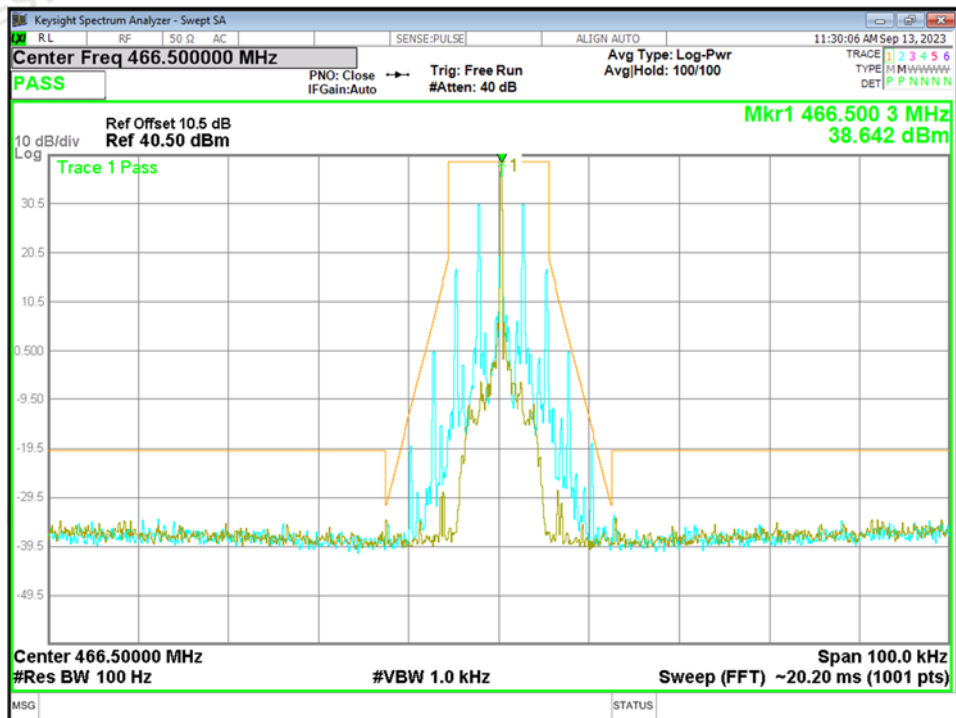
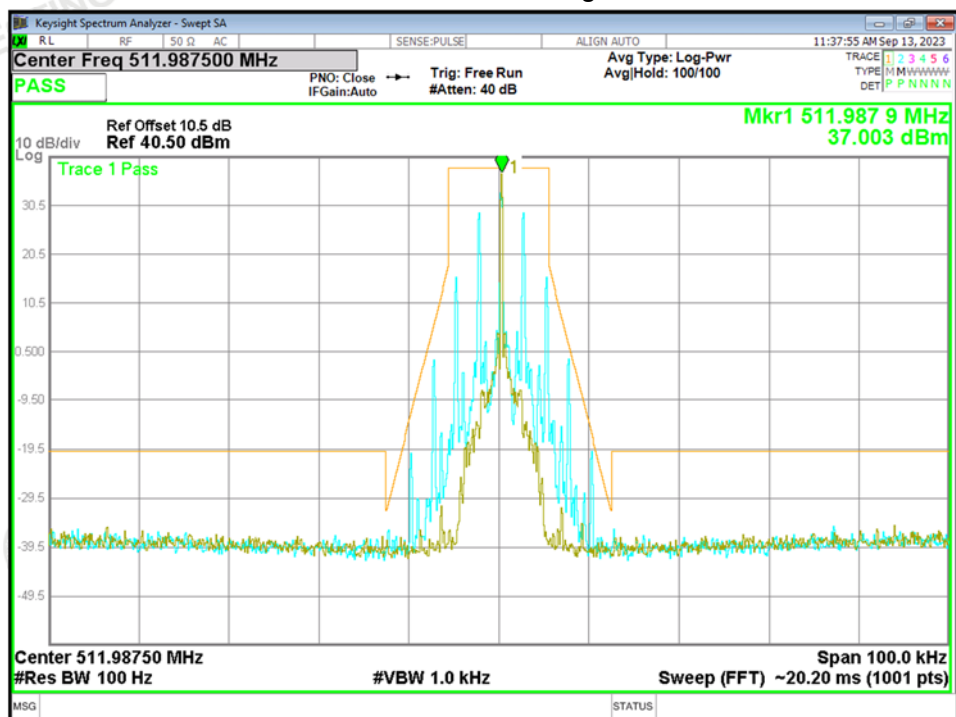


Mode6-466.5MHz-High Power

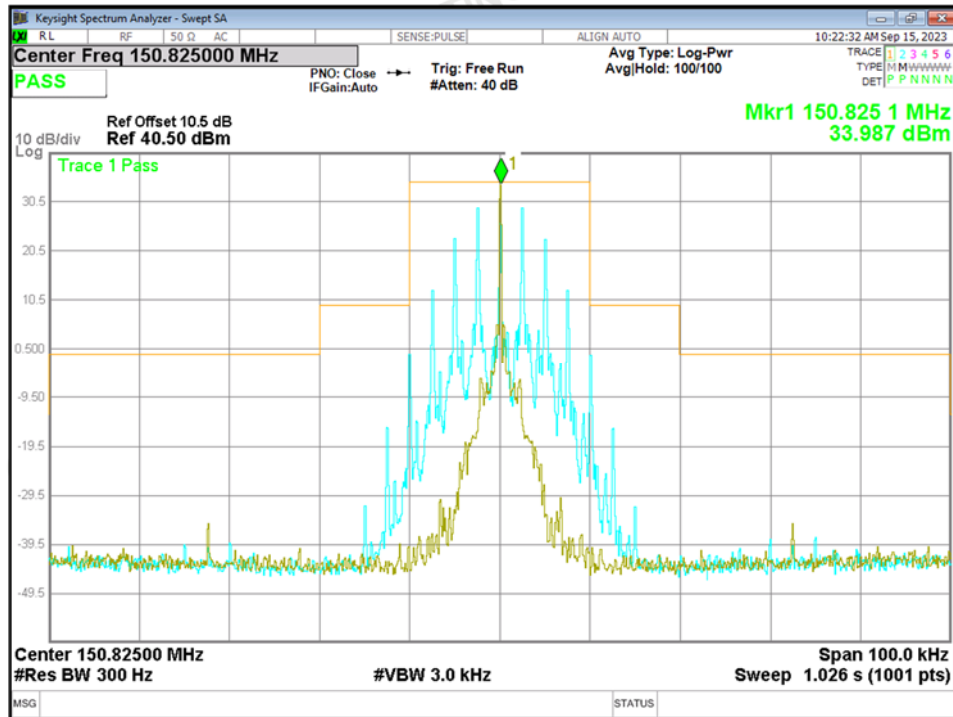


Mode6-511.9875MHz-High Power

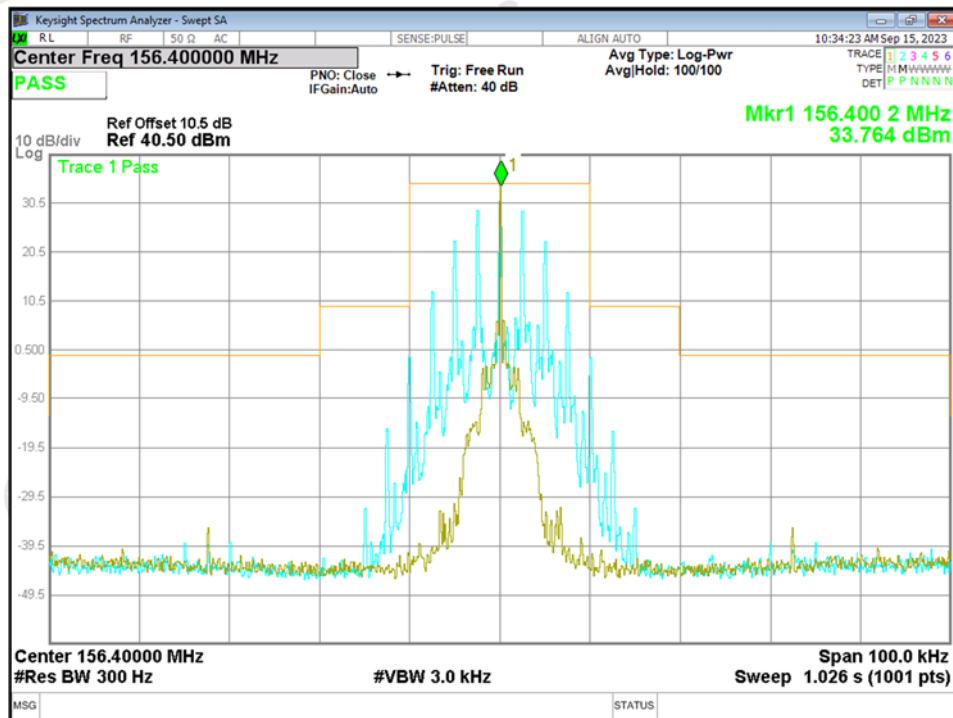


25 kHz:

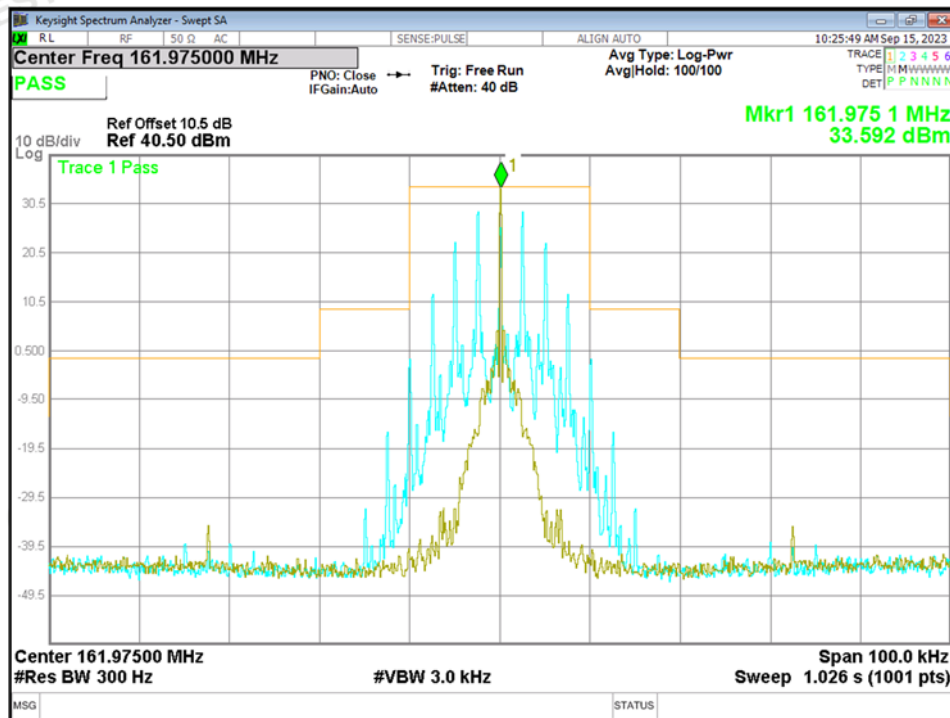
Mode7-150.825MHz-Low Power



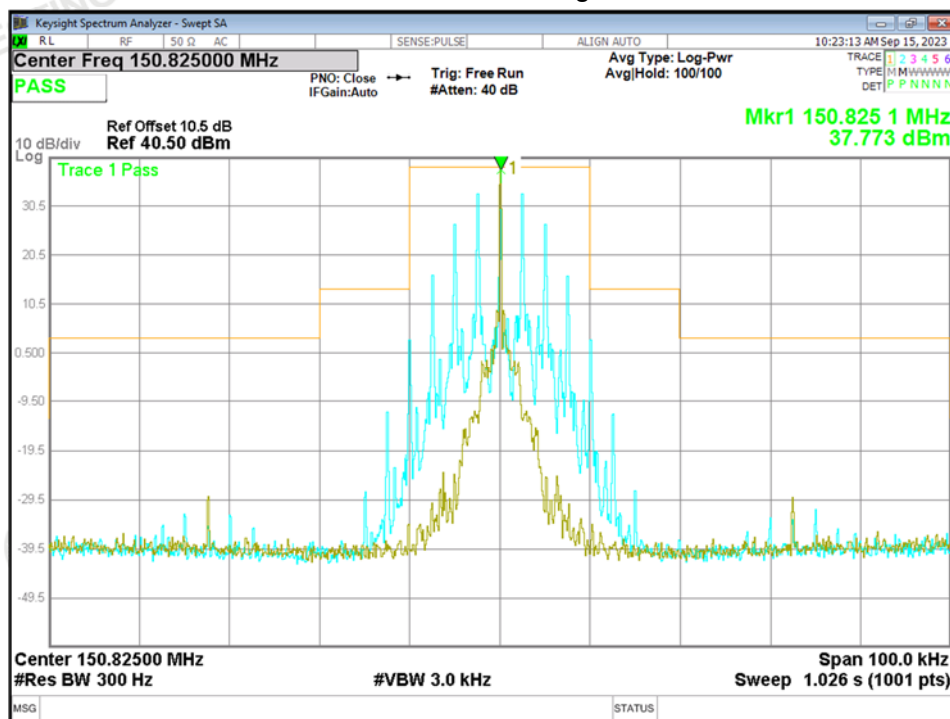
Mode7-156.4MHz-Low Power



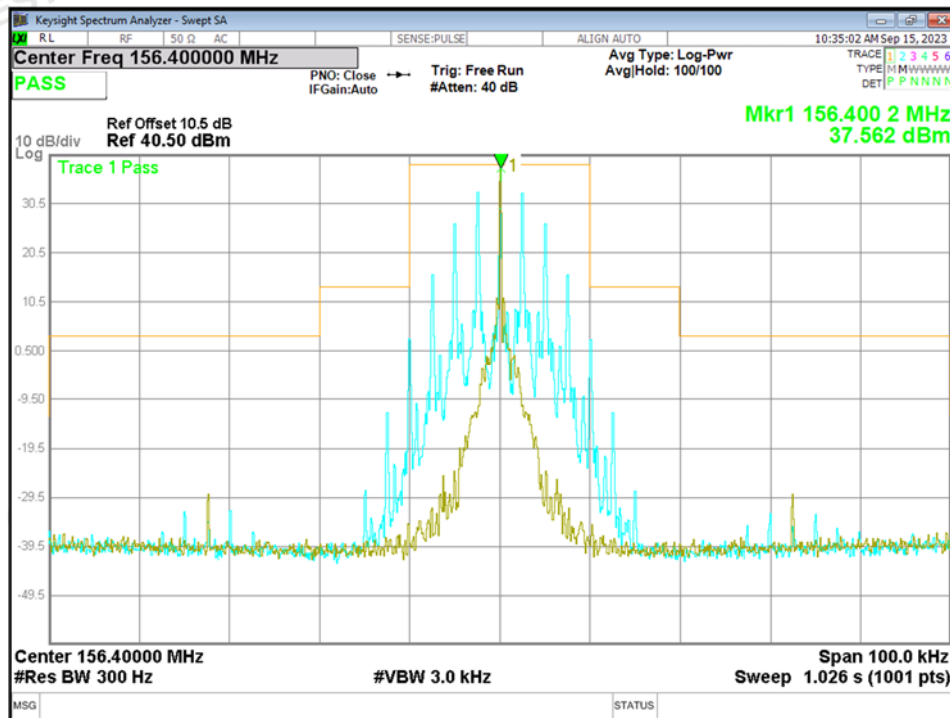
Mode7-161.975MHz-Low Power



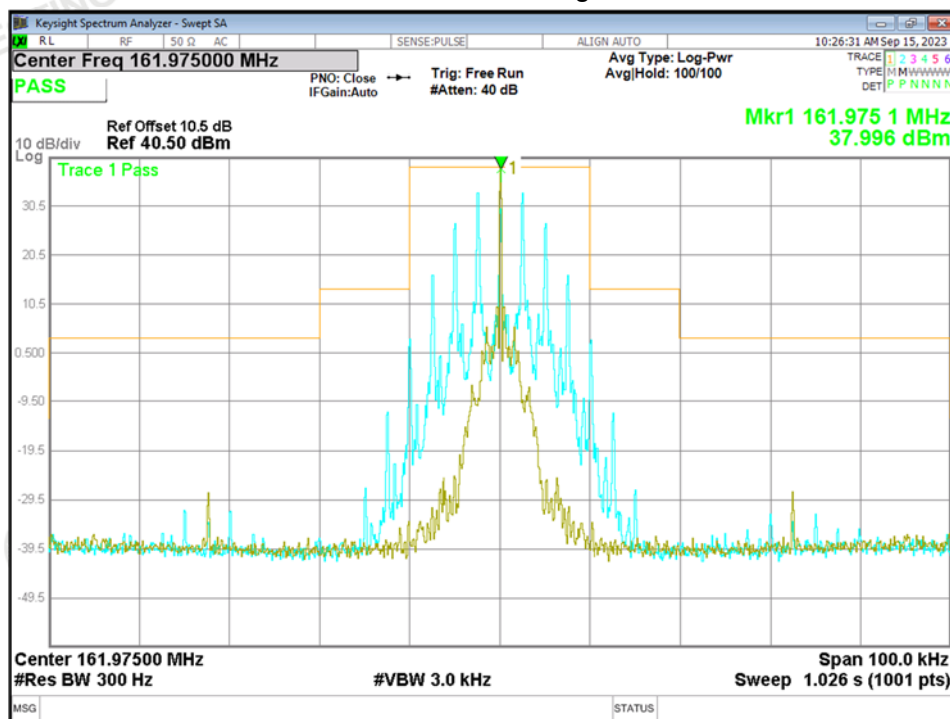
Mode8-150.825MHz-High Power



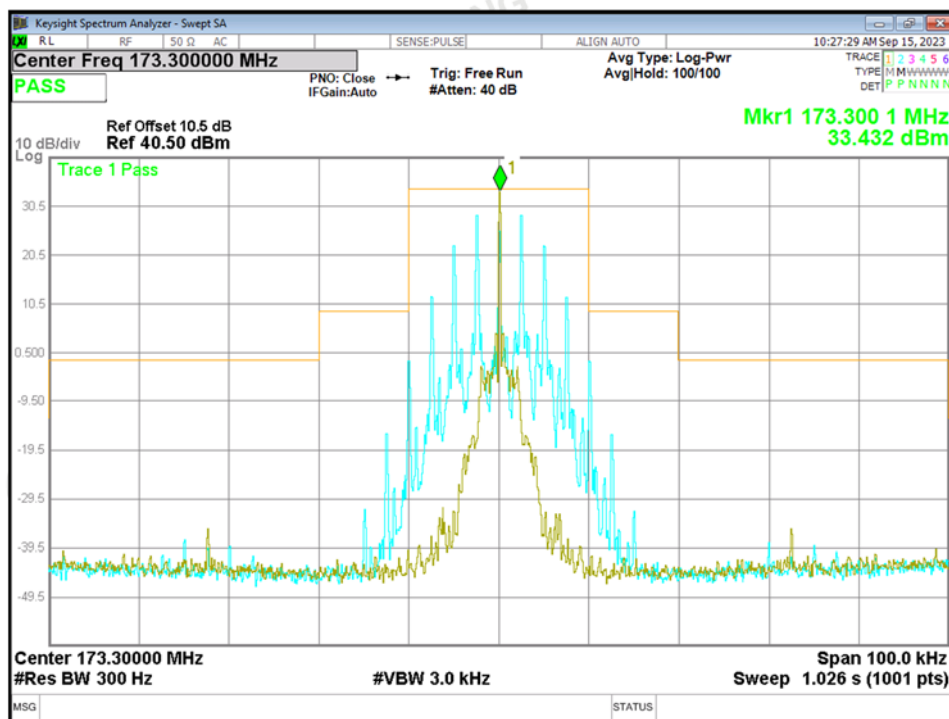
Mode8-156.4MHz-High Power



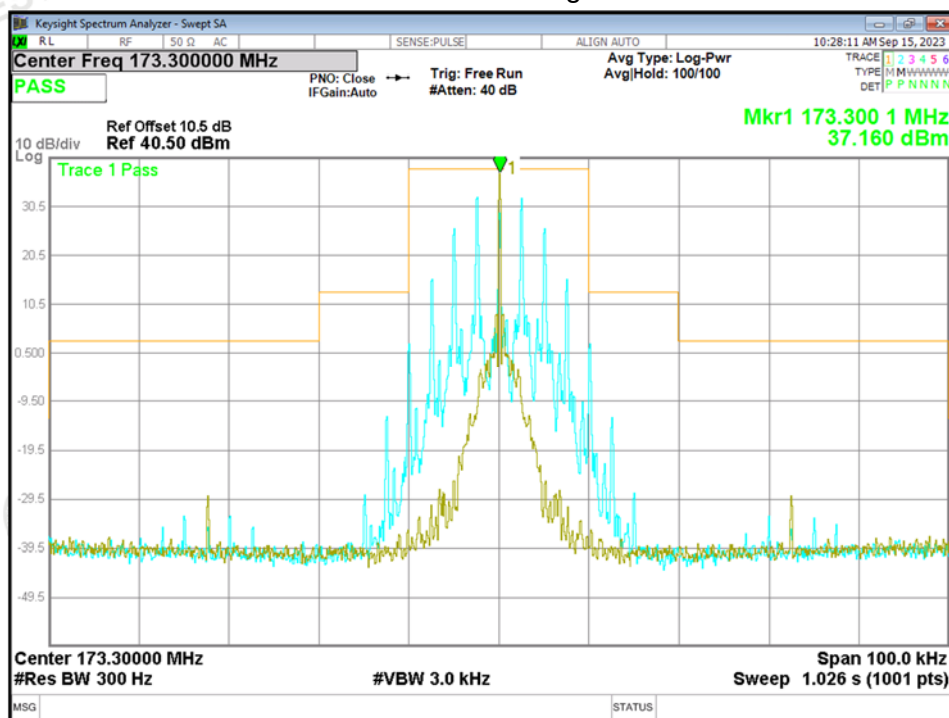
Mode8-161.975MHz-High Power



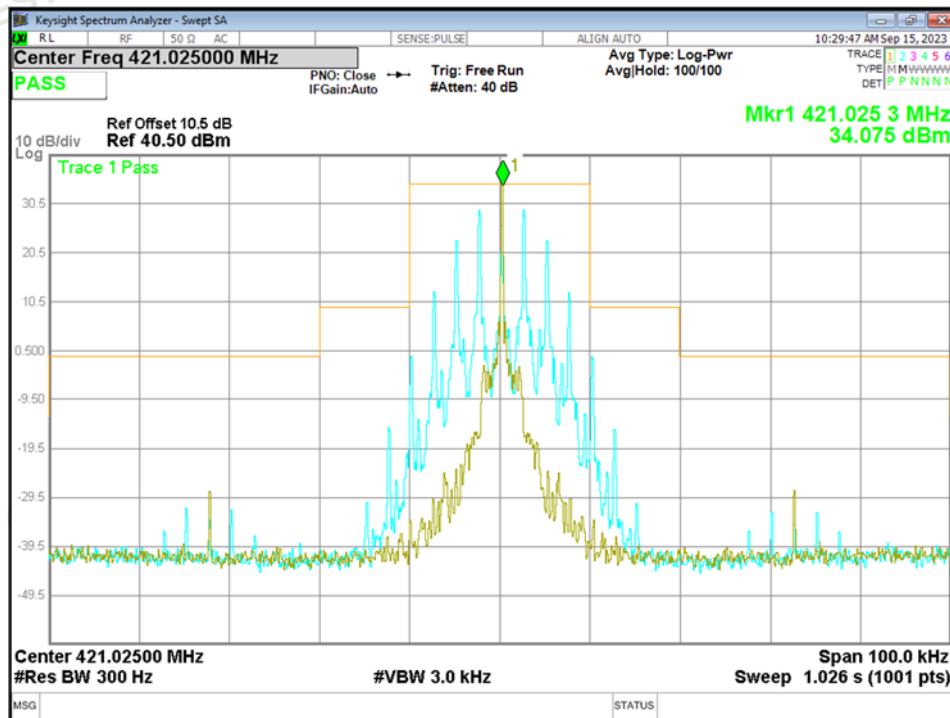
Mode9-173.3MHz-Low Power



