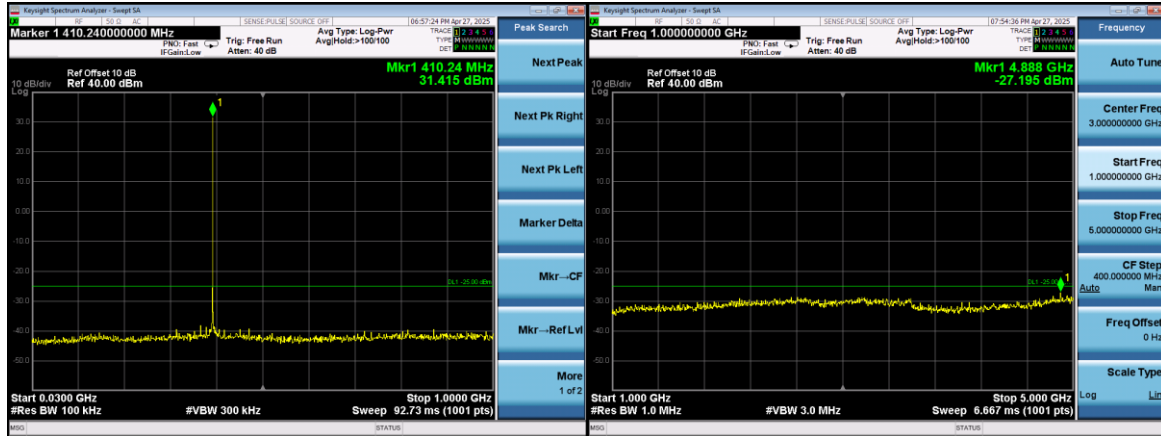


4FSK 6.25KHz Channel Spacing:

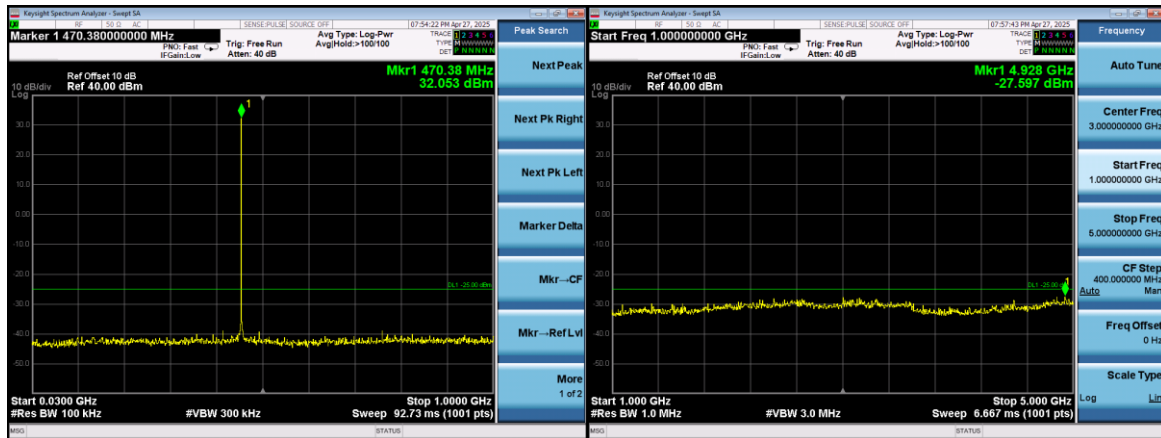
Low: 410.050MHz



Mid: 440.000MHz

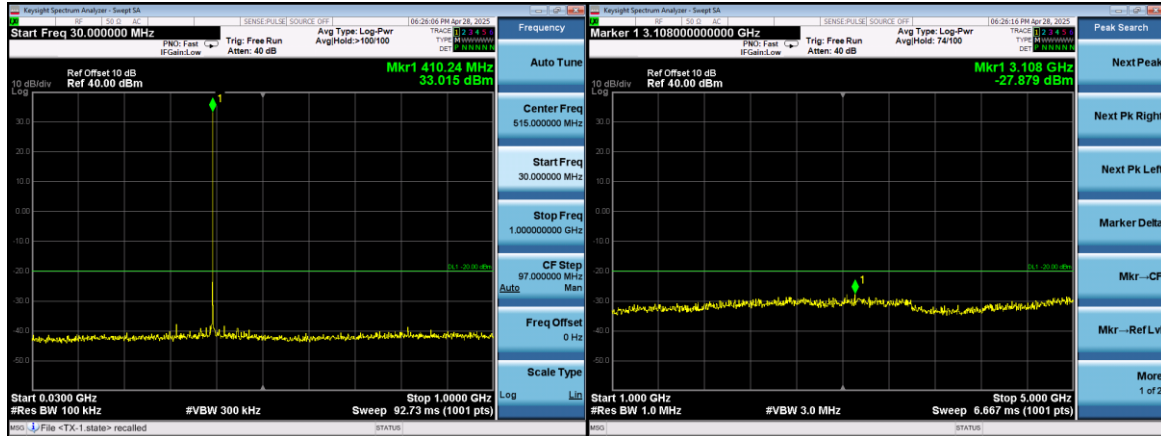


High: 469.950MHz

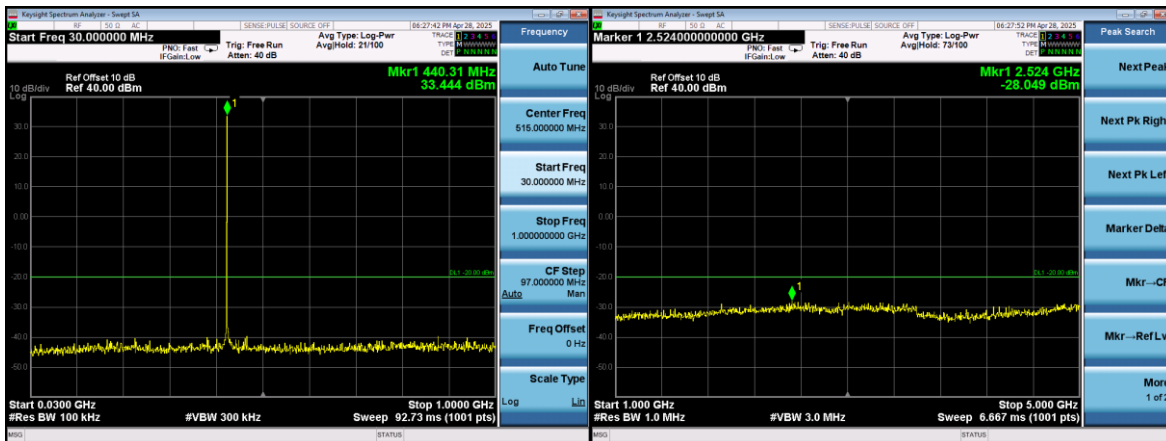


4FSK 12.5KHz Channel Spacing:

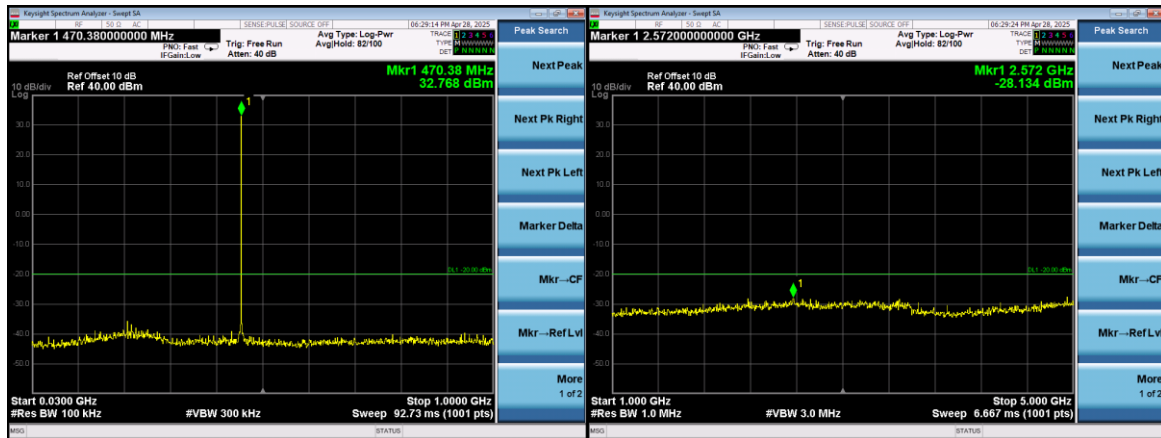
Low: 410.050MHz



Mid: 440.000MHz

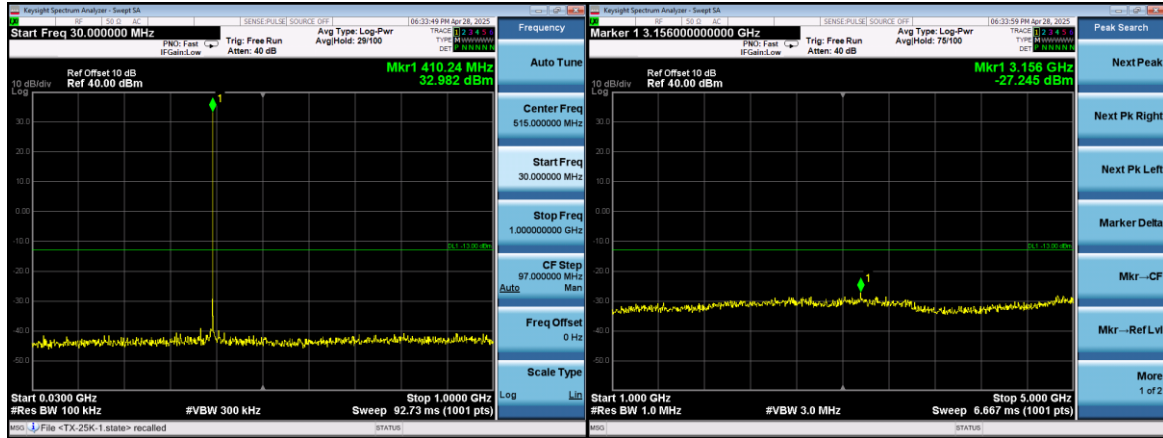


High: 469.950MHz

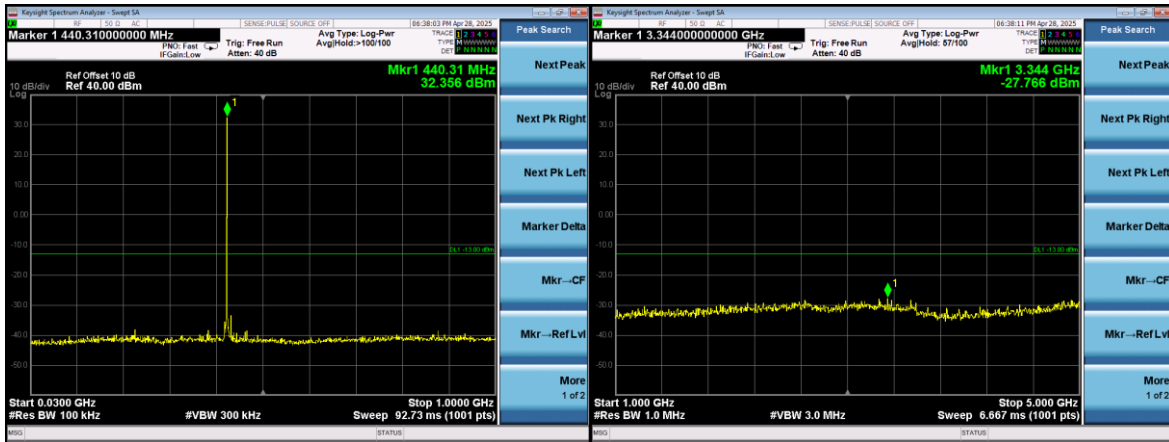


4FSK 25KHz Channel Spacing:

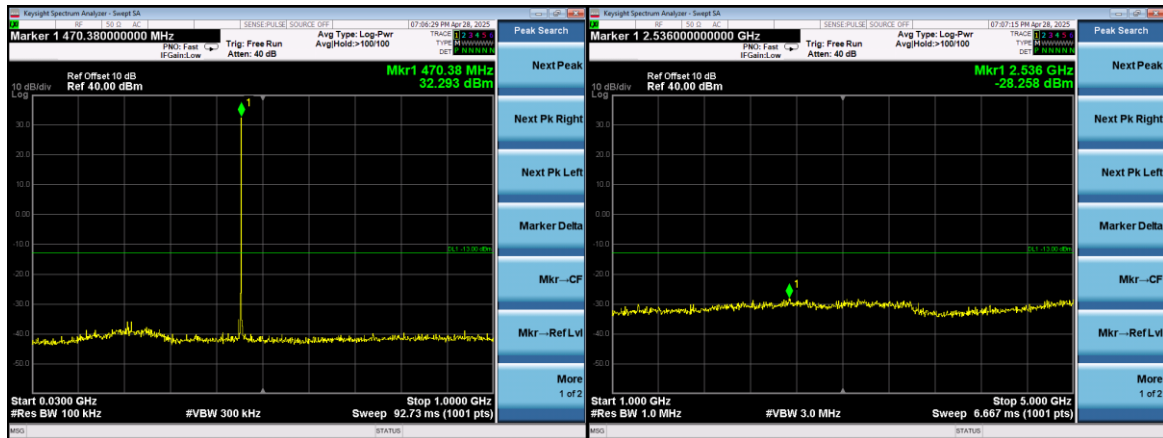
Low: 410.050MHz



Mid: 440.000MHz

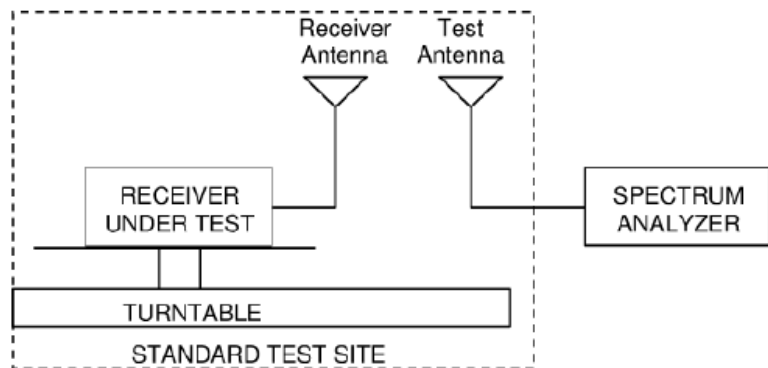


High: 469.950MHz



3.4. Radiated Spurious Emission

3.4.1. Test Specification

Test Requirement:	FCC Part 90.210															
Test Method:	FCC part 2.1051, ANSI C63.26-2015 Section 5.5															
Measurement Distance:	3 m															
Antenna Polarization:	Horizontal & Vertical															
Operation mode:	Refer to item 4.1															
Receiver Setup:	<table><tr><td>Frequency</td><td>RBW</td><td>VBW</td></tr><tr><td>9kHz- 150kHz</td><td>200Hz</td><td>1kHz</td></tr><tr><td>150kHz- 30MHz</td><td>9kHz</td><td>30kHz</td></tr><tr><td>30MHz-1GHz</td><td>100KHz</td><td>300KHz</td></tr><tr><td>Above 1GHz</td><td>1MHz</td><td>3MHz</td></tr></table>	Frequency	RBW	VBW	9kHz- 150kHz	200Hz	1kHz	150kHz- 30MHz	9kHz	30kHz	30MHz-1GHz	100KHz	300KHz	Above 1GHz	1MHz	3MHz
Frequency	RBW	VBW														
9kHz- 150kHz	200Hz	1kHz														
150kHz- 30MHz	9kHz	30kHz														
30MHz-1GHz	100KHz	300KHz														
Above 1GHz	1MHz	3MHz														
Limit:	For equipment using 25 kHz channel spacing, on any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth: At least $43 + 10\log (P)$ dB. For equipment using 12.5 kHz channel spacing, on any frequency removed from the center of The authorized bandwidth by a displacement frequency (f_d in kHz) of more than 12.5 kHz: At least $50 + 10 \log(P)$ dB or 70 dB, whichever is the lesser attenuation. For equipment using 6.25 kHz channel spacing, On any frequency removed from the center of the authorized bandwidth by more than 4.6 kHz: At least $55 + 10 \log (P)$ or 65 dB, whichever is the lesser attenuation.															
Test setup:	 The diagram illustrates the test setup within a 'STANDARD TEST SITE'. A 'RECEIVER UNDER TEST' is placed on a 'TURNTABLE'. A 'Receiver Antenna' is connected to the receiver, and a 'Test Antenna' is connected to a 'SPECTRUM ANALYZER'. The receiver and antennas are positioned at a distance of 3 meters from each other.															
Test Procedure:	The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load, which was also placed on the turntable. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT .The test was performed by placing the EUT on 3-orthogonal axis.															

