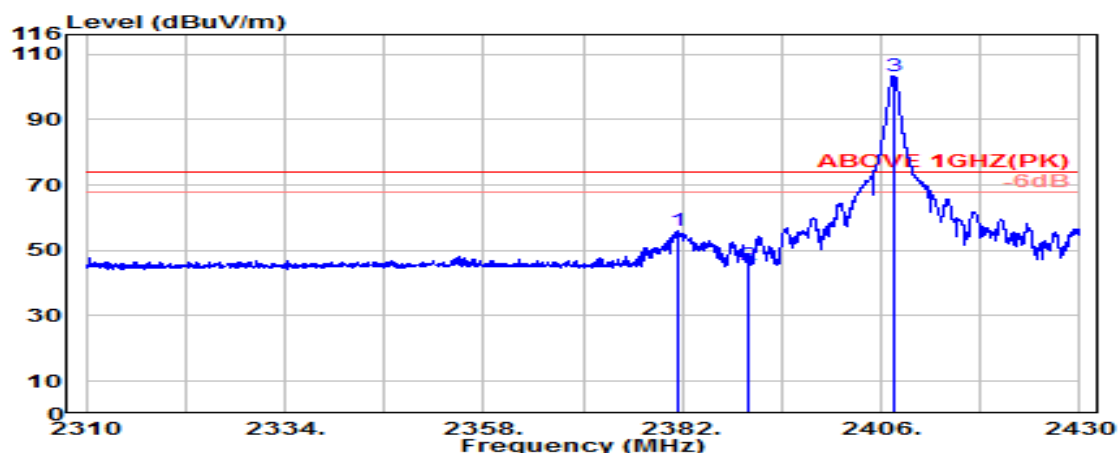


Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2355.050	28.28	5.68	39.88	44.21	38.29	54.00	15.71	Average
2390.000	28.14	5.72	39.88	43.50	37.48	54.00	16.52	Average
@ 2407.500	28.13	5.74	39.88	114.78	108.77	---	---	Average

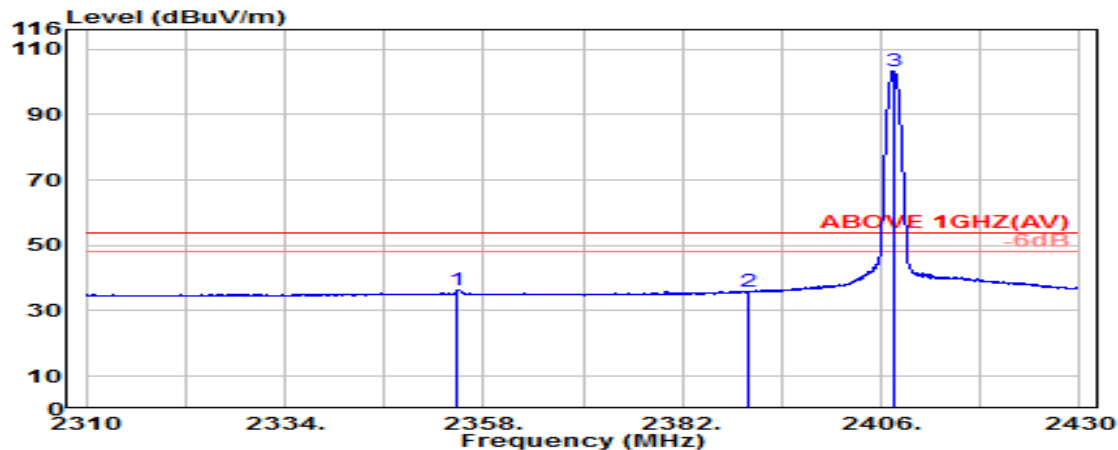
Remark: The “@” means fundamental frequency, it is ignored in this section.