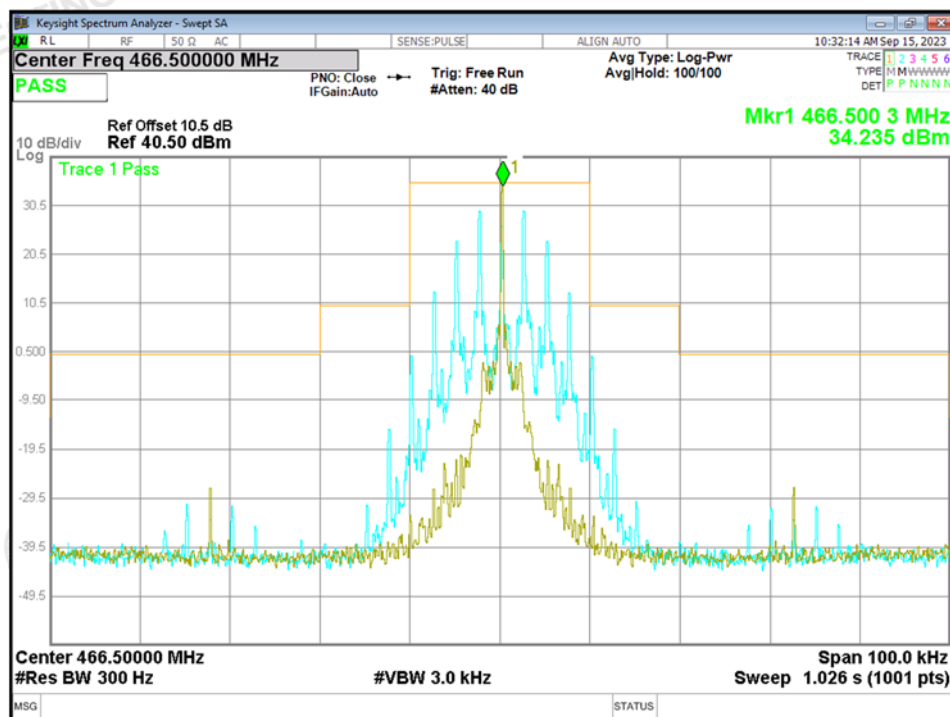
Mode10-173.3MHz-High Power



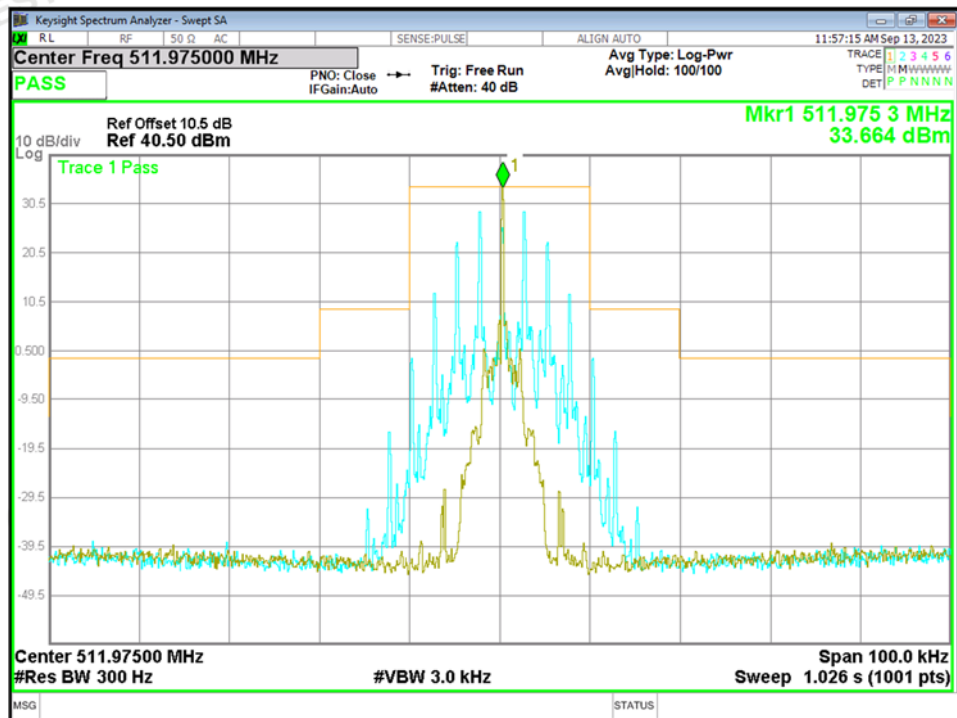
Mode11-421.025MHz-Low Power



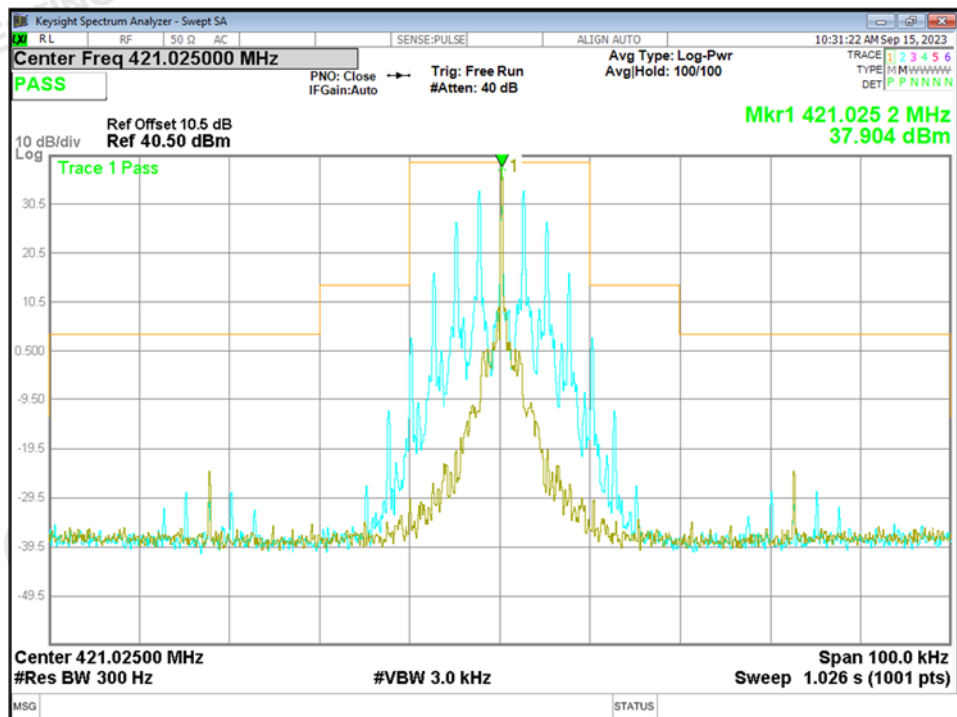
Mode11-466.5MHz-Low Power



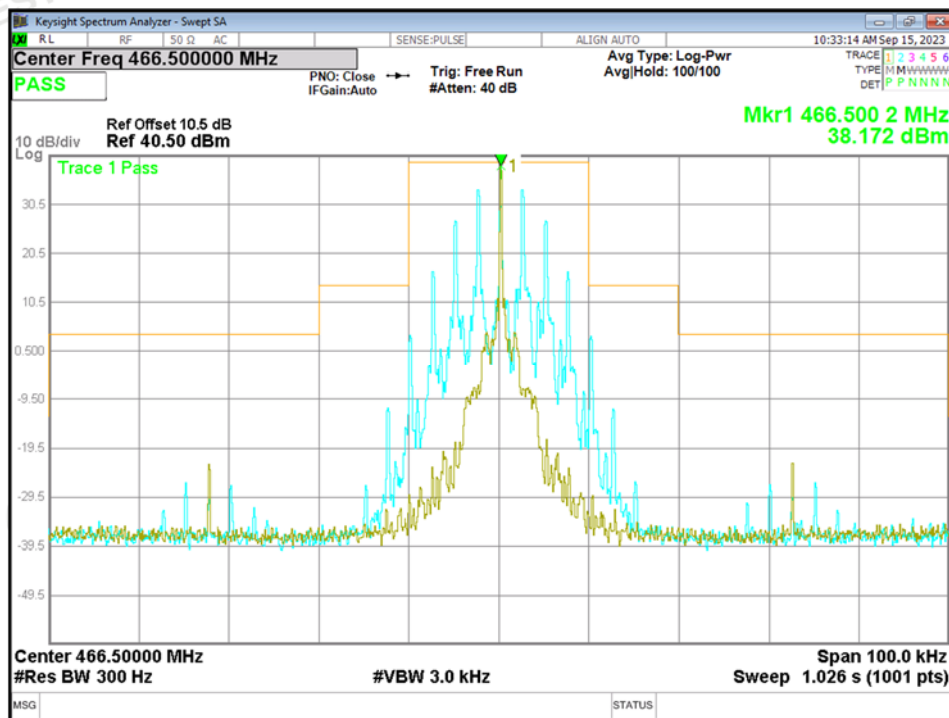
Mode11-511.975MHz-Low Power



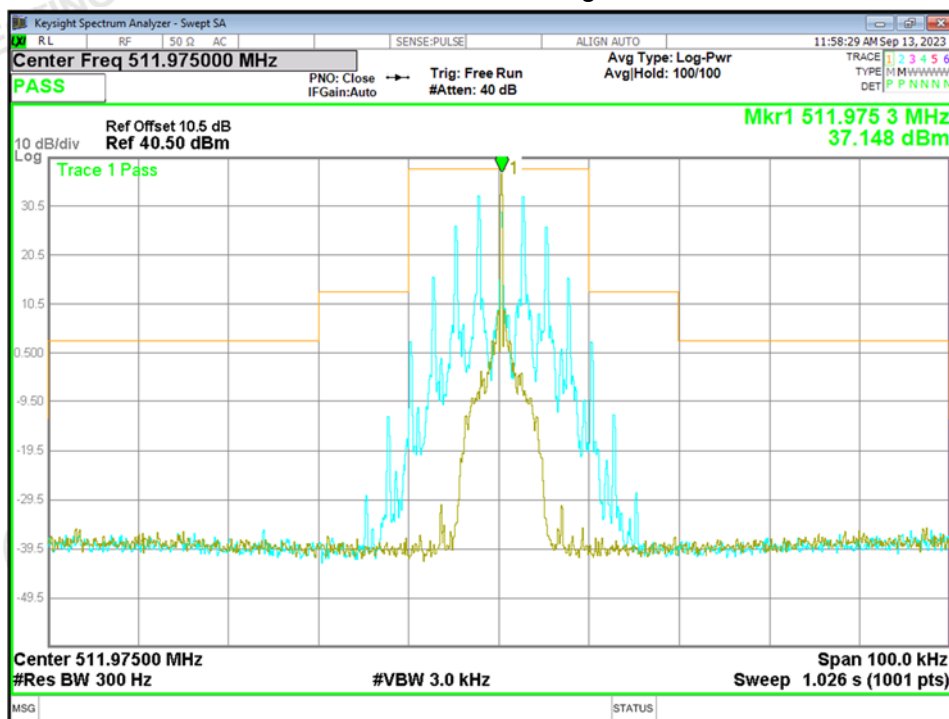
Mode12-421.025MHz-High Power



Mode12-466.5MHz-High Power

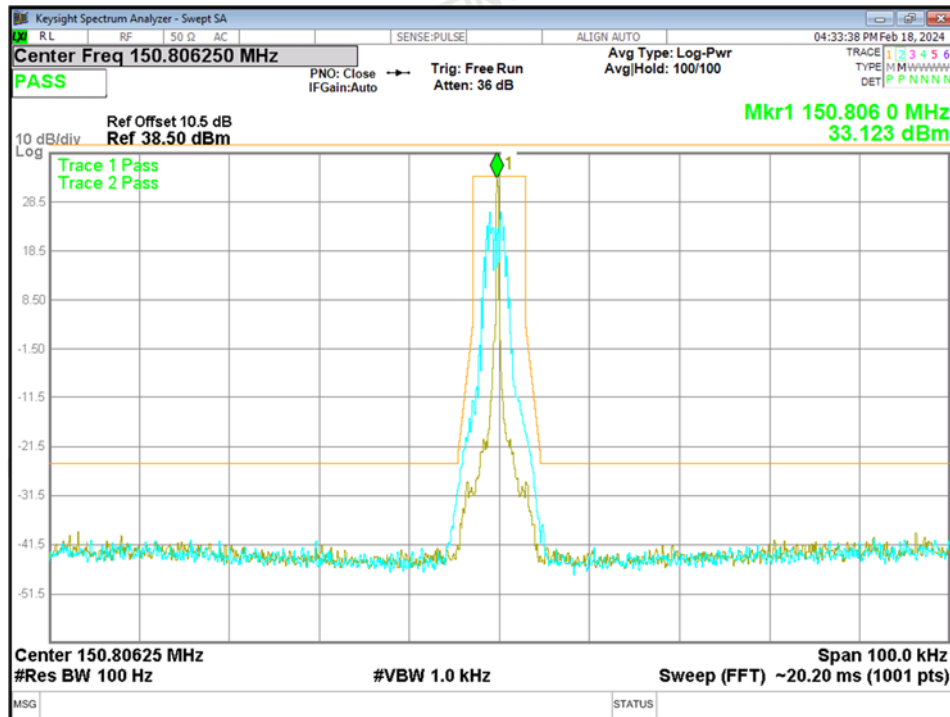


Mode12-511.975MHz-High Power

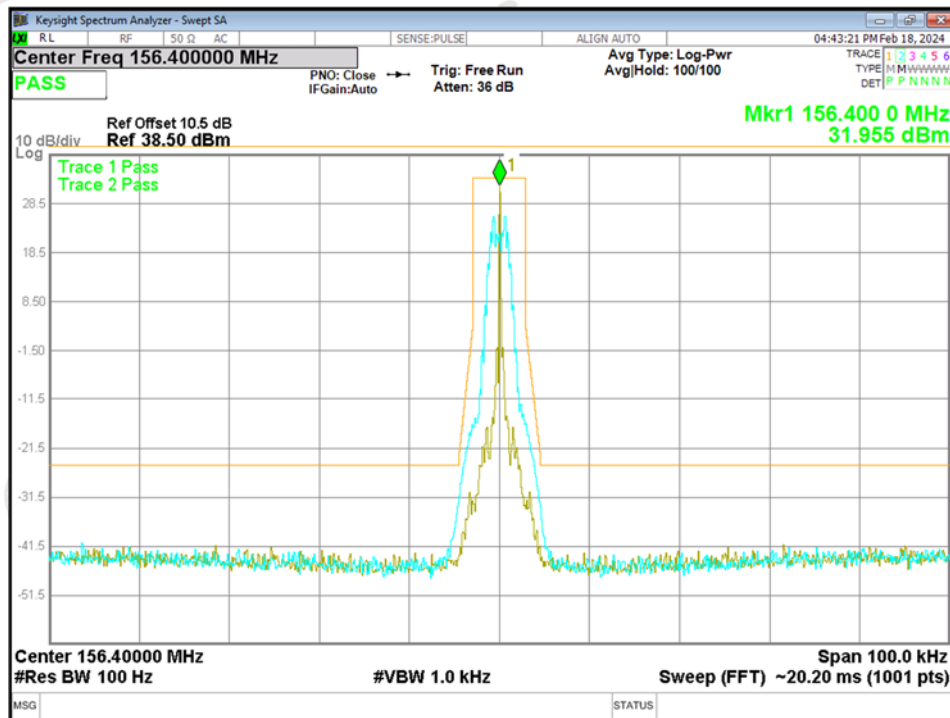


6.25 kHz:

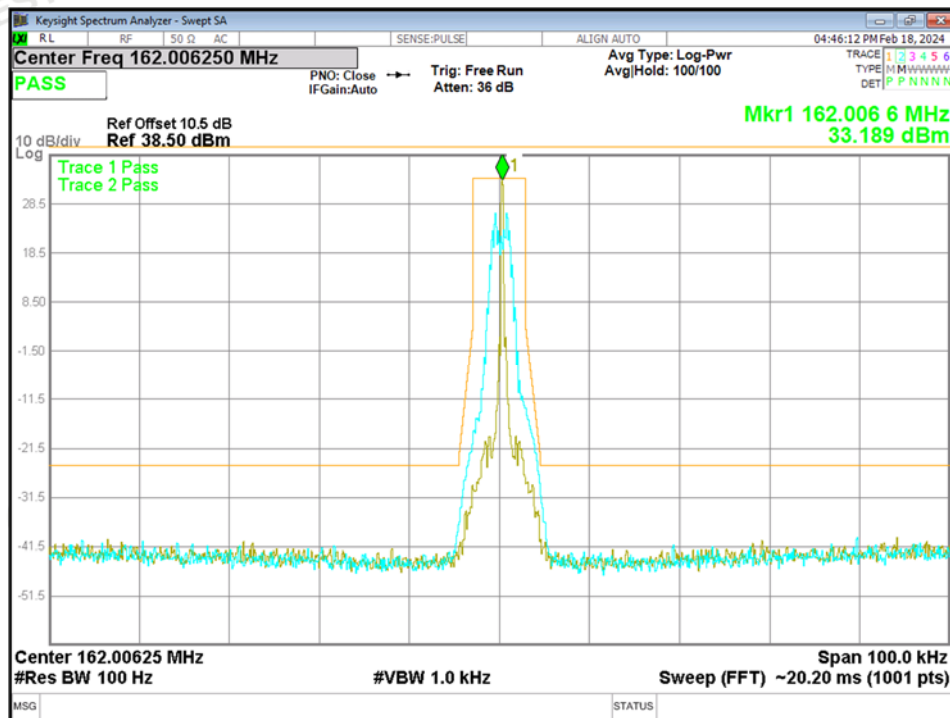
Mode13-150.80625MHz-Low Power



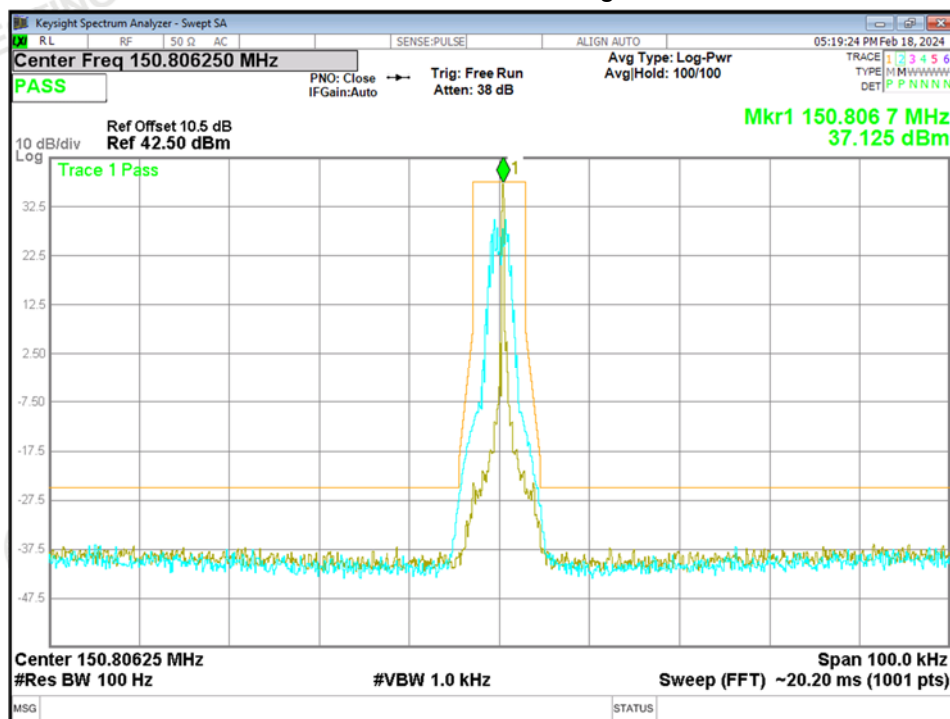
Mode13-156.4MHz-Low Power



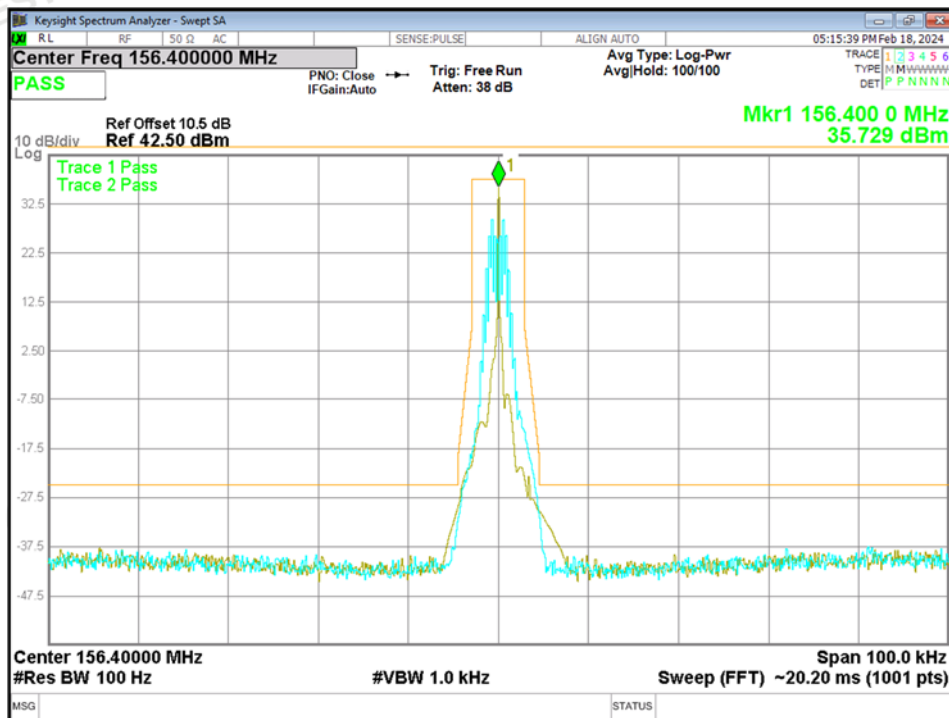
Mode13-162.00625MHz-Low Power



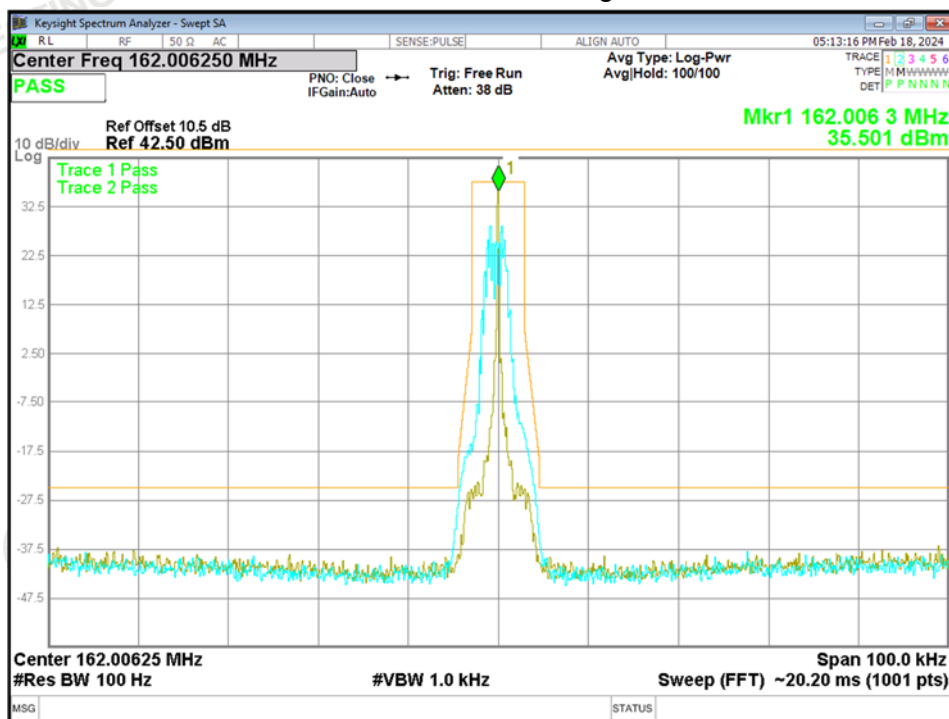
Mode14-150.80625MHz-High Power



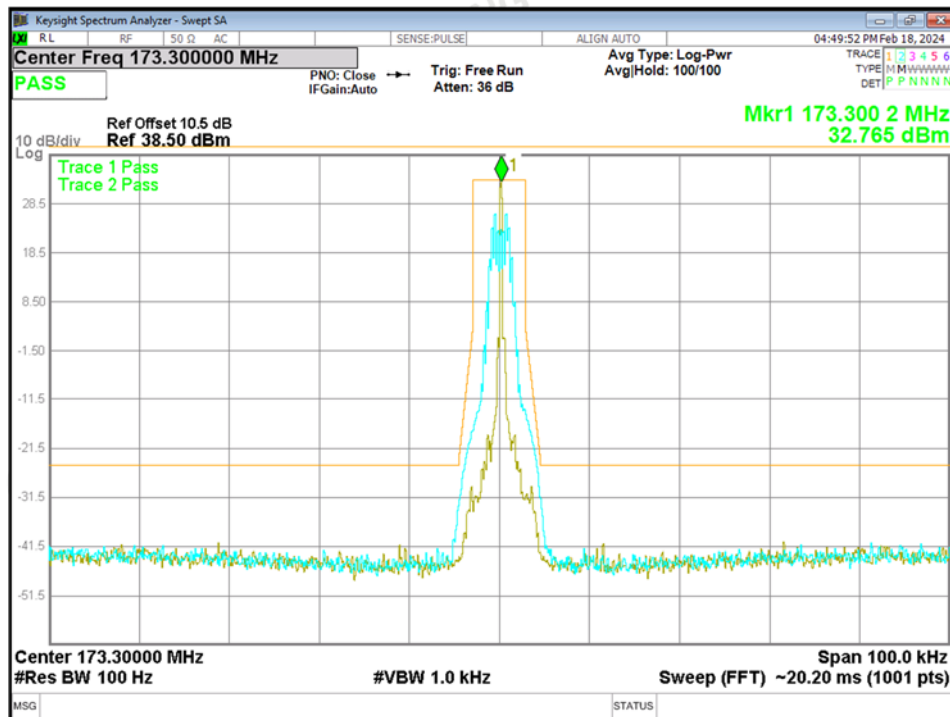
Mode14-156.4MHz-High Power



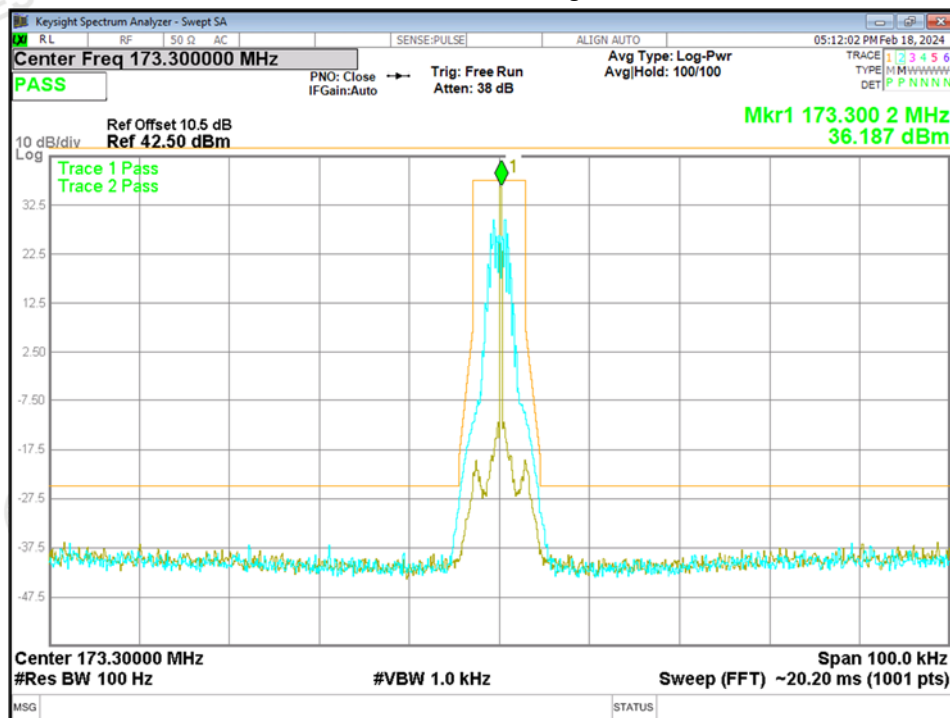
Mode14-162.00625MHz-High Power



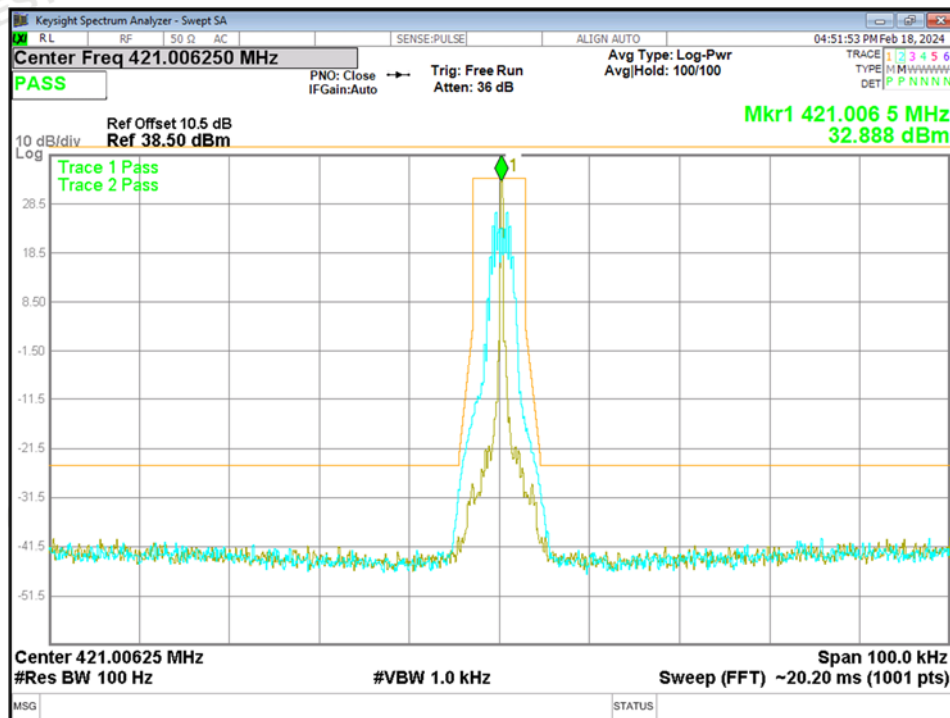
Mode15-173.3MHz-Low Power



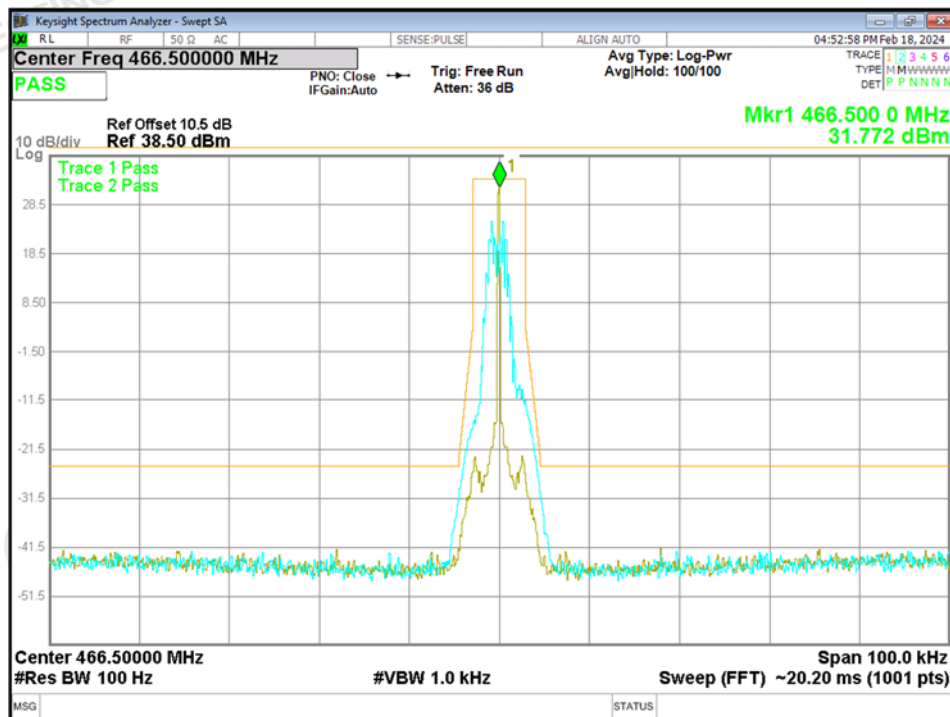
Mode16-173.3MHz-High Power



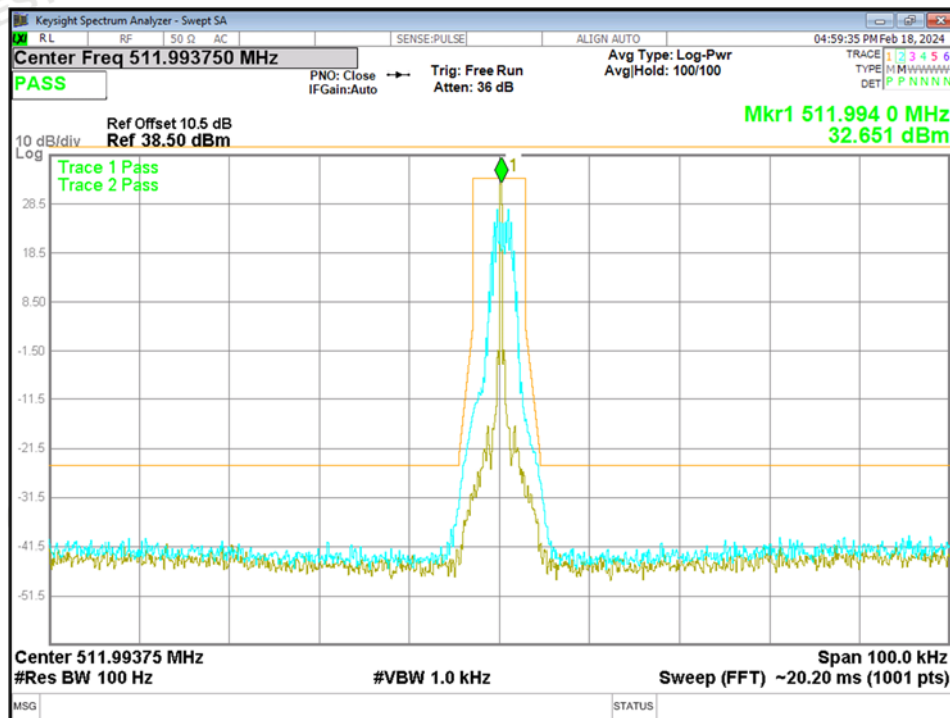
Mode17-421.00625MHz-Low Power



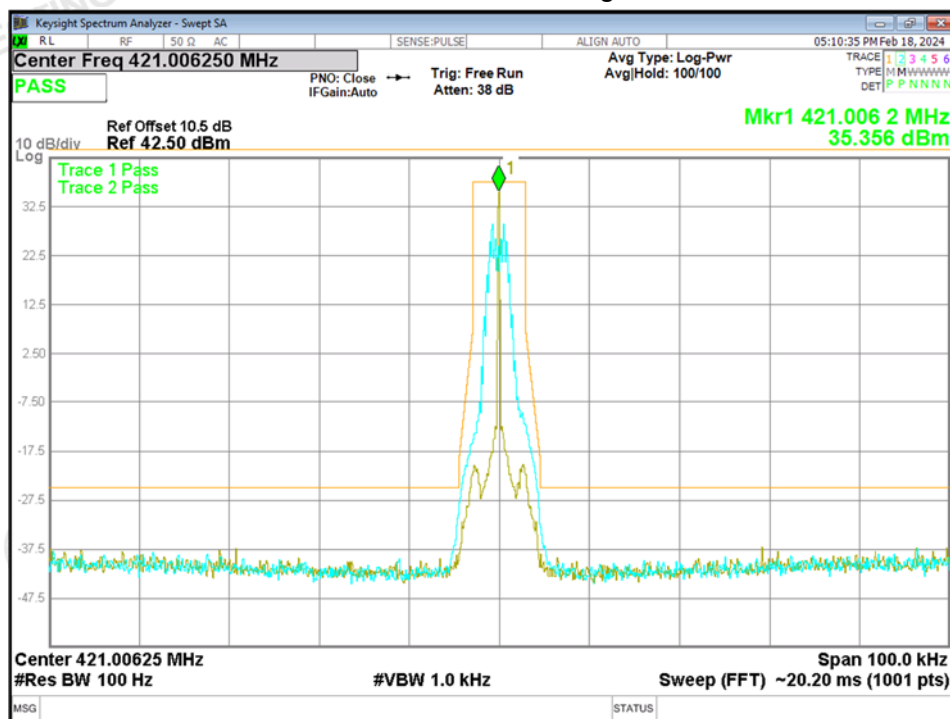
Mode17-466.5MHz-Low Power



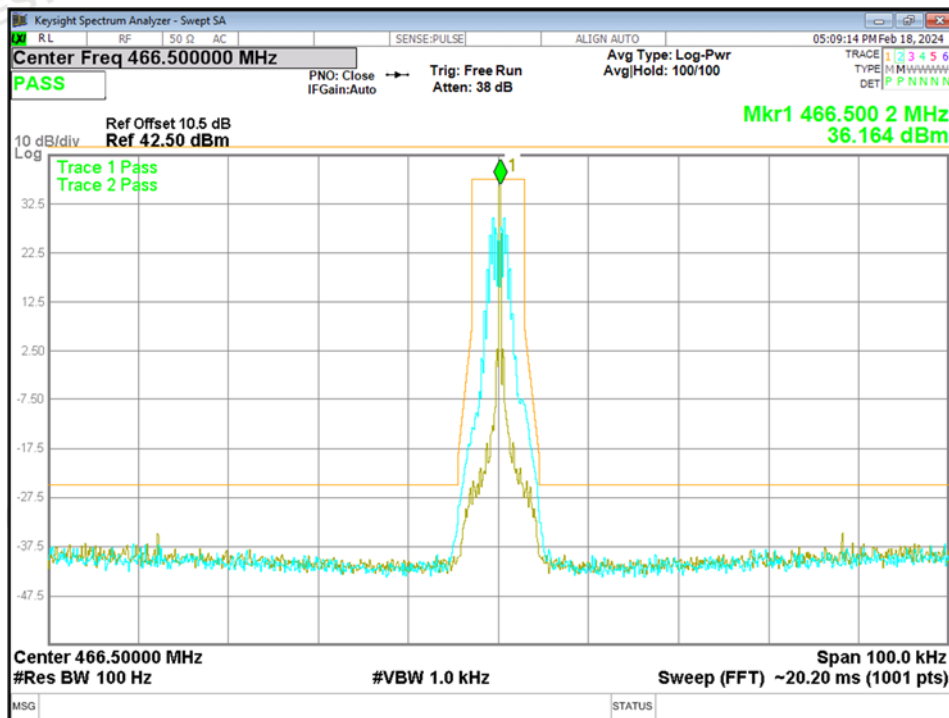
Mode17-511.99375MHz-Low Power



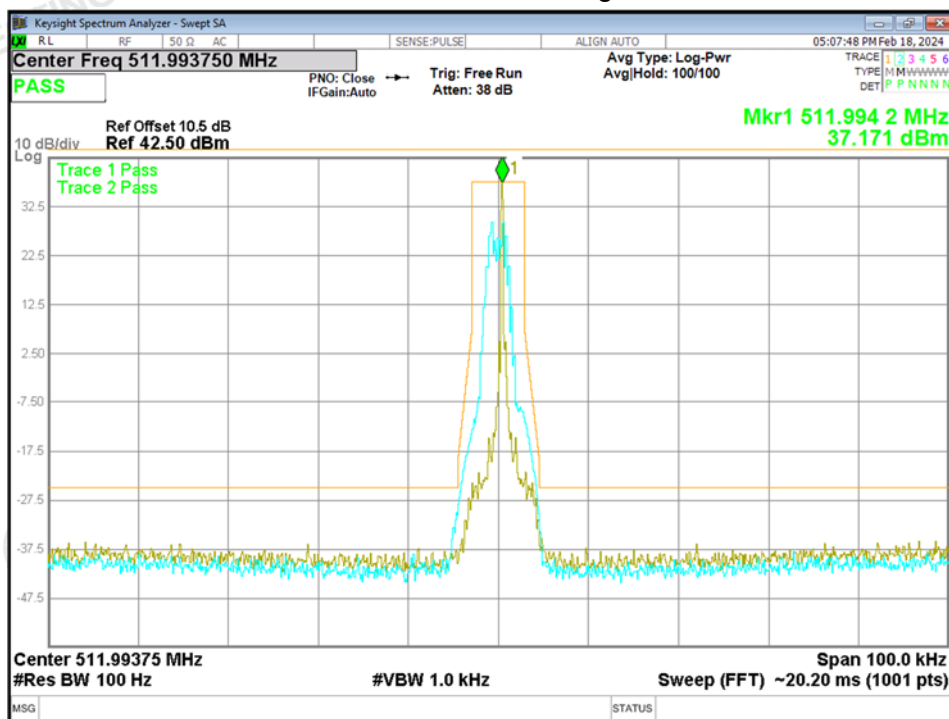
Mode18-421.00625MHz-High Power



Mode18-466.5MHz-High Power



Mode18-511.99375MHz-High Power



6. TRANSMITTER RADIATED SPURIOUS EMISSION

6.1 PROVISIONS APPLICABLE