	The frequency range up to teeth harmonic of the fundamental frequency was investigated. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution. Spurious emissions in dB =10, 1g (TXpwr in Watts/0.001)-the absolute level
Test results:	PASS

3.4.2.Test Data

GMSK:

Test Mode: Low: 410.050MHz, Channel Spacing 12.5KHz

Frequency (MHz)	Reading level (dBm)	Antenna Polarization	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
154.490	-89.708	V	0.24	31.35	-58.598	-20	-38.598
359.303	-95.564	V	0.26	31.34	-64.484	-20	-44.484
675.184	-95.151	V	0.42	31.24	-64.331	-20	-44.331
818.835	-93.032	V	0.58	30.71	-62.902	-20	-42.902
1229.695	-85.492	V	1.23	26.38	-60.342	-20	-40.342
3865.460	-81.571	V	1.68	25.47	-57.781	-20	-37.781
287.028	-96.841	H	0.43	31.24	-66.031	-20	-46.031
398.364	-93.650	H	0.45	30.68	-63.420	-20	-43.420
675.896	-95.836	H	0.64	30.85	-65.626	-20	-45.626
819.373	-98.820	H	0.79	31.12	-68.490	-20	-48.490
1228.639	-83.231	H	1.29	26.12	-58.401	-20	-38.401
3259.682	-83.431	H	1.62	25.41	-59.641	-20	-39.641

Test Mode: Mid: 440.000MHz, Channel Spacing 12.5KHz

Frequency (MHz)	Reading level (dBm)	Antenna Polarization	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
152.325	-96.951	V	0.24	31.35	-65.841	-20	-45.841
363.697	-98.527	V	0.26	31.34	-67.447	-20	-47.447
670.792	-99.217	V	0.42	31.24	-68.397	-20	-48.397
878.881	-91.973	V	0.58	30.71	-61.843	-20	-41.843
1322.970	-85.433	V	1.23	26.38	-60.283	-20	-40.283
3857.735	-79.680	V	1.68	25.47	-55.890	-20	-35.890
289.859	-101.516	H	0.43	31.24	-70.706	-20	-50.706
399.760	-99.148	H	0.45	30.68	-68.918	-20	-48.918
680.939	-97.514	H	0.64	30.85	-67.304	-20	-47.304
880.381	-102.453	H	0.79	31.12	-72.123	-20	-52.123
1320.976	-82.138	H	1.29	26.12	-57.308	-20	-37.308
3262.627	-84.563	H	1.62	25.41	-60.773	-20	-40.773

Test Mode: High: 469.950MHz, Channel Spacing 12.5KHz

Frequency (MHz)	Reading level (dBm)	Antenna Polarization	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
150.173	-93.104	V	0.24	31.35	-61.994	-20	-41.994
363.235	-94.437	V	0.26	31.34	-63.357	-20	-43.357
672.144	-98.986	V	0.42	31.24	-68.166	-20	-48.166
941.178	-96.133	V	0.58	30.71	-66.003	-20	-46.003
1410.726	-85.848	V	1.23	26.38	-60.698	-20	-40.698
3857.006	-81.785	V	1.68	25.47	-57.995	-20	-37.995
290.641	-95.201	H	0.43	31.24	-64.391	-20	-44.391
407.902	-93.802	H	0.45	30.68	-63.572	-20	-43.572
676.248	-98.060	H	0.64	30.85	-67.850	-20	-47.850
940.016	-96.957	H	0.79	31.12	-66.627	-20	-46.627
1411.873	-86.333	H	1.29	26.12	-61.503	-20	-41.503
3265.155	-81.962	H	1.62	25.41	-58.172	-20	-38.172

Test Mode: Low: 410.050MHz, Channel Spacing 25KHz

Frequency (MHz)	Reading level (dBm)	Antenna Polarization	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
149.038	-92.017	V	0.24	31.35	-60.907	-13	-47.907
360.781	-90.990	V	0.26	31.34	-59.910	-13	-46.910
671.701	-93.904	V	0.42	31.24	-63.084	-13	-50.084
821.239	-92.831	V	0.58	30.71	-62.701	-13	-49.701
1230.367	-84.744	V	1.23	26.38	-59.594	-13	-46.594
3857.946	-82.121	V	1.68	25.47	-58.331	-13	-45.331
287.359	-95.524	H	0.43	31.24	-64.714	-13	-51.714
400.389	-95.778	H	0.45	30.68	-65.548	-13	-52.548
676.377	-96.396	H	0.64	30.85	-66.186	-13	-53.186
823.394	-94.396	H	0.79	31.12	-64.066	-13	-51.066
1231.995	-85.429	H	1.29	26.12	-60.599	-13	-47.599
3261.501	-81.482	H	1.62	25.41	-57.692	-13	-44.692

Test Mode; Mid: 440.000MHz, Channel Spacing 25KHz

Frequency (MHz)	Reading level (dBm)	Antenna Polarization	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
157.301	-97.399	V	0.24	31.35	-66.289	-13	-53.289
359.656	-91.928	V	0.26	31.34	-60.848	-13	-47.848
669.802	-95.242	V	0.42	31.24	-64.422	-13	-51.422
881.482	-93.342	V	0.58	30.71	-63.212	-13	-50.212
1322.928	-84.625	V	1.23	26.38	-59.475	-13	-46.475
3861.592	-82.688	V	1.68	25.47	-58.898	-13	-45.898
283.839	-97.529	H	0.43	31.24	-66.719	-13	-53.719
407.124	-96.966	H	0.45	30.68	-66.736	-13	-53.736
681.536	-96.597	H	0.64	30.85	-66.387	-13	-53.387
879.106	-95.078	H	0.79	31.12	-64.748	-13	-51.748
1319.343	-83.893	H	1.29	26.12	-59.063	-13	-46.063
3260.177	-81.039	H	1.62	25.41	-57.249	-13	-42.260

Test Mode: High: 469.950MHz, Channel Spacing 25KHz

Frequency (MHz)	Reading level (dBm)	Antenna Polarization	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
153.567	-92.100	V	0.24	31.35	-60.990	-13	-47.990
363.564	-90.243	V	0.26	31.34	-59.163	-13	-46.163
666.625	-93.545	V	0.42	31.24	-62.725	-13	-49.725
936.572	-93.117	V	0.58	30.71	-62.987	-13	-49.987
1409.298	-78.903	V	1.23	26.38	-53.753	-13	-40.753
3856.309	-82.904	V	1.68	25.47	-59.114	-13	-46.114
288.661	-94.198	H	0.43	31.24	-63.388	-13	-50.388
398.248	-100.828	H	0.45	30.68	-70.598	-13	-57.598
676.088	-94.382	H	0.64	30.85	-64.172	-13	-51.172
935.588	-101.086	H	0.79	31.12	-70.756	-13	-57.756
1406.474	-84.198	H	1.29	26.12	-59.368	-13	-46.368
3262.953	-76.990	H	1.62	25.41	-53.200	-13	-40.200

4FSK:

Test Mode: Low: 410.050MHz, Channel Spacing 6.25KHz

Frequency (MHz)	Reading level (dBm)	Antenna Polarization	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
153.734	-92.600	V	0.24	31.35	-61.490	-25	-41.490
360.154	-92.306	V	0.26	31.34	-61.226	-25	-41.226
673.026	-92.914	V	0.42	31.24	-62.094	-25	-42.094
819.500	-96.732	V	0.58	30.71	-66.602	-25	-46.602
1232.002	-85.518	V	1.23	26.38	-60.368	-25	-40.368
3865.756	-84.033	V	1.68	25.47	-60.243	-25	-40.243
284.795	-92.178	H	0.43	31.24	-61.368	-25	-41.368
398.314	-95.051	H	0.45	30.68	-64.821	-25	-44.821
677.407	-97.438	H	0.64	30.85	-67.228	-25	-47.228
821.336	-98.728	H	0.79	31.12	-68.398	-25	-48.398
1230.445	-83.923	H	1.29	26.12	-59.093	-25	-39.093
3259.880	-80.031	H	1.62	25.41	-56.241	-25	-36.241