Mode	T-FHSS	Frequency	TX 2407.500MHz
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Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2381.350	28.17	5.71	39.88	61.82	55.83	74.00	18.17	Peak
2390.000	28.14	5.72	39.88	51.43	45.41	74.00	28.59	Peak
@ 2407.600	28.13	5.74	39.88	109.29	103.29	---	---	Peak

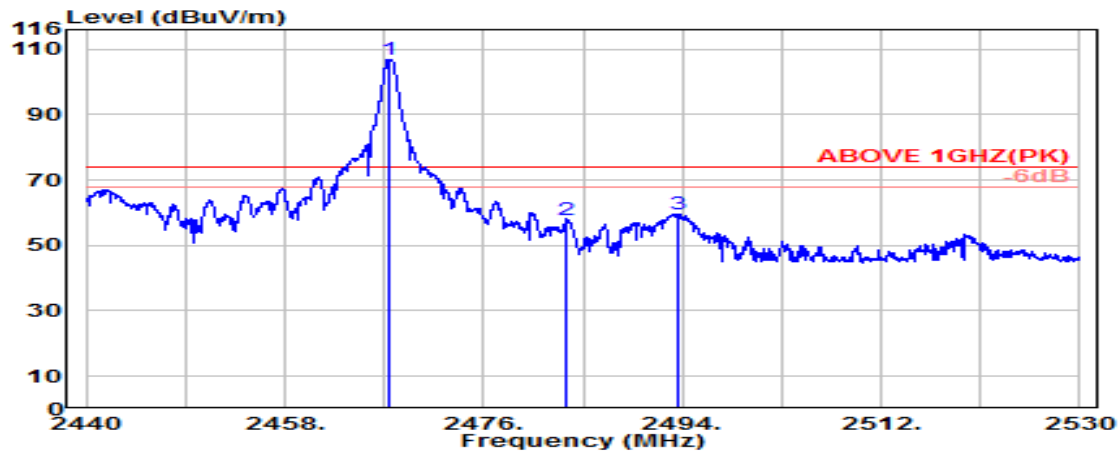


Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2354.800	28.28	5.68	39.88	42.25	36.33	54.00	17.67	Average
2390.000	28.14	5.72	39.88	42.07	36.05	54.00	17.95	Average
@ 2407.550	28.13	5.74	39.88	109.44	103.43	---	---	Average

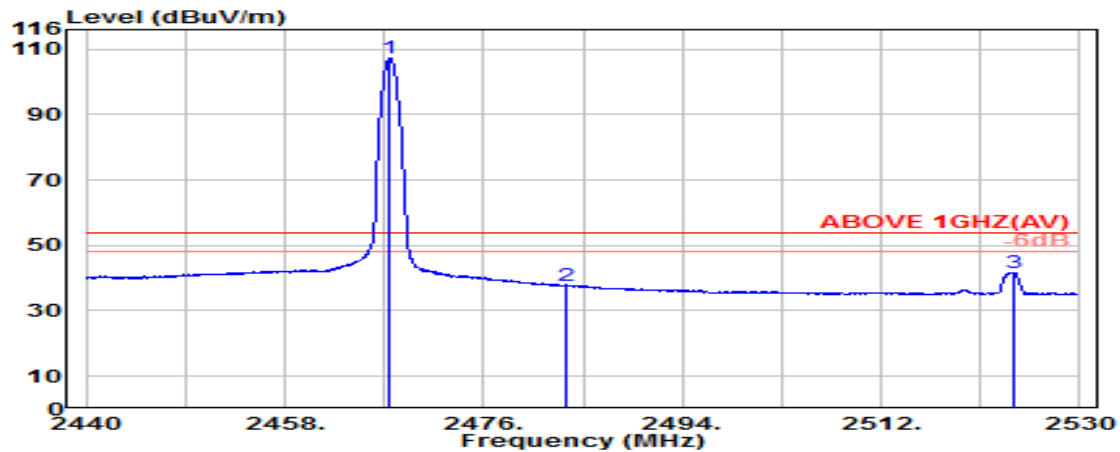
Remark: The “@” means fundamental frequency, it is ignored in this section.