According to the TIA/EIA 603 test method, and according to Section 90.210, the power of each unwanted emission shall be less than Transmitted Power as specified below for transmitters designed to operate with 12.5 KHz channel bandwidth:

- (1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of 4 kHz or less: Zero dB.
- (2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 4 kHz, but no more than 8.5 kHz: At least $107 \log (f_d/4)$ dB;
- (3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 8.5 kHz, but no more than 15 kHz: At least $40.5 \log (f_d/1.16)$ dB;
- (4) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 15 kHz, but no more than 25 kHz: At least $116 \log (f_d/6.1)$ dB;
- (5) On any frequency removed from the center of the authorized bandwidth by more than 25 kHz: At least $43 + 10 \log (P)$ dB.

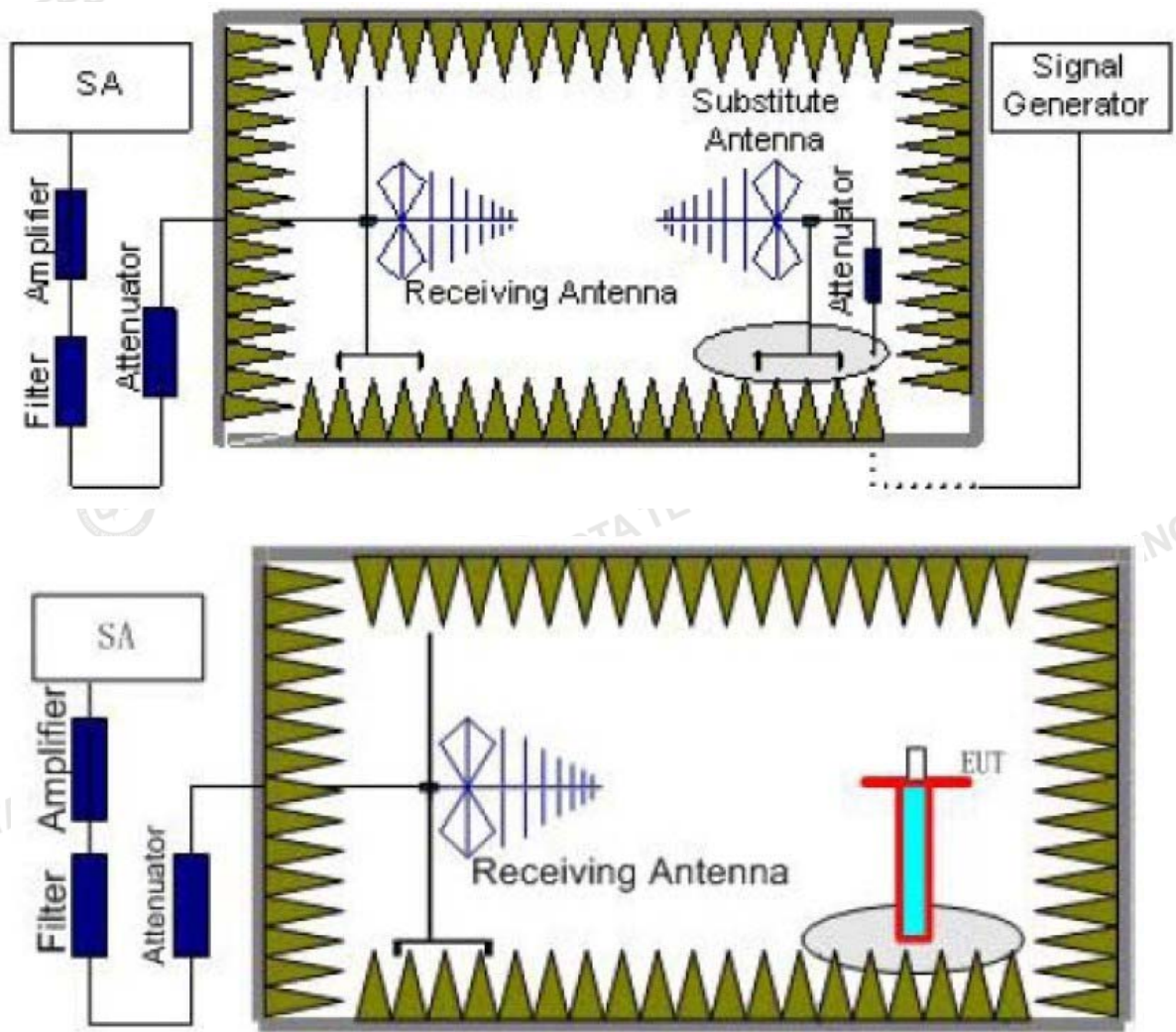
For transmitters designed to transmit with 25 KHz channel separation and equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as following:

- (1) On any frequency removed from the assigned frequency by more than 75 kHz, the attenuation of any emission must be at least $43 + 10 \log (P_{\text{watts}})$ dB.