Test Mode: Mid: 440.000MHz, Channel Spacing 6.25KHz

Frequency (MHz)	Reading level (dBm)	Antenna Polarization	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
156.302	-96.763	V	0.24	31.35	-65.653	-25	-45.653
362.043	-92.693	V	0.26	31.34	-61.613	-25	-41.613
670.476	-98.540	V	0.42	31.24	-67.720	-25	-47.720
881.701	-93.078	V	0.58	30.71	-62.948	-25	-42.948
1317.063	-83.994	V	1.23	26.38	-58.844	-25	-38.844
3858.394	-81.277	V	1.68	25.47	-57.487	-25	-37.487
293.663	-94.639	H	0.43	31.24	-63.829	-25	-43.829
397.934	-94.131	H	0.45	30.68	-63.901	-25	-43.901
686.018	-94.658	H	0.64	30.85	-64.448	-25	-44.448
877.548	-99.687	H	0.79	31.12	-69.357	-25	-49.357
1321.266	-82.191	H	1.29	26.12	-57.361	-25	-37.361
3262.627	-78.891	H	1.62	25.41	-55.101	-25	-35.101

Test Mode: High: 469.950MHz, Channel Spacing 6.25KHz

Frequency (MHz)	Reading level (dBm)	Antenna Polarization	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
151.376	-92.687	V	0.24	31.35	-61.577	-25	-41.577
363.361	-95.059	V	0.26	31.34	-63.979	-25	-43.979
672.050	-96.312	V	0.42	31.24	-65.492	-25	-45.492
938.705	-97.640	V	0.58	30.71	-67.510	-25	-47.510
1408.156	-87.595	V	1.23	26.38	-62.445	-25	-42.445
3859.866	-80.443	V	1.68	25.47	-56.653	-25	-36.653
292.393	-96.072	H	0.43	31.24	-65.262	-25	-45.262
404.087	-93.134	H	0.45	30.68	-62.904	-25	-42.904
678.743	-96.663	H	0.64	30.85	-66.453	-25	-46.453
938.133	-97.266	H	0.79	31.12	-66.936	-25	-46.936
1410.859	-86.578	H	1.29	26.12	-61.748	-25	-41.748
3265.944	-82.735	H	1.62	25.41	-58.945	-25	-38.945

Test Mode: Low: 410.050MHz, Channel Spacing 12.5KHz

Frequency (MHz)	Reading level (dBm)	Antenna Polarization	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
150.819	-93.326	V	0.24	31.35	-62.216	-20	-42.216
359.202	-91.213	V	0.26	31.34	-60.133	-20	-40.133
672.367	-94.354	V	0.42	31.24	-63.534	-20	-43.534
818.575	-93.493	V	0.58	30.71	-63.363	-20	-43.363
1228.996	-83.135	V	1.23	26.38	-57.985	-20	-37.985
3862.282	-82.370	V	1.68	25.47	-58.580	-20	-38.580
283.959	-97.505	H	0.43	31.24	-66.695	-20	-46.695
397.580	-92.128	H	0.45	30.68	-61.898	-20	-41.898
675.062	-93.510	H	0.64	30.85	-63.300	-20	-43.300
818.329	-94.745	H	0.79	31.12	-64.415	-20	-44.415
1231.418	-85.707	H	1.29	26.12	-60.877	-20	-40.877
3256.770	-78.494	H	1.62	25.41	-54.704	-20	-34.704

Test Mode; Mid: 440.000MHz, Channel Spacing 12.5KHz

Frequency (MHz)	Reading level (dBm)	Antenna Polarization	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
157.574	-91.283	V	0.24	31.35	-60.173	-20	-40.173
363.208	-94.471	V	0.26	31.34	-63.391	-20	-43.391
668.762	-94.027	V	0.42	31.24	-63.207	-20	-43.207
881.561	-96.571	V	0.58	30.71	-66.441	-20	-46.441
1318.280	-82.695	V	1.23	26.38	-57.545	-20	-37.545
3858.700	-81.250	V	1.68	25.47	-57.460	-20	-37.460
292.730	-94.064	H	0.43	31.24	-63.254	-20	-43.254
398.475	-95.481	H	0.45	30.68	-65.251	-20	-45.251
681.566	-100.909	H	0.64	30.85	-70.699	-20	-50.699
881.672	-99.439	H	0.79	31.12	-69.109	-20	-49.109
1322.343	-86.055	H	1.29	26.12	-61.225	-20	-41.225
3262.627	-80.848	H	1.62	25.41	-57.058	-20	-37.058

Test Mode: High: 469.950MHz, Channel Spacing 12.5KHz

Frequency (MHz)	Reading level (dBm)	Antenna Polarization	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
149.882	-95.254	V	0.24	31.35	-64.144	-20	-44.144
363.636	-95.287	V	0.26	31.34	-64.207	-20	-44.207
672.812	-98.016	V	0.42	31.24	-67.196	-20	-47.196
941.171	-96.233	V	0.58	30.71	-66.103	-20	-46.103
1408.655	-84.662	V	1.23	26.38	-59.512	-20	-39.512
3858.644	-81.724	V	1.68	25.47	-57.934	-20	-37.934
292.268	-95.718	H	0.43	31.24	-64.908	-20	-44.908
406.632	-93.696	H	0.45	30.68	-63.466	-20	-43.466
676.441	-97.781	H	0.64	30.85	-67.571	-20	-47.571
942.826	-96.841	H	0.79	31.12	-66.511	-20	-46.511
1408.362	-84.161	H	1.29	26.12	-59.331	-20	-39.331
3264.354	-81.061	H	1.62	25.41	-57.271	-20	-37.271

Test Mode: Low: 410.050MHz, Channel Spacing 25KHz

Frequency (MHz)	Reading level (dBm)	Antenna Polarization	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
148.799	-96.800	V	0.24	31.35	-65.690	-13	-52.690
358.867	-90.529	V	0.26	31.34	-59.449	-13	-46.449
674.127	-93.075	V	0.42	31.24	-62.255	-13	-49.255
822.505	-92.942	V	0.58	30.71	-62.812	-13	-49.812
1232.003	-80.527	V	1.23	26.38	-55.377	-13	-42.377
3859.453	-82.606	V	1.68	25.47	-58.816	-13	-45.816
287.344	-92.964	H	0.43	31.24	-62.154	-13	-49.154
404.869	-97.502	H	0.45	30.68	-67.272	-13	-54.272
678.683	-96.428	H	0.64	30.85	-66.218	-13	-53.218
820.300	-93.405	H	0.79	31.12	-63.075	-13	-50.075
1231.847	-83.445	H	1.29	26.12	-58.615	-13	-45.615
3258.771	-81.708	H	1.62	25.41	-57.918	-13	-44.918

Test Mode; Mid: 440.000MHz, Channel Spacing 25KHz

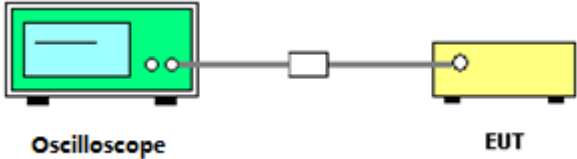
Frequency (MHz)	Reading level (dBm)	Antenna Polarization	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
160.161	-96.862	V	0.24	31.35	-65.752	-13	-52.752
360.066	-93.541	V	0.26	31.34	-62.461	-13	-49.461
673.430	-96.312	V	0.42	31.24	-65.492	-13	-52.492
879.353	-95.519	V	0.58	30.71	-65.389	-13	-52.389
1318.210	-84.419	V	1.23	26.38	-59.269	-13	-46.269
3861.515	-82.143	V	1.68	25.47	-58.353	-13	-45.353
286.886	-94.784	H	0.43	31.24	-63.974	-13	-50.974
405.898	-99.257	H	0.45	30.68	-69.027	-13	-56.027
682.111	-98.482	H	0.64	30.85	-68.272	-13	-55.272
880.557	-94.094	H	0.79	31.12	-63.764	-13	-50.764
1322.314	-83.064	H	1.29	26.12	-58.234	-13	-45.234
3262.779	-80.712	H	1.62	25.41	-56.922	-13	-42.260