Mode	FASSTest	Frequency	TX 2467.500MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2467.450	28.34	5.81	39.87	112.75	107.02	---	---	Peak
2483.500	28.37	5.83	39.87	63.47	57.80	74.00	16.20	Peak
2493.500	28.39	5.84	39.87	65.39	59.74	74.00	14.26	Peak

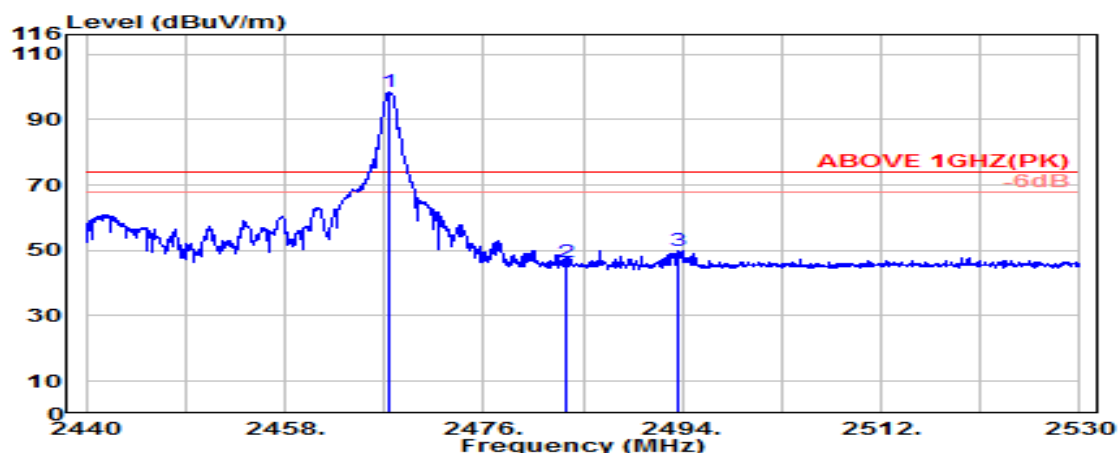


Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2467.550	28.34	5.81	39.87	112.86	107.13	---	---	Average
2483.500	28.37	5.83	39.87	43.46	37.79	54.00	16.21	Average
2524.100	28.55	5.88	39.88	47.20	41.74	54.00	12.26	Average

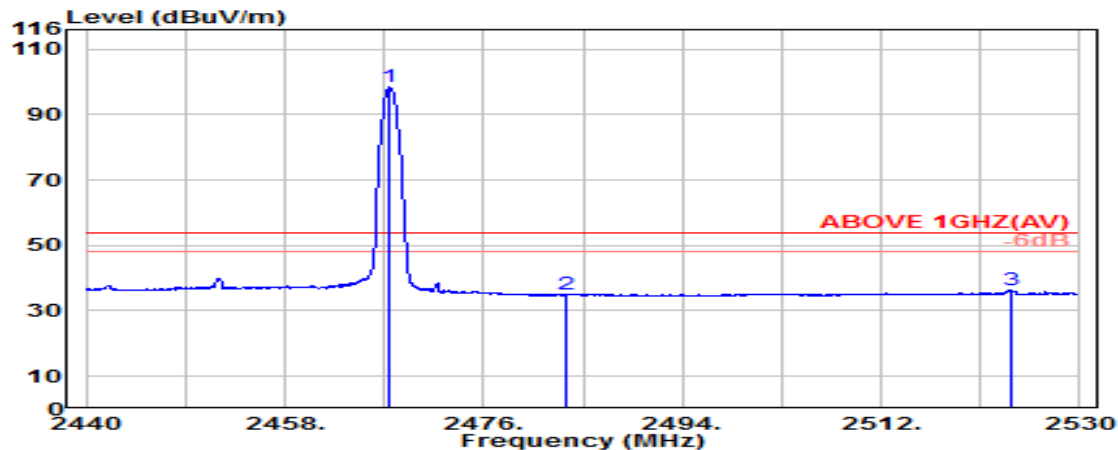
Remark: The “@” means fundamental frequency, it is ignored in this section.