6.2 TEST PROCEDURE

- a. EUT was placed on a 1.50 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT. for emission measurements. The height of receiving antenna is 1.50 m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in six channels were measured with peak detector.
- b. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
- c. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=1MHz, VBW=3MHz for above 1GHz and RBW=100KHz, VBW=300KHz for 30MHz to 1GHz, And the maximum value of the receiver should be recorded as (P_r).
- d. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (P_{Mea}) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (P_r). The power of signal source (P_{Mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
- e. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (P_{cl}), the Substitution Antenna Gain (G_a) and the Amplifier Gain (P_{Ag}) should be recorded after test. The measurement results are obtained as described below:
Amplifier for substitution test; The measurement results are amend as described below:
 $\text{Power(EIRP)} = P_{\text{Mea}} - P_{\text{cl}} + G_a$

6.3 TEST CONFIGURATION



6.4 TEST RESULT

12.5 KHz:

Mode2-150.8125MHz-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
603.270	-47.58	6.23	-20.0	-27.58	92.80	Horizontal	Vertical	Pass
754.105	-28.12	7.21	-20.0	-8.12	92.80	Horizontal	Vertical	Pass
904.940	-28.87	9.01	-20.0	-8.87	122.10	Horizontal	Vertical	Pass
1357.250	-30.34	13.59	-20.0	-10.34	156.10	Horizontal	Vertical	Pass
1659.000	-38.12	11.95	-20.0	-18.12	170.90	Horizontal	Vertical	Pass
3167.000	-35.60	3.29	-20.0	-15.60	327.10	Horizontal	Vertical	Pass

Mode2-150.8125MHz-High Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
603.270	-45.60	4.82	-20.0	-25.60	177.00	Vertical	Vertical	Pass
754.105	-27.65	7.30	-20.0	-7.65	259.10	Vertical	Vertical	Pass
904.940	-34.75	8.38	-20.0	-14.75	360.00	Vertical	Vertical	Pass
1357.250	-29.48	13.47	-20.0	-9.48	240.70	Vertical	Vertical	Pass
1658.750	-33.81	11.80	-20.0	-13.81	202.10	Vertical	Vertical	Pass
4675.250	-40.47	5.03	-20.0	-20.47	59.30	Vertical	Vertical	Pass

Mode2-156.4MHz-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
625.701	-24.42	7.27	-20.0	-4.42	257.40	Horizontal	Vertical	Pass
782.114	-37.75	6.89	-20.0	-17.75	248.40	Horizontal	Vertical	Pass
1094.750	-42.74	12.08	-20.0	-22.74	244.40	Horizontal	Vertical	Pass
1407.750	-35.93	14.05	-20.0	-15.93	253.60	Horizontal	Vertical	Pass
2659.000	-39.12	18.87	-20.0	-19.12	241.30	Horizontal	Vertical	Pass
3128.250	-44.38	3.04	-20.0	-24.38	250.10	Horizontal	Vertical	Pass

Mode2-156.4MHz-High Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
625.701	-23.42	5.32	-20.0	-3.42	247.80	Vertical	Vertical	Pass
782.114	-34.61	6.69	-20.0	-14.61	175.50	Vertical	Vertical	Pass
1095.000	-41.19	8.83	-20.0	-21.19	204.20	Vertical	Vertical	Pass
1407.750	-35.41	13.77	-20.0	-15.41	204.20	Vertical	Vertical	Pass
1720.500	-34.24	11.90	-20.0	-14.24	198.00	Vertical	Vertical	Pass
3128.250	-43.98	2.41	-20.0	-23.98	248.10	Vertical	Vertical	Pass

Mode2-162MHz-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
648.011	-21.67	6.75	-20.0	-1.67	77.60	Horizontal	Vertical	Pass
810.122	-50.02	6.19	-20.0	-30.02	224.60	Horizontal	Vertical	Pass
901.060	-51.83	8.86	-20.0	-31.83	245.00	Horizontal	Vertical	Pass
1458.250	-41.13	13.31	-20.0	-21.13	240.10	Horizontal	Vertical	Pass
2435.750	-33.06	19.49	-20.0	-13.06	237.10	Horizontal	Vertical	Pass
3888.250	-46.14	4.05	-20.0	-26.14	342.30	Horizontal	Vertical	Pass

Mode2-162MHz-High Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
648.011	-21.44	5.23	-20.0	-1.44	84.40	Vertical	Vertical	Pass
734.705	-48.90	7.84	-20.0	-28.90	84.40	Vertical	Vertical	Pass
810.122	-45.62	6.27	-20.0	-25.62	181.80	Vertical	Vertical	Pass
1458.250	-41.27	13.34	-20.0	-21.27	279.30	Vertical	Vertical	Pass
2438.500	-32.42	19.22	-20.0	-12.42	39.30	Vertical	Vertical	Pass
3888.250	-47.72	3.14	-20.0	-27.72	238.20	Vertical	Vertical	Pass

Mode4-173.3MHz-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
519.971	-68.14	1.63	-20.0	-48.14	85.20	Horizontal	Vertical	Pass
693.238	-35.55	4.89	-20.0	-15.55	244.50	Horizontal	Vertical	Pass
866.625	-62.09	7.49	-20.0	-42.09	238.60	Horizontal	Vertical	Pass
1386.500	-39.65	13.98	-20.0	-19.65	153.60	Horizontal	Vertical	Pass
2438.500	-32.71	19.47	-20.0	-12.71	49.20	Horizontal	Vertical	Pass
4159.250	-44.40	4.19	-20.0	-24.40	337.40	Horizontal	Vertical	Pass

Mode4-173.3MHz-Low Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
519.850	-66.34	4.71	-20.0	-46.34	165.60	Vertical	Vertical	Pass
693.238	-30.72	6.62	-20.0	-10.72	198.40	Vertical	Vertical	Pass
866.625	-49.36	8.22	-20.0	-29.36	355.90	Vertical	Vertical	Pass
1386.500	-38.54	13.72	-20.0	-18.54	248.50	Vertical	Vertical	Pass
2616.750	-26.29	17.81	-20.0	-6.29	12.10	Vertical	Vertical	Pass
4159.250	-47.32	3.90	-20.0	-27.32	131.70	Vertical	Vertical	Pass

Mode6-421.0125MHz-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
239.156	-76.21	-1.04	-20.0	-56.21	339.50	Horizontal	Vertical	Pass
631.521	-50.23	7.26	-20.0	-30.23	152.30	Horizontal	Vertical	Pass
842.132	-25.78	7.33	-20.0	-5.78	255.80	Horizontal	Vertical	Pass
1263.000	-26.19	12.88	-20.0	-6.19	116.40	Horizontal	Vertical	Pass
1684.000	-26.76	11.50	-20.0	-6.76	47.90	Horizontal	Vertical	Pass
4631.250	-25.24	4.65	-20.0	-5.24	236.00	Horizontal	Vertical	Pass

Mode6-421.0125MHz-High Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
133.911	-76.35	-1.37	-20.0	-56.35	17.60	Vertical	Vertical	Pass
631.521	-53.33	5.24	-20.0	-33.33	35.20	Vertical	Vertical	Pass
842.132	-22.86	7.72	-20.0	-2.86	35.20	Vertical	Vertical	Pass
1263.000	-22.51	13.34	-20.0	-2.51	63.70	Vertical	Vertical	Pass
2526.250	-30.97	17.91	-20.0	-10.97	180.20	Vertical	Vertical	Pass
3789.250	-32.03	2.83	-20.0	-12.03	114.60	Vertical	Vertical	Pass

Mode6-466.5MHz-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
256.616	-75.58	-1.40	-20.0	-55.58	322.30	Horizontal	Vertical	Pass
591.994	-51.25	6.30	-20.0	-31.25	77.20	Horizontal	Vertical	Pass
933.070	-32.39	8.68	-20.0	-12.39	50.10	Horizontal	Vertical	Pass
1399.500	-22.56	14.15	-20.0	-2.56	91.20	Horizontal	Vertical	Pass
1866.000	-24.89	14.49	-20.0	-4.89	342.90	Horizontal	Vertical	Pass
3732.000	-27.10	3.72	-20.0	-7.10	229.30	Horizontal	Vertical	Pass

Mode6-466.5MHz-High Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
136.094	-75.81	-1.29	-20.0	-55.81	289.80	Vertical	Vertical	Pass
591.994	-49.91	5.04	-20.0	-29.91	41.80	Vertical	Vertical	Pass
933.070	-38.23	9.75	-20.0	-18.23	94.60	Vertical	Vertical	Pass
1399.500	-22.48	13.83	-20.0	-2.48	175.00	Vertical	Vertical	Pass
1866.250	-27.28	13.87	-20.0	-7.28	175.00	Vertical	Vertical	Pass
3732.000	-29.19	2.69	-20.0	-9.19	261.70	Vertical	Vertical	Pass

Mode6-511.9875MHz-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
35.214	-77.20	-1.88	-20.0	-57.20	337.00	Horizontal	Vertical	Pass
414.969	-72.54	2.51	-20.0	-52.54	209.80	Horizontal	Vertical	Pass
573.442	-62.63	6.17	-20.0	-42.63	248.10	Horizontal	Vertical	Pass
1536.000	-20.60	12.72	-20.0	-0.60	173.20	Horizontal	Vertical	Pass
2560.250	-23.84	18.50	-20.0	-3.84	349.20	Horizontal	Vertical	Pass
4096.000	-30.40	3.93	-20.0	-10.40	336.10	Horizontal	Vertical	Pass

Mode6-511.9875MHz-High Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
31.940	-79.53	-4.92	-20.0	-59.53	8.70	Vertical	Vertical	Pass
154.160	-75.91	-1.78	-20.0	-55.91	97.00	Vertical	Vertical	Pass
591.994	-61.30	5.04	-20.0	-41.30	111.50	Vertical	Vertical	Pass
1536.000	-21.33	12.55	-20.0	-1.33	23.30	Vertical	Vertical	Pass
2438.500	-30.07	19.22	-20.0	-10.07	222.80	Vertical	Vertical	Pass
3584.000	-32.67	2.28	-20.0	-12.67	98.90	Vertical	Vertical	Pass

25 KHz:

Mode8-150.825MHz-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
603.270	-48.66	6.23	-13.0	-35.66	256.80	Horizontal	Vertical	Pass
754.105	-31.93	7.21	-13.0	-18.93	89.70	Horizontal	Vertical	Pass
904.940	-31.96	9.01	-13.0	-18.96	86.90	Horizontal	Vertical	Pass
1357.500	-28.56	13.59	-13.0	-15.56	246.50	Horizontal	Vertical	Pass
2615.750	-26.72	18.27	-13.0	-13.72	219.40	Horizontal	Vertical	Pass
4826.250	-37.03	4.76	-13.0	-24.03	189.10	Horizontal	Vertical	Pass

Mode8-150.825MHz-High Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
603.270	-38.59	4.82	-13.0	-25.59	176.70	Vertical	Vertical	Pass
754.105	-19.99	7.30	-13.0	-6.99	254.50	Vertical	Vertical	Pass
904.940	-34.71	8.38	-13.0	-21.71	0.80	Vertical	Vertical	Pass
1357.250	-29.52	13.47	-13.0	-16.52	229.90	Vertical	Vertical	Pass
1659.000	-32.81	11.80	-13.0	-19.81	212.60	Vertical	Vertical	Pass
3201.750	-37.21	2.65	-13.0	-24.21	1.70	Vertical	Vertical	Pass

Mode8-156.4MHz-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
625.701	-21.52	7.27	-13.0	-8.52	263.50	Horizontal	Vertical	Pass
782.114	-36.62	6.89	-13.0	-23.62	243.20	Horizontal	Vertical	Pass
938.526	-53.63	8.29	-13.0	-40.63	121.50	Horizontal	Vertical	Pass
1407.750	-33.72	14.05	-13.0	-20.72	262.60	Horizontal	Vertical	Pass
2633.750	-26.80	18.56	-13.0	-13.80	76.70	Horizontal	Vertical	Pass
4848.750	-40.18	4.77	-13.0	-27.18	64.00	Horizontal	Vertical	Pass

Mode8-156.4MHz-High Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
625.701	-23.81	5.32	-13.0	-10.81	86.90	Vertical	Vertical	Pass
782.114	-32.42	6.69	-13.0	-19.42	268.20	Vertical	Vertical	Pass
938.526	-41.78	10.08	-13.0	-28.78	336.70	Vertical	Vertical	Pass
1407.750	-33.18	13.77	-13.0	-20.18	232.30	Vertical	Vertical	Pass
1720.500	-32.86	11.90	-13.0	-19.86	193.10	Vertical	Vertical	Pass
4848.750	-40.01	5.58	-13.0	-27.01	31.00	Vertical	Vertical	Pass

Mode8-161.975MHz-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
648.011	-20.19	6.75	-13.0	-7.19	274.60	Horizontal	Vertical	Pass
810.122	-51.24	6.19	-13.0	-38.24	316.00	Horizontal	Vertical	Pass
901.909	-53.87	8.89	-13.0	-40.87	312.90	Horizontal	Vertical	Pass
1458.250	-40.85	13.31	-13.0	-27.85	238.30	Horizontal	Vertical	Pass
2617.500	-25.96	18.30	-13.0	-12.96	96.90	Horizontal	Vertical	Pass
3888.250	-46.90	4.05	-13.0	-33.90	357.30	Horizontal	Vertical	Pass