Test Mode: High: 469.950MHz, Channel Spacing 25KHz

Frequency (MHz)	Reading level (dBm)	Antenna Polarization	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
154.653	-92.795	V	0.24	31.35	-61.685	-13	-48.685
360.577	-91.631	V	0.26	31.34	-60.551	-13	-47.551
669.537	-91.879	V	0.42	31.24	-61.059	-13	-48.059
936.477	-95.178	V	0.58	30.71	-65.048	-13	-52.048
1408.666	-79.966	V	1.23	26.38	-54.816	-13	-41.816
3858.561	-80.190	V	1.68	25.47	-56.400	-13	-43.400
287.087	-92.847	H	0.43	31.24	-62.037	-13	-49.037
400.569	-94.980	H	0.45	30.68	-64.750	-13	-51.750
678.441	-96.237	H	0.64	30.85	-66.027	-13	-53.027
935.620	-95.341	H	0.79	31.12	-65.011	-13	-52.011
1407.876	-86.837	H	1.29	26.12	-62.007	-13	-49.007
3264.372	-75.999	H	1.62	25.41	-52.209	-13	-39.209

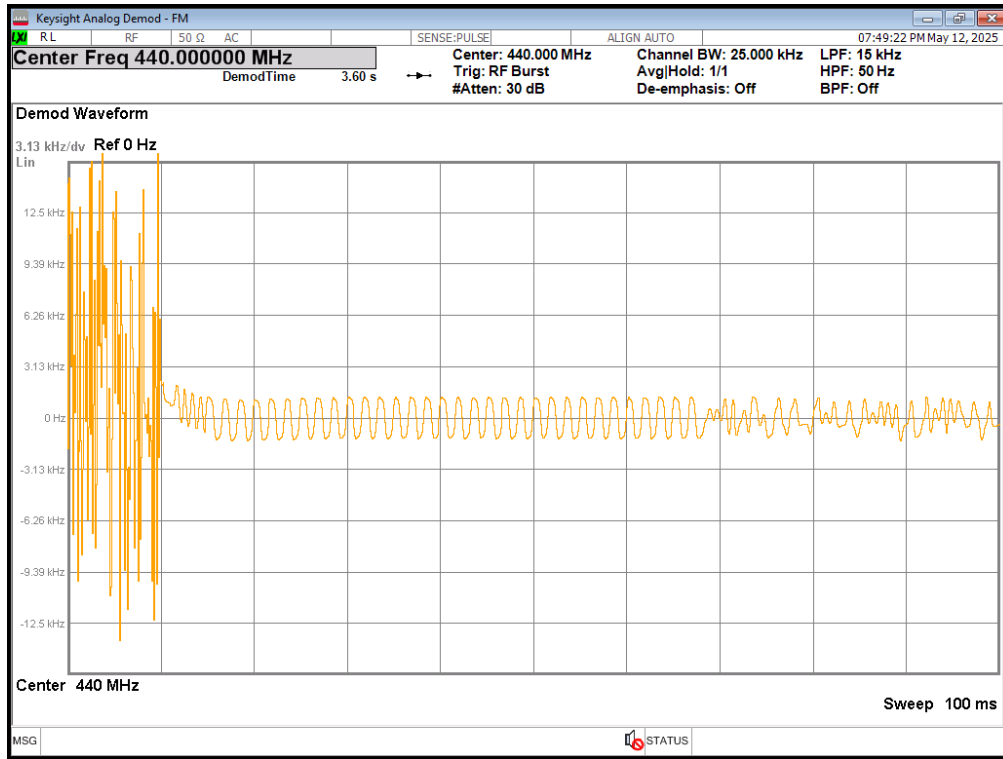
3.5. Transient Frequency Behavior

3.5.1. Test Specification

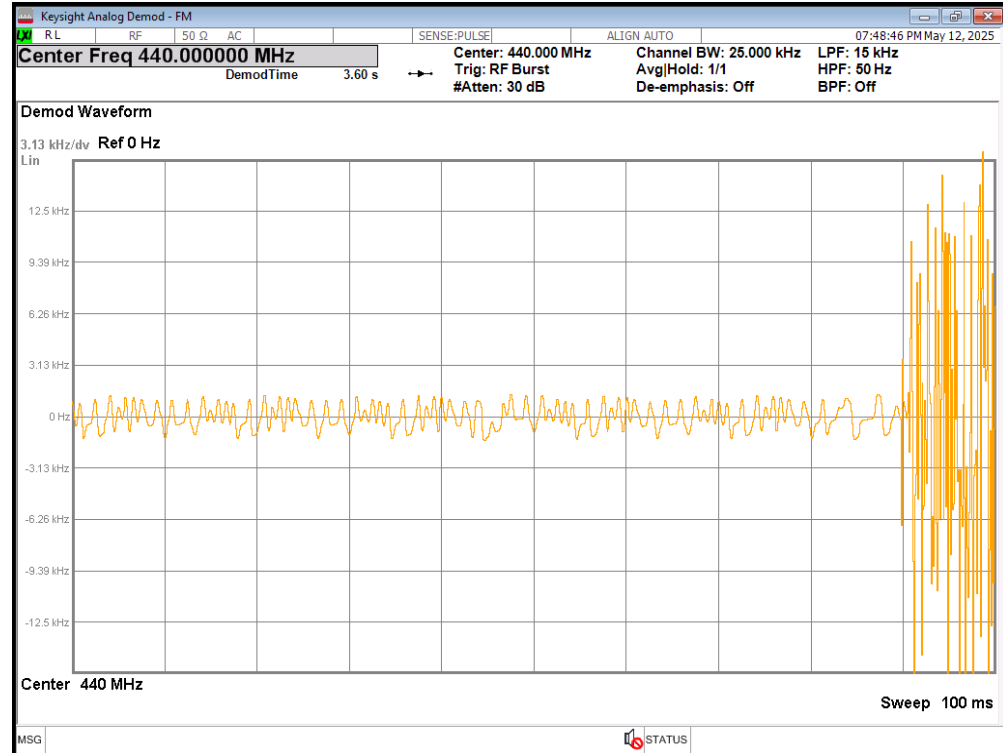
Test Requirement:	FCC Part 90.214				
Test Setup:	 Oscilloscope EUT				
Test Limit	Channel Bandwidth (kHz)	Time Intervals (Notes 1, 2)	Maximum Frequency Difference (kHz)	Transient Duration Limit (ms)	
				138-174 MHz	406.1-512 MHz
25	t ₁		±25	5	10
		t ₂	±12.5	20	25
		t ₃	±25	5	10
	12.5	t ₁	±12.5	5	10
		t ₂	±6.25	20	25
		t ₃	±12.5	5	10
	6.25	t ₁	±6.25	5	10
		t ₂	±3.125	20	25
		t ₃	±6.25	5	10
Test Procedure:	The EUT was set in the climate chamber and connected to an external DC power supply and AC power supply. The RF output was directly connected to Oscilloscope. The coupling loss of the additional cables was recorded and taken in account for all the measurements. The result was recorded.				
Test Result:	PASS				

3.5.2. Test Data

Test Plots for channel spacing 25KHz, EUT power setting: Maximum.
Power On



Power Off



Remark: Only list the worst data for channel spacing 25KHz, modulation GMSK.

3.6. Behavior Frequency Stability

3.6.1. Test Specification

Test Requirement:	FCC Part 90.213
Test Method:	FCC part 2.1055, ANSI C63.26-2015 Section 5.6
Test Setup:	<pre> graph LR Laptop[Laptop] --- EUT[Equipment Under Test] EUT --- ACDC[AC/DC Adapter] EUT --- Att[Attenuator(s)] Att --- MC[Mini-Circuit Combiner] MC --- RFCT[RF Communication Test Set] MC --- MA[Modulation Analyzer] MA --- RF[RF Detector] RF --- HPO[Hewlett Packard Infinium Digitizing Oscilloscope] </pre>
Test Procedure:	Method of Measurement: After temperature stabilization (approx. 20 min for each stage), the frequency for the lower, the middle and the highest frequency range was recorded. For Frequency stability Vs. Voltage the EUT was connected to a DC power supply or AC power supply and the voltage was adjusted in the required ranges.
Test Result:	PASS

3.6.2. Test Data

Conclusion: PASS			
Mode	Voltage (V)	Frequency error (Hz)	frequency error (ppm)
Middle Channel 6.25KHz Channel Spacing	10	17.48	0.040
	11	-7.85	-0.018
	12	24.69	0.056
	13	9.83	0.022
	14	11.19	0.025
	15	19.17	0.044
Limit	1ppm		
Middle Channel 12.5KHz Channel Spacing	10	2.13	0.005
	11	21.89	0.050
	12	25.21	0.057
	13	-2.63	-0.006
	14	-5.28	-0.012
	15	-2.65	-0.006
Limit	2.5ppm		
Middle Channel 25KHz Channel Spacing	10	14.50	0.033
	11	25.11	0.057
	12	12.21	0.028
	13	13.22	0.030
	14	-1.19	-0.003
	15	11.53	0.026
Limit	5ppm		