Mode	FASSTest	Frequency	TX 2467.5MHz
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Antenna at Vertical Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@	2467.450	28.34	5.81	39.87	104.03	98.30	---	---	Peak
	2483.500	28.37	5.83	39.87	51.98	46.31	74.00	27.69	Peak
	2493.550	28.39	5.84	39.87	55.75	50.11	74.00	23.89	Peak



Antenna at Vertical Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@	2467.500	28.34	5.81	39.87	104.05	98.33	---	---	Average
	2483.500	28.37	5.83	39.87	40.69	35.02	54.00	18.98	Average
	2523.700	28.54	5.88	39.88	41.77	36.32	54.00	17.68	Average

Remark: The “@” means fundamental frequency, it is ignored in this section.

A.1.2 Emissions outside the frequency band:

The emissions (up to 25GHz) not reported for there is no emission be found.

Mode	FASSTest	Frequency	TX 2405.376MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4810.000	32.94	8.13	39.30	46.86	48.63	54.00	5.37	Average
4810.000	32.94	8.13	39.30	52.80	54.57	74.00	19.43	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4810.000	32.94	8.13	39.30	50.23	52.00	54.00	2.00	Peak

Mode	FASSTest	Frequency	TX 2439.168MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4877.000	33.15	8.16	39.27	49.90	51.95	54.00	2.05	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4880.000	33.16	8.16	39.27	48.45	50.50	54.00	3.50	Peak

Mode	FASSTest	Frequency	TX 2472.960MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4945.000	33.20	8.19	39.24	45.24	47.40	54.00	6.60	Average
4945.000	33.20	8.19	39.24	52.13	54.29	74.00	19.71	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4945.000	33.20	8.19	39.24	47.46	49.62	54.00	4.38	Peak

Mode	T-FHSS	Frequency	TX 2407.500MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4815.000	32.96	8.13	39.30	51.43	53.22	54.00	0.78	Average
4815.000	32.96	8.13	39.30	52.97	54.76	74.00	19.24	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4815.000	32.96	8.13	39.30	50.70	52.49	54.00	1.51	Peak

Mode	T-FHSS	Frequency	TX 2437.500MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4875.000	33.15	8.16	39.27	50.69	52.73	54.00	1.27	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4875.000	33.15	8.16	39.27	48.33	50.37	54.00	3.63	Peak

Mode	T-FHSS	Frequency	TX 2467.500MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4935.000	33.20	8.19	39.24	49.43	51.58	54.00	2.42	Average
4935.000	33.20	8.19	39.24	52.37	54.52	74.00	19.48	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4935.000	33.20	8.19	39.24	47.89	50.03	54.00	3.97	Peak

A.1.3 Emissions in Non-restricted Frequency Bands:

All emission levels below the FCC 15.209(a)/RSS-Gen Section 8.9 table 4 general radiated emissions limits is not required.

A.2 20dB/OCCUPIED BANDWIDTH

Test Date	2024/10/14	Temp./Hum.	24°C/54%
Cable Loss	0.90 dB	Tested By	Brian Hsieh
Test Voltage	DC 6V (Via Battery)		

A.2.1 Emission Bandwidth Result

Mode	Centre Frequency (MHz)	20 dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit 2/3 (20dB Bandwidth)
FASSTest (ANT A)	2405.376	2.654	1.9486	1.769
	2439.168	2.660	2.3845	1.773
	2472.960	2.664	2.4558	1.776
FASSTest (ANT B)	2405.376	2.655	2.0721	1.770
	2439.168	2.660	2.3948	1.773
	2472.960	2.664	2.4643	1.776

Remark: The maximum two-thirds of the 20dB bandwidth shall be at maximum 1.776MHz.