Mode8-161.975MHz-High Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
648.011	-18.51	5.23	-13.0	-5.51	359.70	Vertical	Vertical	Pass
810.122	-48.29	6.27	-13.0	-35.29	190.30	Vertical	Vertical	Pass
972.113	-54.49	10.26	-13.0	-41.49	11.80	Vertical	Vertical	Pass
1458.250	-40.45	13.34	-13.0	-27.45	270.30	Vertical	Vertical	Pass
2465.500	-30.05	18.65	-13.0	-17.05	285.40	Vertical	Vertical	Pass
3888.000	-46.99	3.14	-13.0	-33.99	199.60	Vertical	Vertical	Pass

Mode10-173.3MHz-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
612.000	-58.30	6.78	-13.0	-45.30	189.10	Horizontal	Vertical	Pass
693.238	-35.76	4.89	-13.0	-22.76	287.00	Horizontal	Vertical	Pass
867.231	-56.63	7.52	-13.0	-43.63	189.10	Horizontal	Vertical	Pass
2465.250	-32.99	19.17	-13.0	-19.99	126.40	Horizontal	Vertical	Pass
2616.250	-32.11	18.28	-13.0	-19.11	260.70	Horizontal	Vertical	Pass
4280.750	-45.11	4.38	-13.0	-32.11	327.10	Horizontal	Vertical	Pass

Mode10-173.3MHz-High Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
605.453	-47.81	4.90	-13.0	-34.81	163.80	Vertical	Vertical	Pass
693.238	-29.51	6.62	-13.0	-16.51	360.20	Vertical	Vertical	Pass
866.625	-48.01	8.22	-13.0	-35.01	360.20	Vertical	Vertical	Pass
1386.500	-40.88	13.72	-13.0	-27.88	253.30	Vertical	Vertical	Pass
2617.250	-25.38	17.81	-13.0	-12.38	193.10	Vertical	Vertical	Pass
4159.250	-46.86	3.90	-13.0	-33.86	213.80	Vertical	Vertical	Pass

Mode12-421.025MHz-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
31.698	-76.80	-1.90	-13.0	-63.80	195.60	Horizontal	Vertical	Pass
631.521	-39.50	7.26	-13.0	-26.50	210.10	Horizontal	Vertical	Pass
842.132	-24.91	7.33	-13.0	-11.91	73.90	Horizontal	Vertical	Pass
1684.000	-26.18	11.50	-13.0	-13.18	161.30	Horizontal	Vertical	Pass
2526.250	-30.42	18.67	-13.0	-17.42	343.80	Horizontal	Vertical	Pass
4631.250	-26.56	4.65	-13.0	-13.56	228.90	Horizontal	Vertical	Pass

Mode12-421.025MHz-High Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
133.548	-76.17	-1.39	-13.0	-63.17	298.10	Vertical	Vertical	Pass
621.094	-61.17	5.39	-13.0	-48.17	190.70	Vertical	Vertical	Pass
842.132	-23.12	7.72	-13.0	-10.12	28.90	Vertical	Vertical	Pass
1263.000	-22.96	13.34	-13.0	-9.96	153.90	Vertical	Vertical	Pass
2526.250	-30.95	17.91	-13.0	-17.95	174.90	Vertical	Vertical	Pass
3789.250	-27.75	2.83	-13.0	-14.75	206.40	Vertical	Vertical	Pass

Mode12-466.5MHz-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
31.698	-76.97	-1.90	-13.0	-63.97	65.90	Horizontal	Vertical	Pass
591.994	-49.87	6.30	-13.0	-36.87	83.50	Horizontal	Vertical	Pass
933.070	-32.39	8.68	-13.0	-19.39	89.30	Horizontal	Vertical	Pass
1399.500	-23.25	14.15	-13.0	-10.25	95.70	Horizontal	Vertical	Pass
1866.000	-32.30	14.49	-13.0	-19.30	101.90	Horizontal	Vertical	Pass
3732.000	-27.88	3.72	-13.0	-14.88	244.10	Horizontal	Vertical	Pass

Mode12-466.5MHz-High Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
130.759	-76.35	-1.49	-13.0	-63.35	232.30	Vertical	Vertical	Pass
591.994	-49.23	5.04	-13.0	-36.23	59.70	Vertical	Vertical	Pass
933.070	-35.46	9.75	-13.0	-22.46	119.30	Vertical	Vertical	Pass
1399.500	-23.26	13.83	-13.0	-10.26	201.50	Vertical	Vertical	Pass
1866.000	-31.23	13.87	-13.0	-18.23	159.50	Vertical	Vertical	Pass
3732.000	-30.35	2.69	-13.0	-17.35	105.40	Vertical	Vertical	Pass

Mode12-511.975MHz-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
38.972	-76.34	-1.85	-13.0	-63.34	175.80	Horizontal	Vertical	Pass
566.289	-60.55	5.57	-13.0	-47.55	348.50	Horizontal	Vertical	Pass
918.278	-64.14	9.53	-13.0	-51.14	36.90	Horizontal	Vertical	Pass
1407.000	-49.56	14.06	-13.0	-36.56	288.90	Horizontal	Vertical	Pass
2469.750	-29.92	19.11	-13.0	-16.92	273.40	Horizontal	Vertical	Pass
3912.500	-41.94	4.09	-13.0	-28.94	172.10	Horizontal	Vertical	Pass

Mode12-511.975MHz-High Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
135.488	-75.64	-1.31	-13.0	-62.64	163.80	Vertical	Vertical	Pass
570.047	-67.66	5.98	-13.0	-54.66	140.00	Vertical	Vertical	Pass
952.955	-63.14	10.07	-13.0	-50.14	202.70	Vertical	Vertical	Pass
1272.000	-50.21	13.25	-13.0	-37.21	348.10	Vertical	Vertical	Pass
2631.500	-26.63	18.05	-13.0	-13.63	170.20	Vertical	Vertical	Pass
3909.750	-46.44	3.18	-13.0	-33.44	227.70	Vertical	Vertical	Pass

6.25 KHz:

RSE-Mode14-150.80625-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
435.703	-72.27	3.63	-25.0	-47.27	295.30	Horizontal	Vertical	Pass
640.009	-67.49	7.25	-25.0	-42.49	188.20	Horizontal	Vertical	Pass
978.296	-64.80	9.07	-25.0	-39.80	112.20	Horizontal	Vertical	Pass
1382.750	-50.92	13.93	-25.0	-25.92	333.00	Horizontal	Vertical	Pass
2903.750	-42.33	20.68	-25.0	-17.33	231.10	Horizontal	Vertical	Pass
4716.500	-50.94	4.65	-25.0	-25.94	305.50	Horizontal	Vertical	Pass

RSE-Mode14-150.80625-High Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
134.396	-77.26	-1.35	-25.0	-52.26	306.50	Vertical	Vertical	Pass
546.404	-70.12	6.20	-25.0	-45.12	264.80	Vertical	Vertical	Pass
988.602	-64.17	10.51	-25.0	-39.17	178.30	Vertical	Vertical	Pass
1780.000	-48.24	12.21	-25.0	-23.24	85.60	Vertical	Vertical	Pass
2955.000	-42.71	20.35	-25.0	-17.71	207.90	Vertical	Vertical	Pass
4681.500	-49.76	5.06	-25.0	-24.76	71.40	Vertical	Vertical	Pass

RSE-Mode14-156.40000-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
432.186	-72.32	3.43	-25.0	-47.32	304.60	Horizontal	Vertical	Pass
620.245	-67.88	7.28	-25.0	-42.88	321.90	Horizontal	Vertical	Pass
958.169	-65.08	9.51	-25.0	-40.08	16.10	Horizontal	Vertical	Pass
1809.250	-49.76	13.70	-25.0	-24.76	112.80	Horizontal	Vertical	Pass
2868.250	-42.46	20.68	-25.0	-17.46	47.60	Horizontal	Vertical	Pass
4692.250	-50.66	4.63	-25.0	-25.66	93.70	Horizontal	Vertical	Pass

RSE-Mode14-156.40000-High Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
112.329	-77.38	-2.28	-25.0	-52.38	279.30	Vertical	Vertical	Pass
543.736	-68.96	6.15	-25.0	-43.96	44.00	Vertical	Vertical	Pass
961.927	-63.91	10.06	-25.0	-38.91	11.50	Vertical	Vertical	Pass
1779.250	-49.57	12.21	-25.0	-24.57	228.60	Vertical	Vertical	Pass
2920.250	-42.65	20.28	-25.0	-17.65	0.00	Vertical	Vertical	Pass
4810.250	-50.38	5.49	-25.0	-25.38	4.30	Vertical	Vertical	Pass

RSE-Mode14-162.00625-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
451.101	-72.70	2.87	-25.0	-47.70	26.70	Horizontal	Vertical	Pass
624.125	-67.98	7.27	-25.0	-42.98	226.70	Horizontal	Vertical	Pass
914.398	-65.19	9.38	-25.0	-40.19	77.60	Horizontal	Vertical	Pass
1403.000	-49.36	14.12	-25.0	-24.36	255.80	Horizontal	Vertical	Pass
2953.500	-41.90	21.00	-25.0	-16.90	153.90	Horizontal	Vertical	Pass
4223.500	-50.26	4.37	-25.0	-25.26	132.30	Horizontal	Vertical	Pass

RSE-Mode14-162.00625-High Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
124.575	-77.27	-1.73	-25.0	-52.27	128.30	Vertical	Vertical	Pass
559.620	-69.44	6.42	-25.0	-44.44	41.20	Vertical	Vertical	Pass
983.389	-63.51	10.45	-25.0	-38.51	309.90	Vertical	Vertical	Pass
1858.750	-50.49	13.77	-25.0	-25.49	122.40	Vertical	Vertical	Pass
2916.250	-43.39	20.27	-25.0	-18.39	346.90	Vertical	Vertical	Pass
4855.750	-49.38	5.60	-25.0	-24.38	115.00	Vertical	Vertical	Pass

RSE-Mode16-173.30000-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
432.914	-72.28	3.47	-25.0	-47.28	126.70	Horizontal	Vertical	Pass
625.459	-68.30	7.27	-25.0	-43.30	105.40	Horizontal	Vertical	Pass
924.825	-65.67	9.26	-25.0	-40.67	105.40	Horizontal	Vertical	Pass
1382.000	-50.42	13.92	-25.0	-25.42	320.80	Horizontal	Vertical	Pass
2952.500	-41.92	21.00	-25.0	-16.92	9.20	Horizontal	Vertical	Pass
3966.500	-50.63	4.11	-25.0	-25.63	353.40	Horizontal	Vertical	Pass

RSE-Mode16-173.30000-High Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
125.545	-77.76	-1.69	-25.0	-52.76	124.30	Vertical	Vertical	Pass
560.105	-69.02	6.43	-25.0	-44.02	260.80	Vertical	Vertical	Pass
929.069	-63.26	9.50	-25.0	-38.26	112.50	Vertical	Vertical	Pass
1915.000	-50.22	14.02	-25.0	-25.22	282.40	Vertical	Vertical	Pass
2877.750	-43.24	20.15	-25.0	-18.24	264.50	Vertical	Vertical	Pass
4800.250	-49.70	5.47	-25.0	-24.70	18.30	Vertical	Vertical	Pass

RSE-Mode18-421.00625-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
431.216	-72.48	3.37	-25.0	-47.48	232.30	Horizontal	Vertical	Pass
637.705	-67.69	7.25	-25.0	-42.69	358.50	Horizontal	Vertical	Pass
900.211	-63.52	8.83	-25.0	-38.52	1.80	Horizontal	Vertical	Pass
1898.500	-49.74	14.57	-25.0	-24.74	345.70	Horizontal	Vertical	Pass
2885.250	-42.93	20.66	-25.0	-17.93	5.20	Horizontal	Vertical	Pass
4672.250	-50.96	4.64	-25.0	-25.96	86.80	Horizontal	Vertical	Pass

RSE-Mode18-421.00625-High Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
127.243	-77.20	-1.62	-25.0	-52.20	44.00	Vertical	Vertical	Pass
561.318	-67.93	6.37	-25.0	-42.93	360.00	Vertical	Vertical	Pass
941.194	-64.52	10.16	-25.0	-39.52	336.40	Vertical	Vertical	Pass
1901.250	-49.57	14.30	-25.0	-24.57	164.10	Vertical	Vertical	Pass
2931.750	-42.61	20.31	-25.0	-17.61	170.30	Vertical	Vertical	Pass
4870.500	-49.74	5.63	-25.0	-24.74	239.80	Vertical	Vertical	Pass

RSE-Mode18-466.50000-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
427.579	-72.15	3.17	-25.0	-47.15	342.00	Horizontal	Vertical	Pass
623.276	-68.07	7.28	-25.0	-43.07	0.40	Horizontal	Vertical	Pass
920.096	-65.08	9.59	-25.0	-40.08	294.10	Horizontal	Vertical	Pass
1867.750	-49.45	14.50	-25.0	-24.45	104.20	Horizontal	Vertical	Pass
2954.000	-41.96	21.01	-25.0	-16.96	41.50	Horizontal	Vertical	Pass
4753.000	-51.12	4.69	-25.0	-26.12	172.10	Horizontal	Vertical	Pass

RSE-Mode18-466.50000-High Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
151.977	-76.98	-1.68	-25.0	-51.98	265.10	Vertical	Vertical	Pass
568.350	-69.25	6.06	-25.0	-44.25	345.70	Vertical	Vertical	Pass
986.541	-64.28	10.49	-25.0	-39.28	136.90	Vertical	Vertical	Pass
1393.250	-50.42	13.77	-25.0	-25.42	284.90	Vertical	Vertical	Pass
2885.250	-42.66	20.18	-25.0	-17.66	270.00	Vertical	Vertical	Pass
4818.750	-50.00	5.51	-25.0	-25.00	107.60	Vertical	Vertical	Pass