Mode	Temperature (°C)	Frequency error (Hz)	frequency error (ppm)
Middle Channel 6.25KHz Channel Spacing	-30	-0.74	-0.002
	-20	3.67	0.008
	-10	13.01	0.030
	0	14.48	0.033
	10	12.11	0.028
	20	23.05	0.052
	30	7.49	0.017
	40	9.39	0.021
	50	26.22	0.060
Limit	1ppm		
Middle Channel 12.5KHz Channel Spacing	-30	-0.42	-0.001
	-20	-2.01	-0.005
	-10	-9.52	-0.022
	0	14.83	0.034
	10	27.12	0.062
	20	18.65	0.042
	30	28.44	0.065
	40	24.56	0.056
	50	11.64	0.026
Limit	2.5ppm		
Middle Channel 25KHz Channel Spacing	-30	1.94	0.004
	-20	12.96	0.029
	-10	17.42	0.040
	0	16.35	0.037
	10	-9.56	-0.022
	20	-2.67	-0.006
	30	23.65	0.054
	40	21.81	0.050
	50	11.59	0.026
Limit	5ppm		

3.7. Modulation Characteristic

Test Requirement:	FCC Part 90.207
Test Result:	According to FCC § 2.1047(d), Part 22, 74, 90 there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

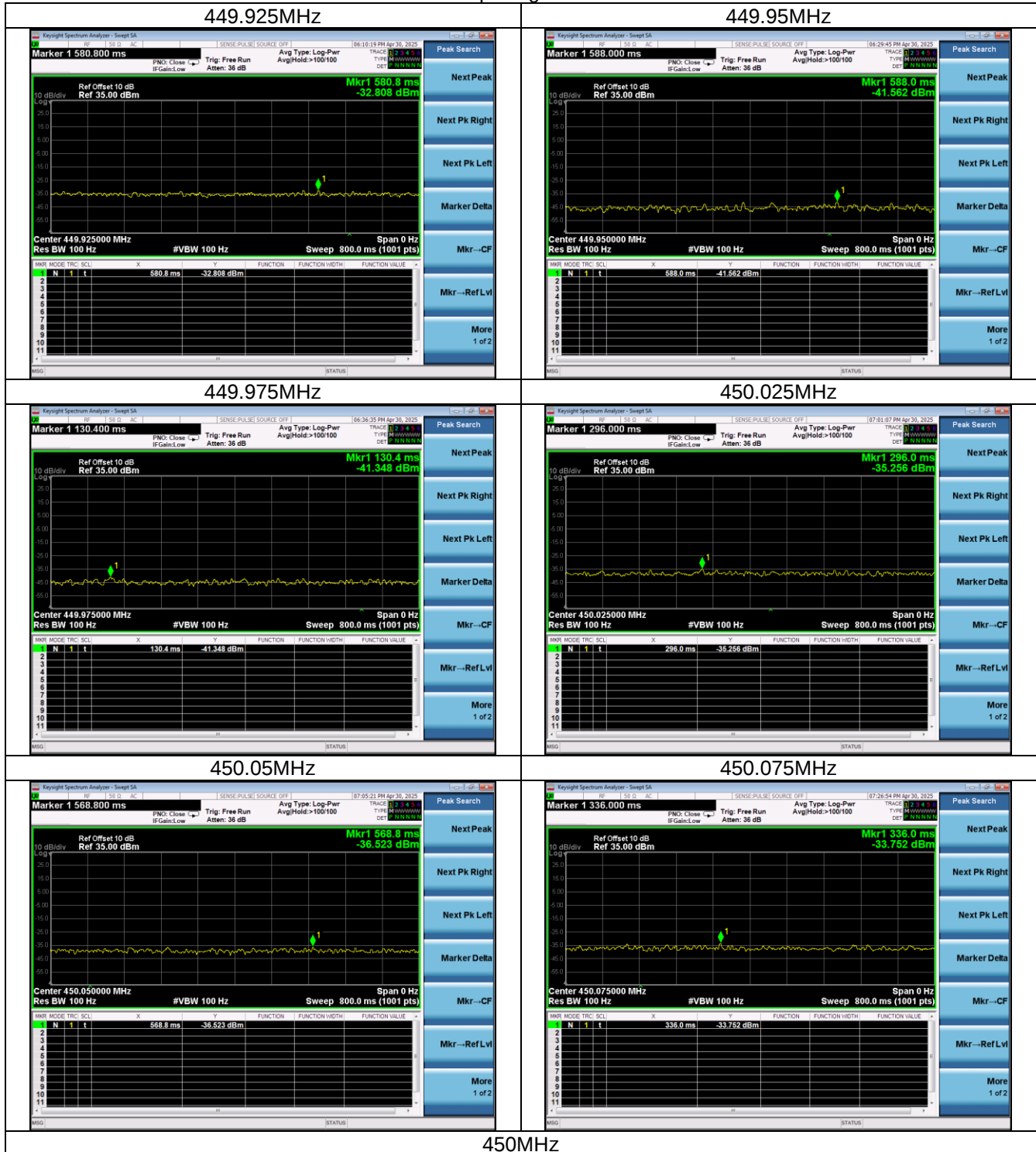
3.8. Adjacent Channel Power

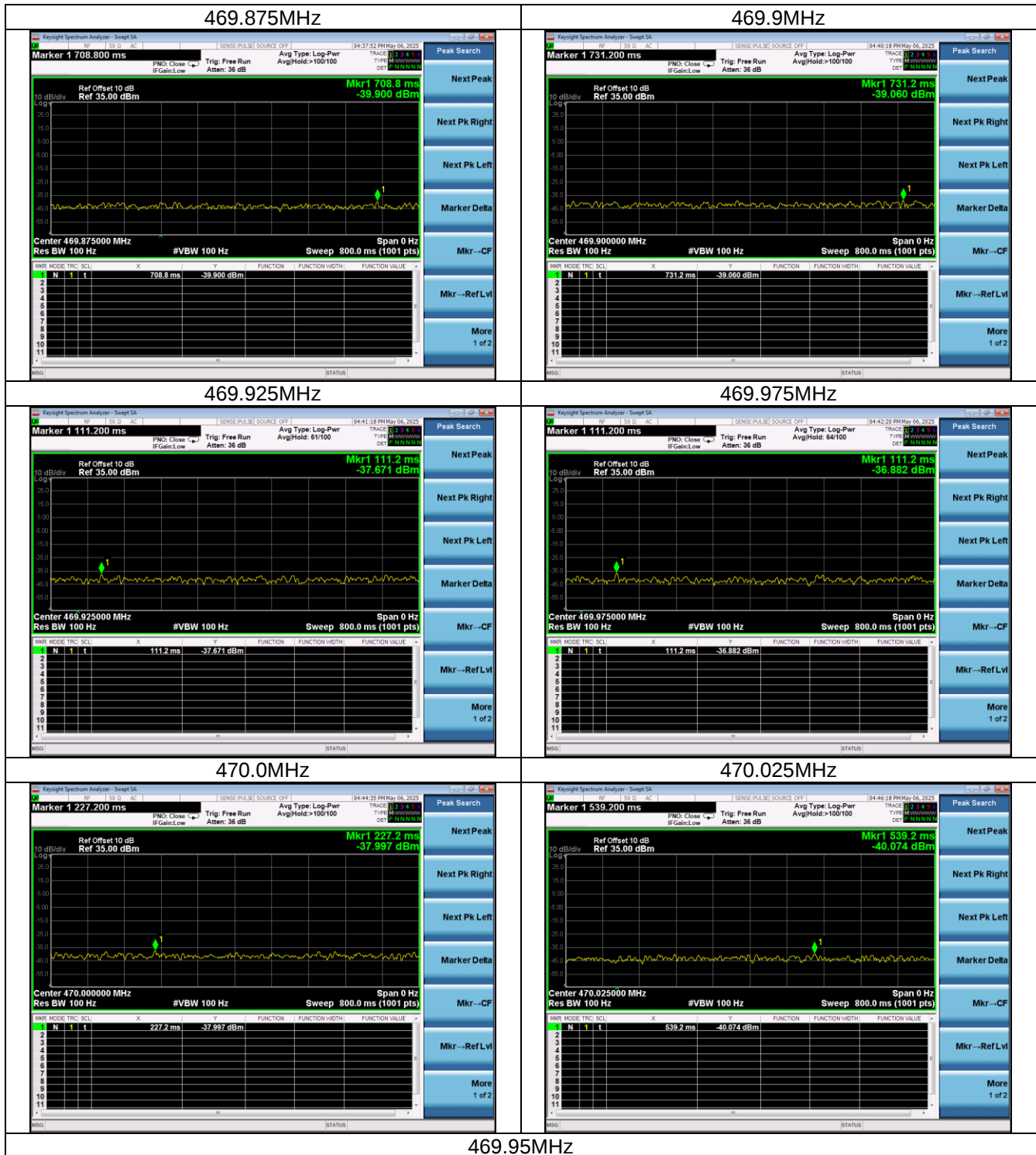
Test Requirement:	FCC Part 90.221												
Test Setup:	 Spectrum Analyzer EUT												
Test Limit:	Maximum adjacent power levels for frequencies in the 450–470 MHz band, no need compliance with below -36dBm: <table><tr><th>Frequency offset</th><th>Maximum ACP (dBc) for devices 1 watt and less</th><th>Maximum ACP (dBc) for devices above 1 watt</th></tr><tr><td>25 kHz</td><td>– 55 dBc</td><td>– 60 dBc</td></tr><tr><td>50 kHz</td><td>– 70 dBc</td><td>– 70 dBc</td></tr><tr><td>75 kHz</td><td>– 70 dBc</td><td>– 70 dBc</td></tr></table>	Frequency offset	Maximum ACP (dBc) for devices 1 watt and less	Maximum ACP (dBc) for devices above 1 watt	25 kHz	– 55 dBc	– 60 dBc	50 kHz	– 70 dBc	– 70 dBc	75 kHz	– 70 dBc	– 70 dBc
Frequency offset	Maximum ACP (dBc) for devices 1 watt and less	Maximum ACP (dBc) for devices above 1 watt											
25 kHz	– 55 dBc	– 60 dBc											
50 kHz	– 70 dBc	– 70 dBc											
75 kHz	– 70 dBc	– 70 dBc											
Test method:	The resolution bandwidth of the spectrum analyzer was set at 100 Hz and the spectrum was recorded in the Frequency band 0Kz from the wanted frequency												
Test result:	Pass.												