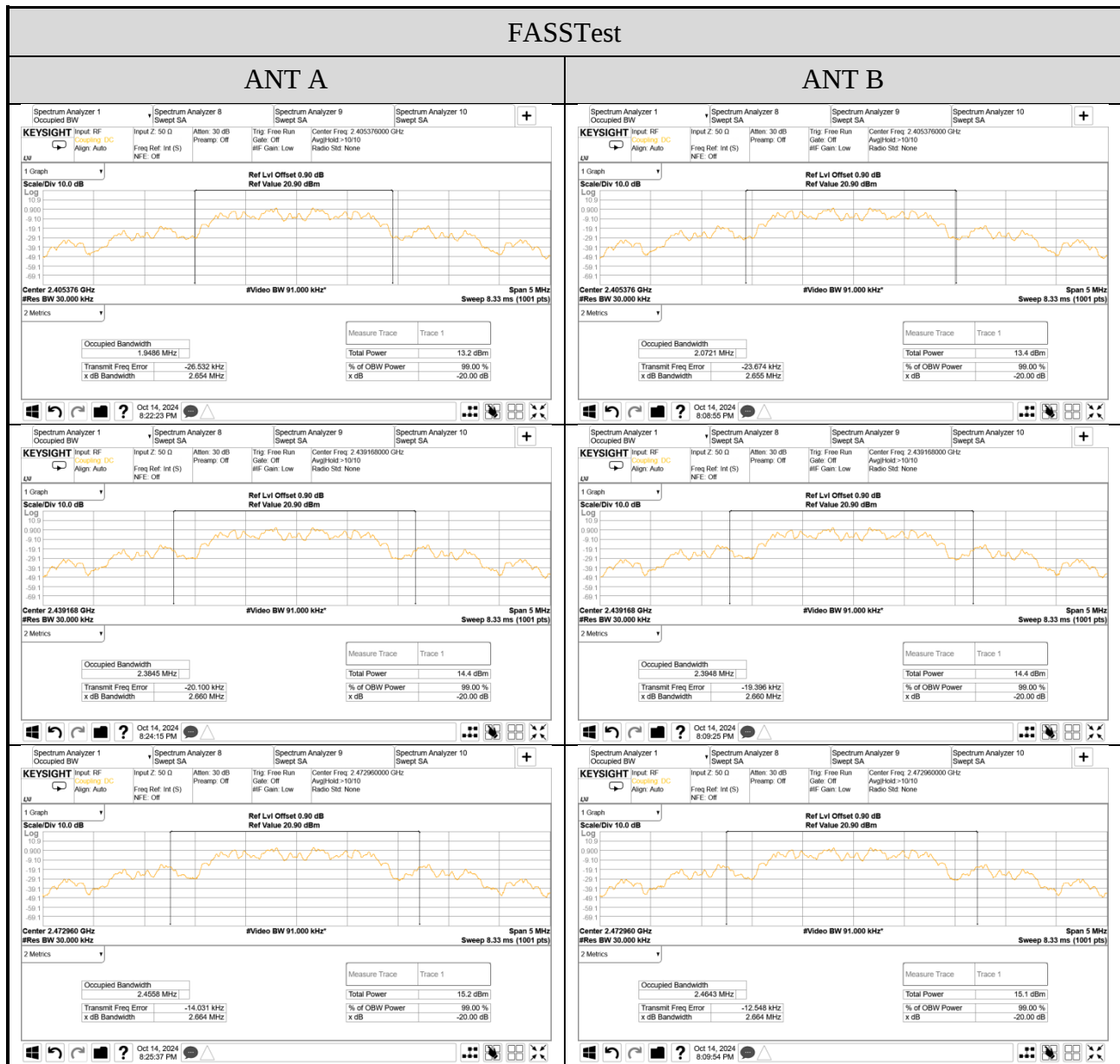
Mode	Centre Frequency (MHz)	20 dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit 2/3 (20dB Bandwidth)
T-FHSS (ANT A)	2407.500	0.2043	0.22981	0.136
	2437.500	0.2576	0.22050	0.172
	2467.500	0.2584	0.22558	0.172
T-FHSS (ANT B)	2407.500	0.2677	0.22397	0.178
	2437.500	0.2582	0.22371	0.172
	2467.500	0.2561	0.22245	0.171

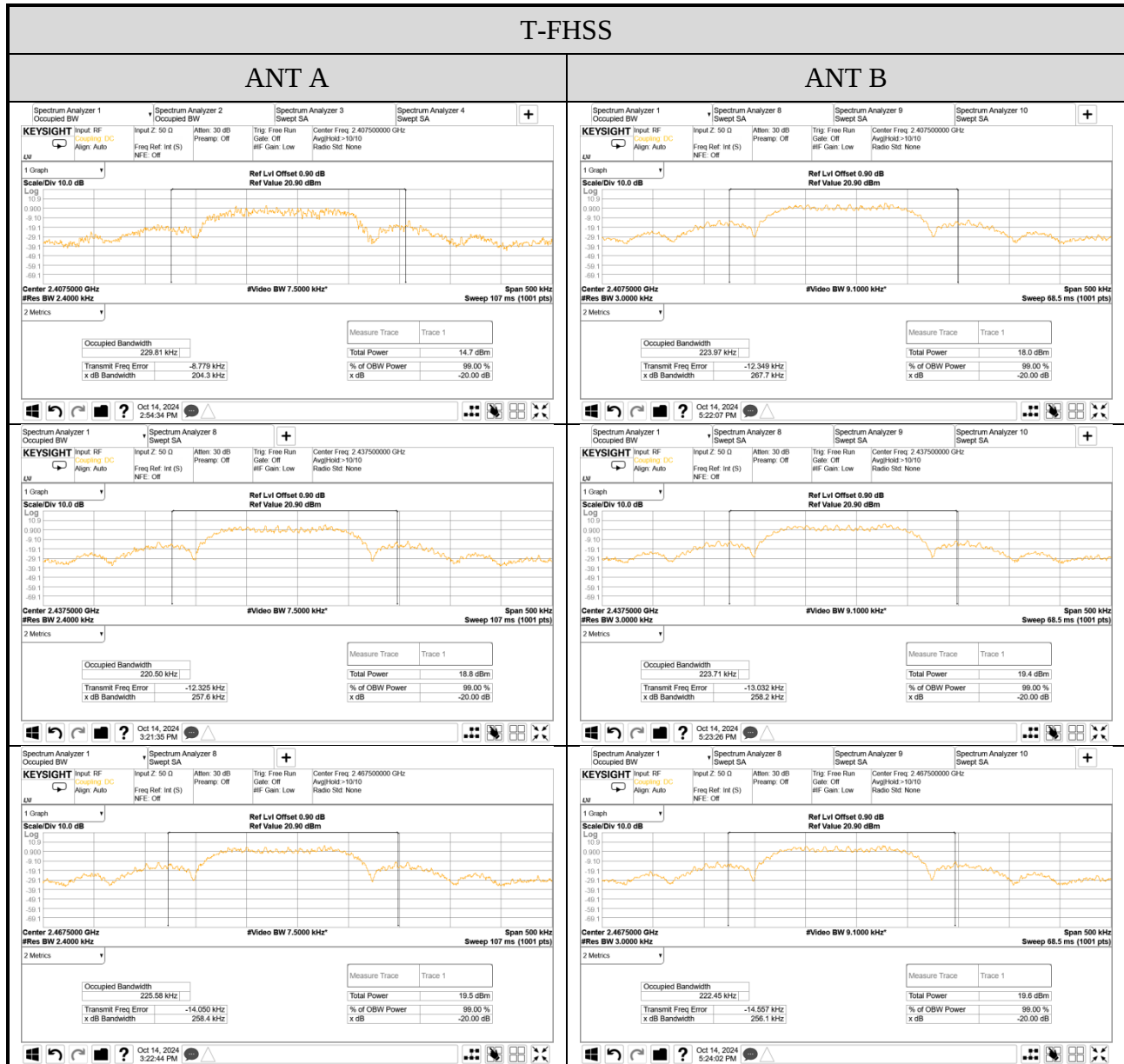
Remark: The maximum two-thirds of the 20dB bandwidth shall be at maximum 0.178MHz.