GMSK 25KHz spacing 450MHz-470MHz

Carrier frequency (MHz)	Test Frequency (MHz)	Test Value (dBm)	Limit (dBm)	Result
450.000	449.925	-32.808	44-70=-26	PASS
	449.95	-41.562	44-70=-26	PASS
	449.975	-41.348	44-60=-16	PASS
	450.025	-35.256	44-60=-16	PASS
	450.05	-36.523	44-70=-26	PASS
	450.075	-33.752	44-70=-26	PASS
469.950	469.875	-39.900	44-70=-26	PASS
	469.900	-39.060	44-70=-26	PASS
	469.925	-37.671	44-60=-16	PASS
	469.975	-36.882	44-60=-16	PASS
	470.000	-37.997	44-70=-26	PASS
	470.025	-40.074	44-70=-26	PASS

GMSK 25KHz spacing 450MHz-470MHz

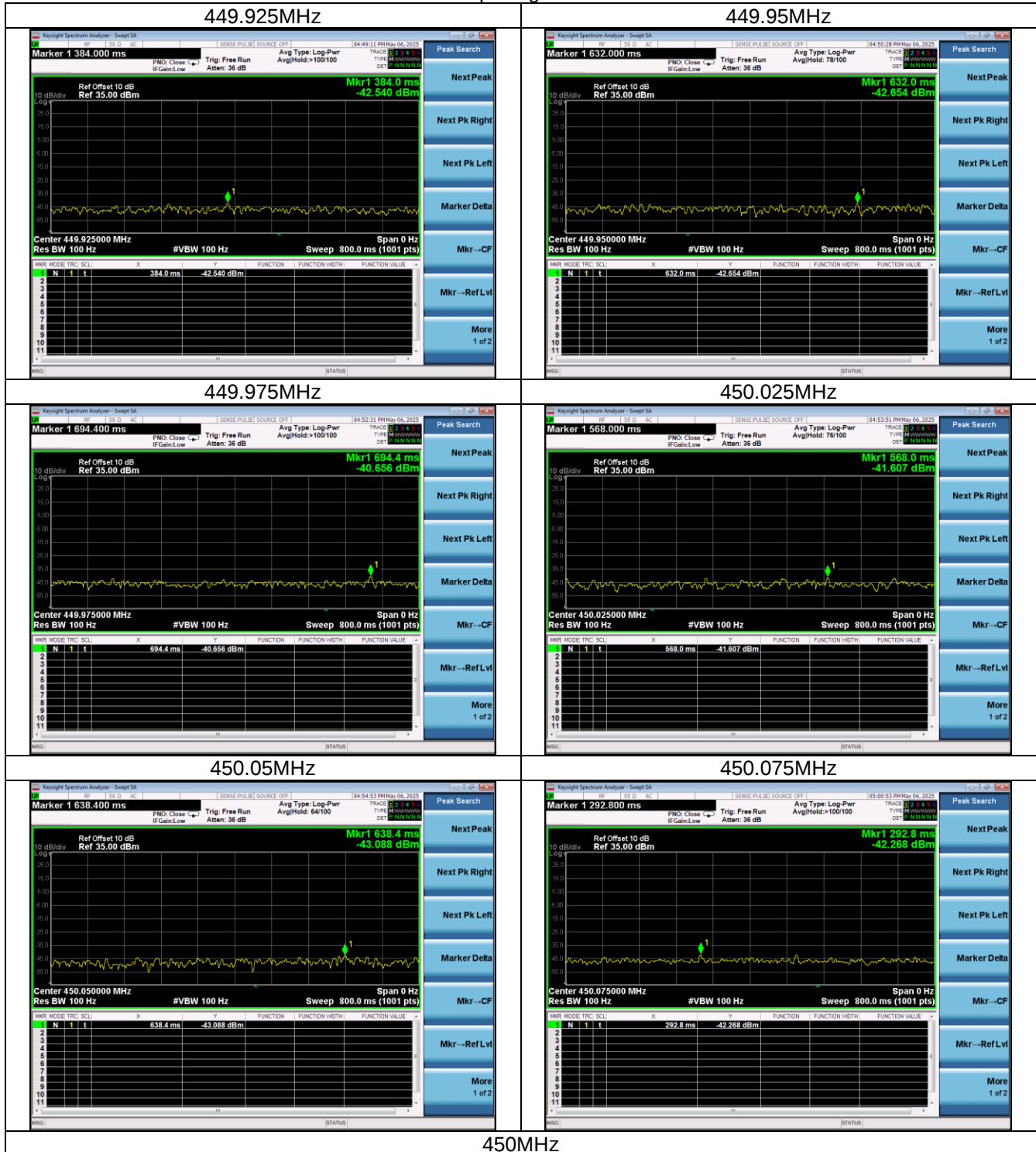




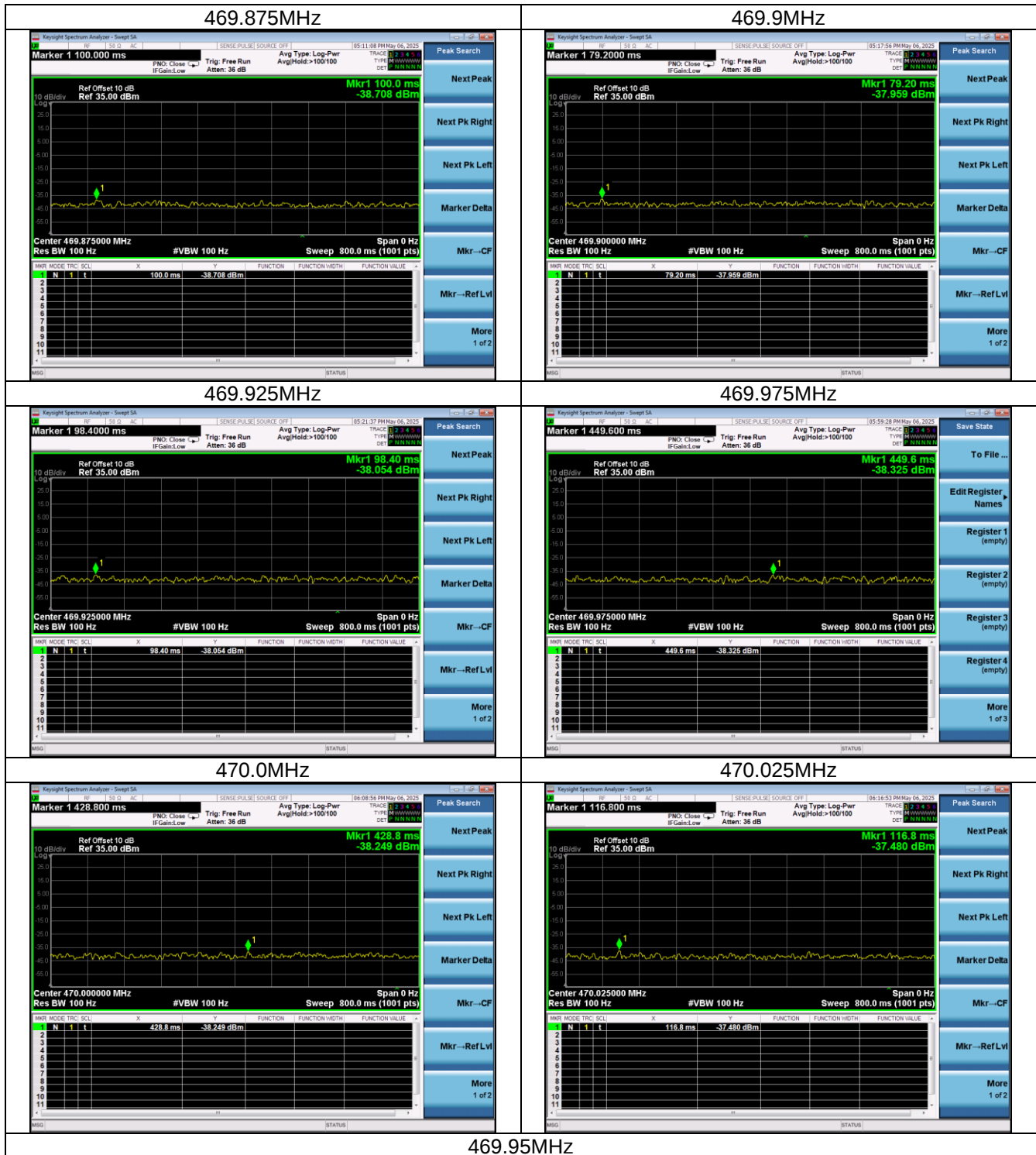
4FSK 25KHz spacing 450MHz-470MHz