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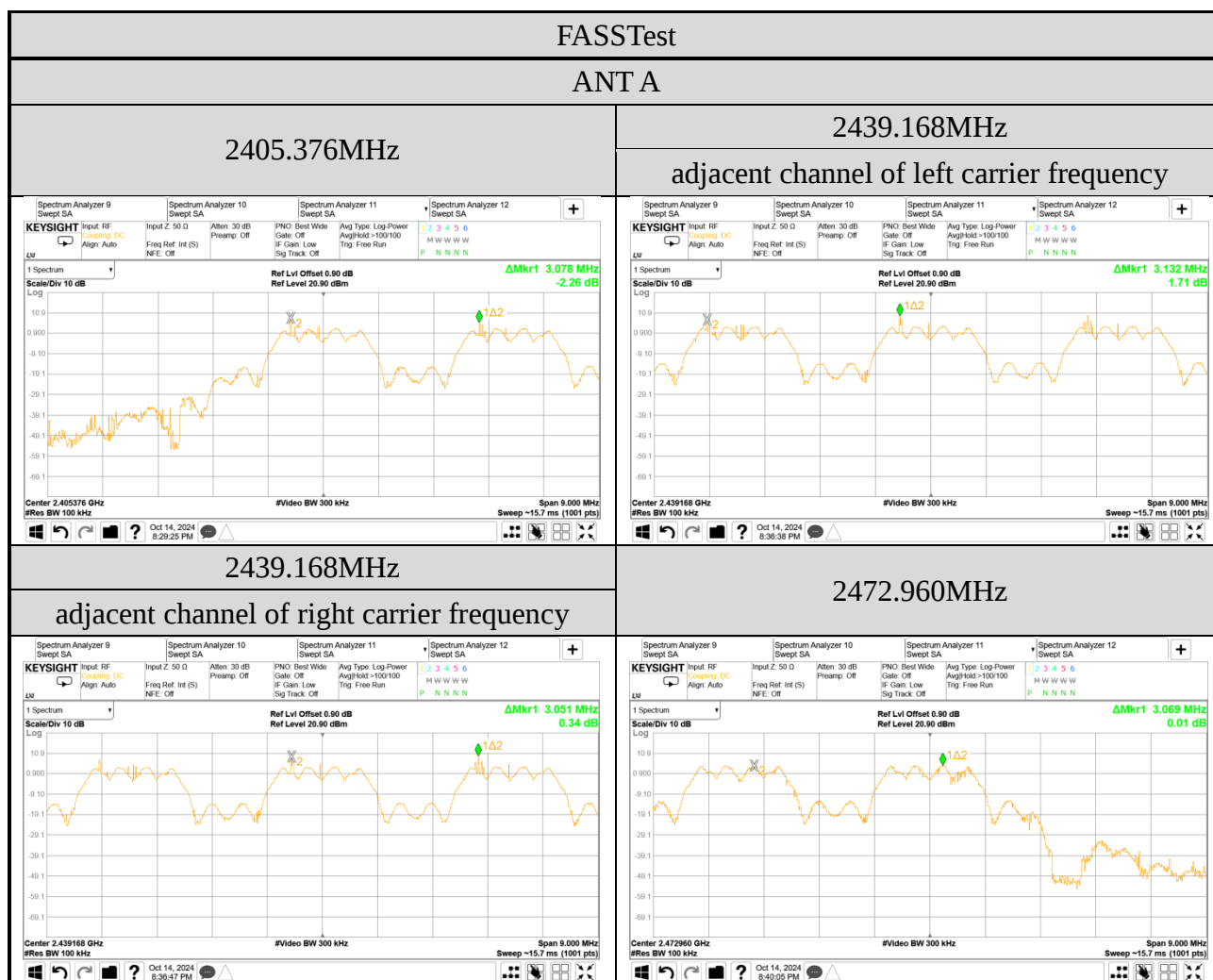
A.2.2 Measurement Plots





A.3 CARRIER FREQUENCY SEPARATION

Test Date	2024/10/14~18	Temp./Hum.	23°C/59~61%
Cable Loss	0.90 dB	Tested By	Brian Hsieh
Test Voltage	DC 6V (Via Battery)		



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