Carrier frequency (MHz)	Test Frequency (MHz)	Test Value (dBm)	Limit (dBm)	Result
450.000	449.925	-42.540	44-70=-26	PASS
	449.95	-42.654	44-70=-26	PASS
	449.975	-40.656	44-60=-16	PASS
	450.025	-41.607	44-60=-16	PASS
	450.05	-43.088	44-70=-26	PASS
	450.075	-42.268	44-70=-26	PASS
469.950	469.875	-38.708	44-70=-26	PASS
	469.900	-37.959	44-70=-26	PASS
	469.925	-38.054	44-60=-16	PASS
	469.975	-38.325	44-60=-16	PASS
	470.000	-38.249	44-70=-26	PASS
	470.025	-37.480	44-70=-26	PASS

GMSK 25KHz spacing 450MHz-470MHz

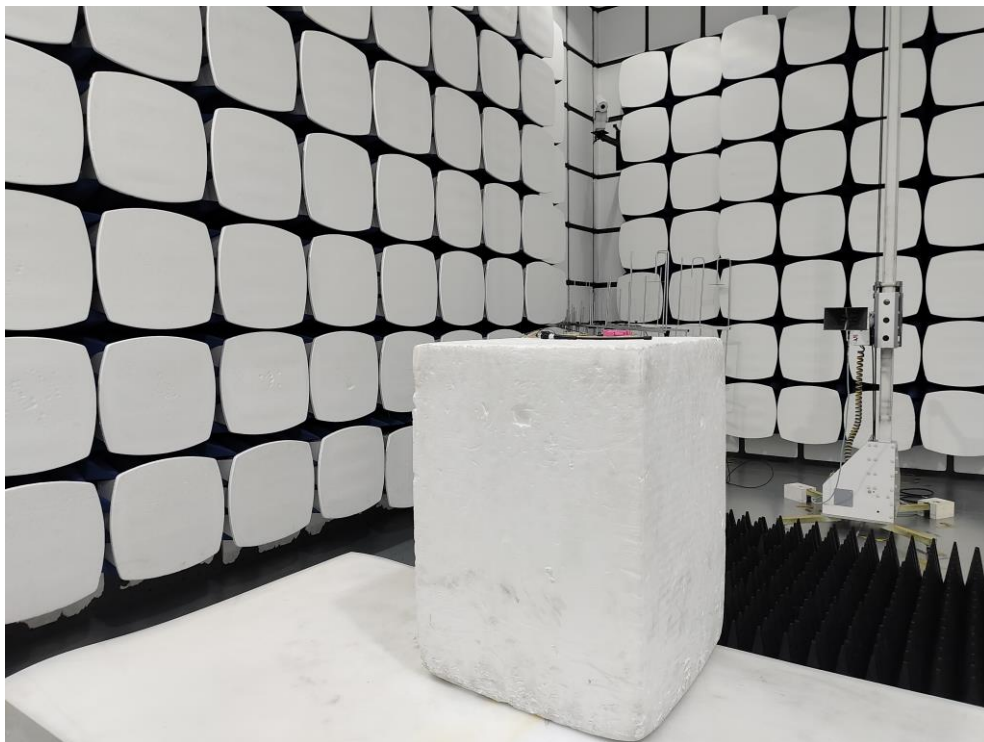
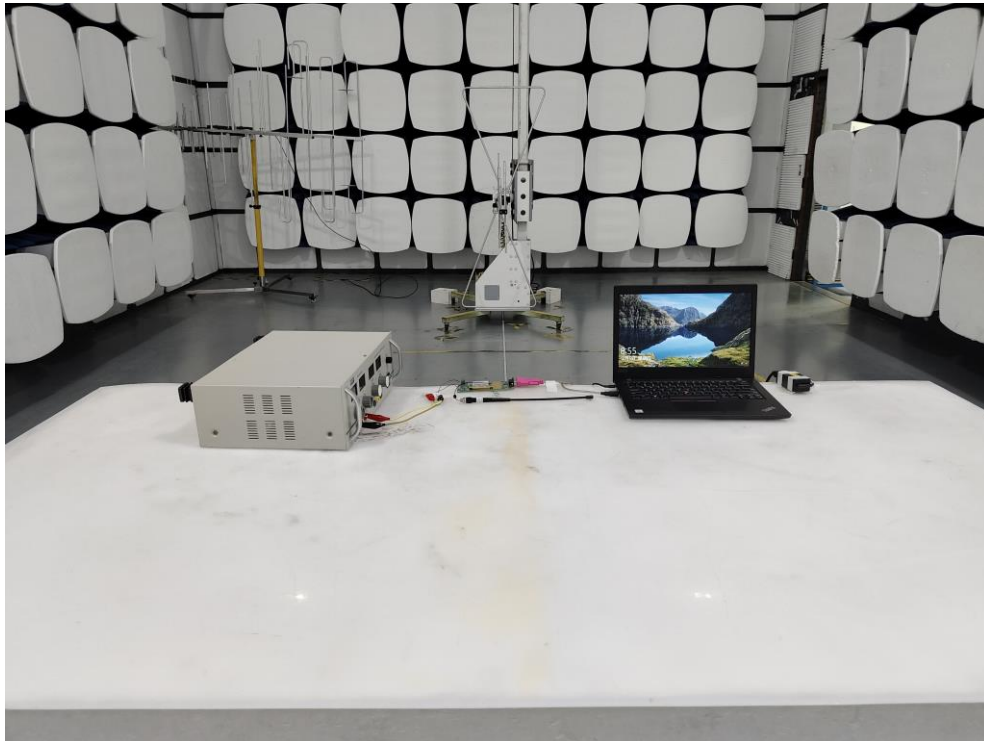


450MHz



4. Test Setup Photo

4.1. Photos of Radiated Emission



5. Photos of EUT