RSE-Mode18-511.99375-High Power-H

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
437.158	-71.61	3.72	-25.0	-46.61	45.00	Horizontal	Vertical	Pass
627.762	-67.80	7.27	-25.0	-42.80	20.90	Horizontal	Vertical	Pass
968.475	-65.64	9.38	-25.0	-40.64	194.20	Horizontal	Vertical	Pass
1892.000	-50.19	14.55	-25.0	-25.19	249.00	Horizontal	Vertical	Pass
2917.750	-43.04	20.77	-25.0	-18.04	174.90	Horizontal	Vertical	Pass
4631.250	-50.68	4.65	-25.0	-25.68	6.60	Horizontal	Vertical	Pass

RSE-Mode18-511.99375-High Power-V

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
113.541	-77.35	-2.22	-25.0	-52.35	62.20	Vertical	Vertical	Pass
559.256	-69.13	6.42	-25.0	-44.13	157.30	Vertical	Vertical	Pass
941.558	-64.51	10.16	-25.0	-39.51	62.20	Vertical	Vertical	Pass
1779.250	-49.23	12.21	-25.0	-24.23	266.90	Vertical	Vertical	Pass
2870.250	-43.30	20.12	-25.0	-18.30	177.10	Vertical	Vertical	Pass
4812.750	-50.10	5.50	-25.0	-25.10	226.20	Vertical	Vertical	Pass

Note: $EIRP = P_{Mea}(dBm) - P_{cl}(dB) + G_a(dBi)$

We were not recorded other points as values lower than limits

7. SPURIOUS EMISSION ON ANTENNA PORT

7.1 PROVISIONS APPLICABLE

According to the TIA/EIA 603 test method, and according to Section 90.210, the power of each unwanted emission shall be less than Transmitted Power as specified below for transmitters designed to operate with 12.5 KHz channel bandwidth:

- (1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of 4 kHz or less: Zero dB.
- (2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 4 kHz, but no more than 8.5 kHz: At least $107 \log (f_d/4)$ dB;
- (3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 8.5 kHz, but no more than 15 kHz: At least $40.5 \log (f_d/1.16)$ dB;
- (4) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 15 kHz, but no more than 25 kHz: At least $116 \log (f_d/6.1)$ dB;
- (5) On any frequency removed from the center of the authorized bandwidth by more than 25 kHz: At least $43 + 10 \log (P)$ dB.

For transmitters designed to transmit with 25 KHz channel separation and equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as following:

- (1) On any frequency removed from the assigned frequency by more than 75 kHz, the attenuation of any emission must be at least $43 + 10 \log (P_{\text{watts}})$ dB.

7.2 MEASUREMENT PROCEDURE

- a. The EUT was connected to the spectrum analyzer through sufficient attenuation.
- b. Sufficient scans were taken to show any out of band emission up to 10th. Harmonic for the lower and the highest frequency range.
- c. Set EUT as digital data mode.
- d. Set RBW 100kHz, VBW 300 kHz in the frequency band 30MHz to 1GHz, while set RBW=1MHz, VBW=3MHz from the 1GHz to 10th Harmonic.

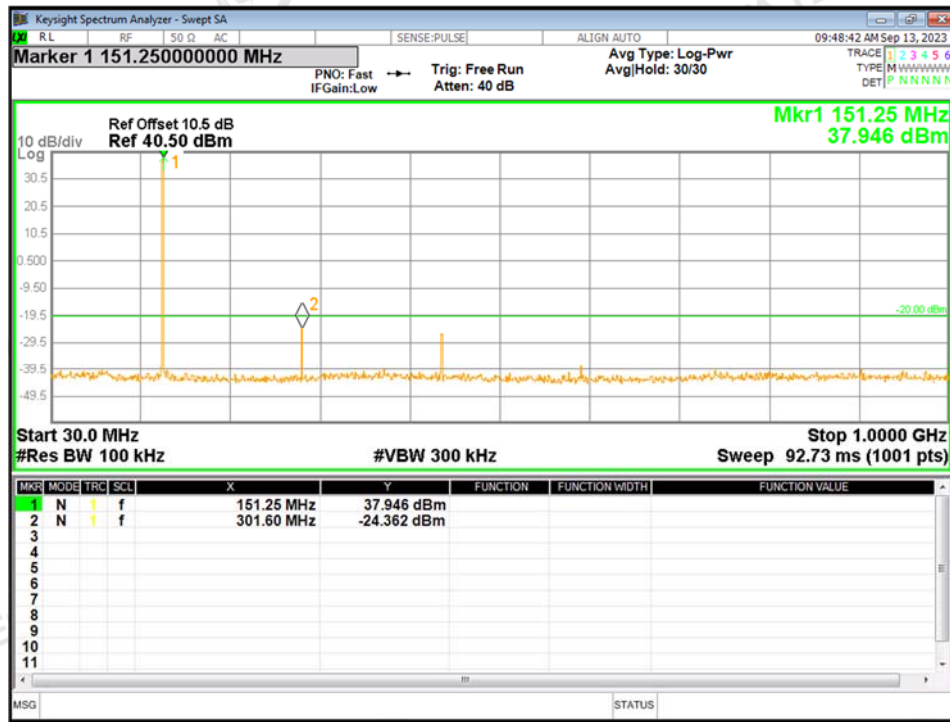
7.3 TEST SETUP BLOCK DIAGRAM



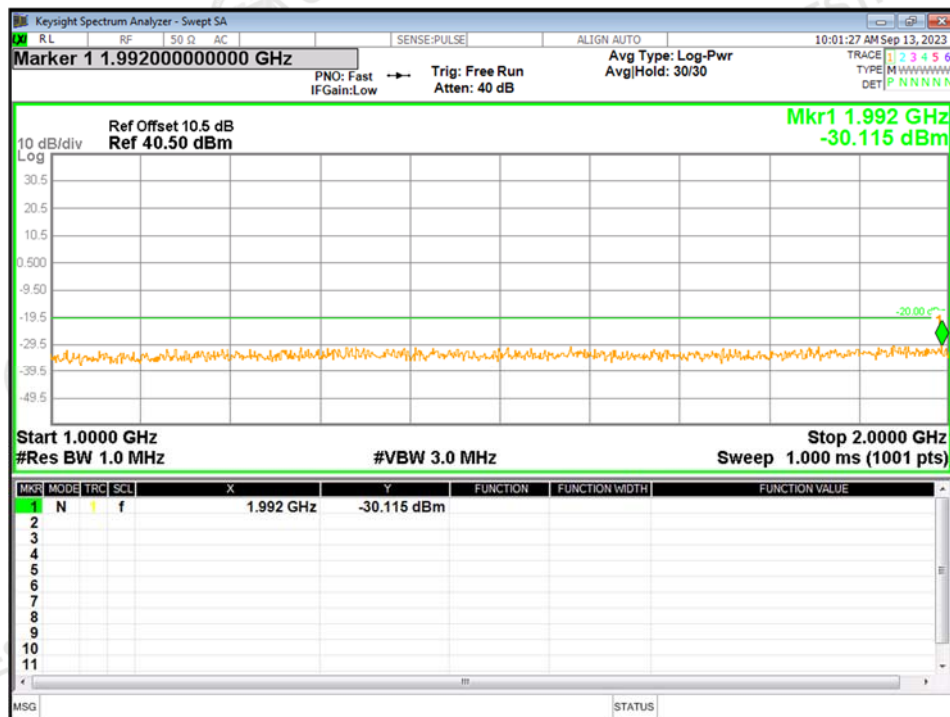
7.4 TEST RESULT

12.5 kHz:

Mode2-150.8125MHz 30MHz-1GHz



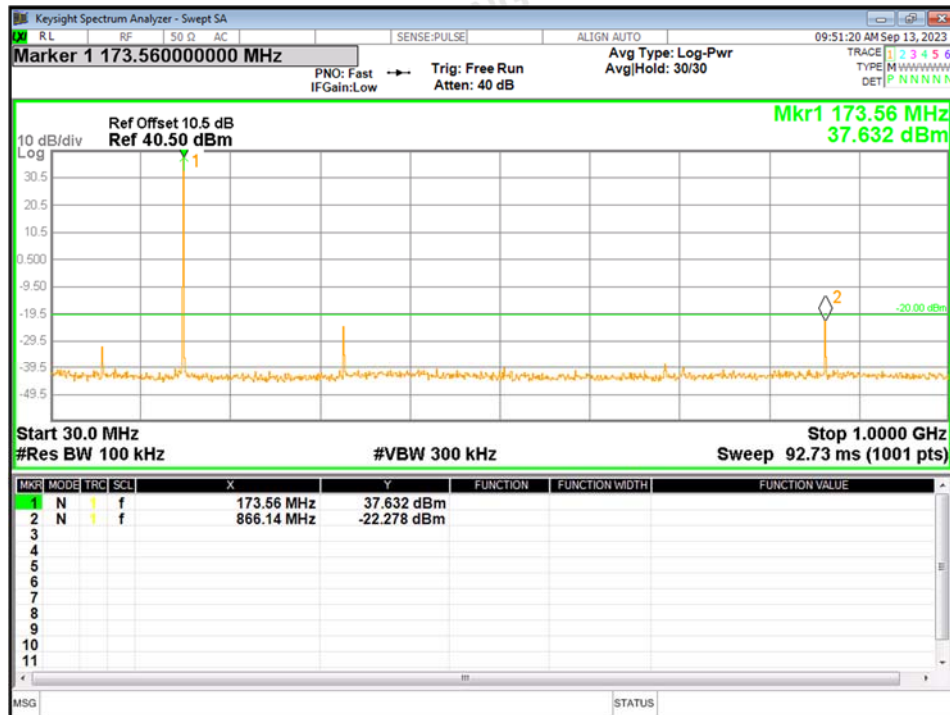
Mode2-150.8125MHz 1GHz-2GHz



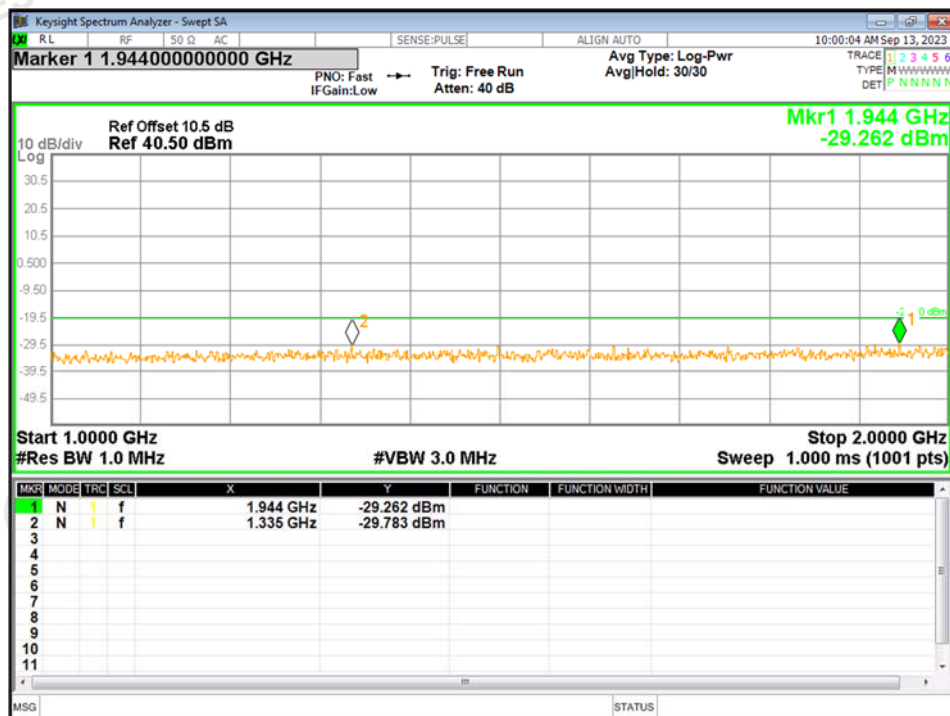
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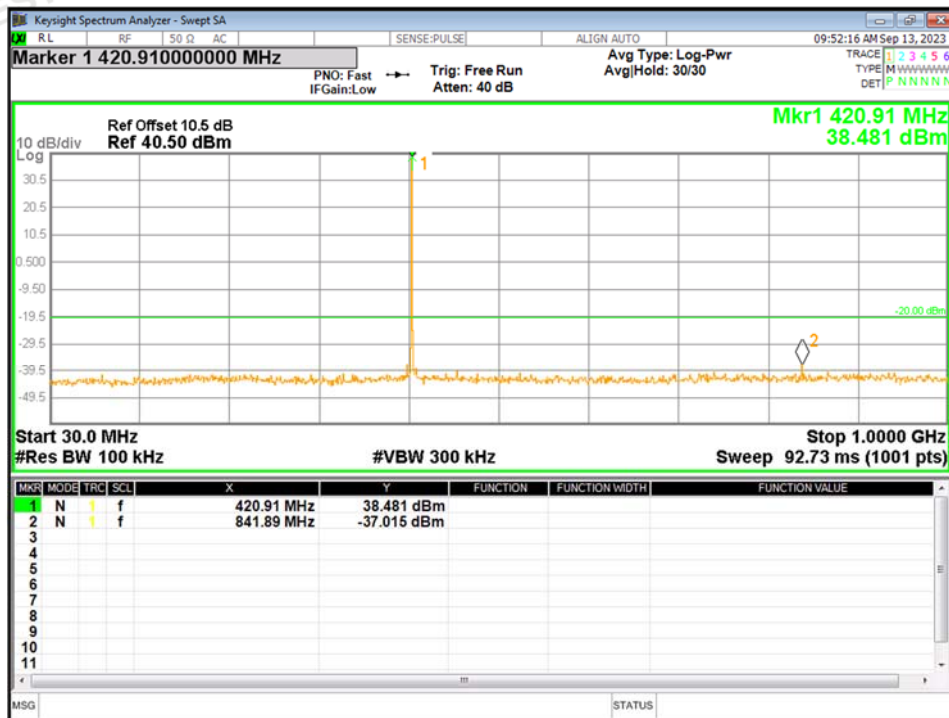
Mode4-173.3MHz 30MHz-1GHz



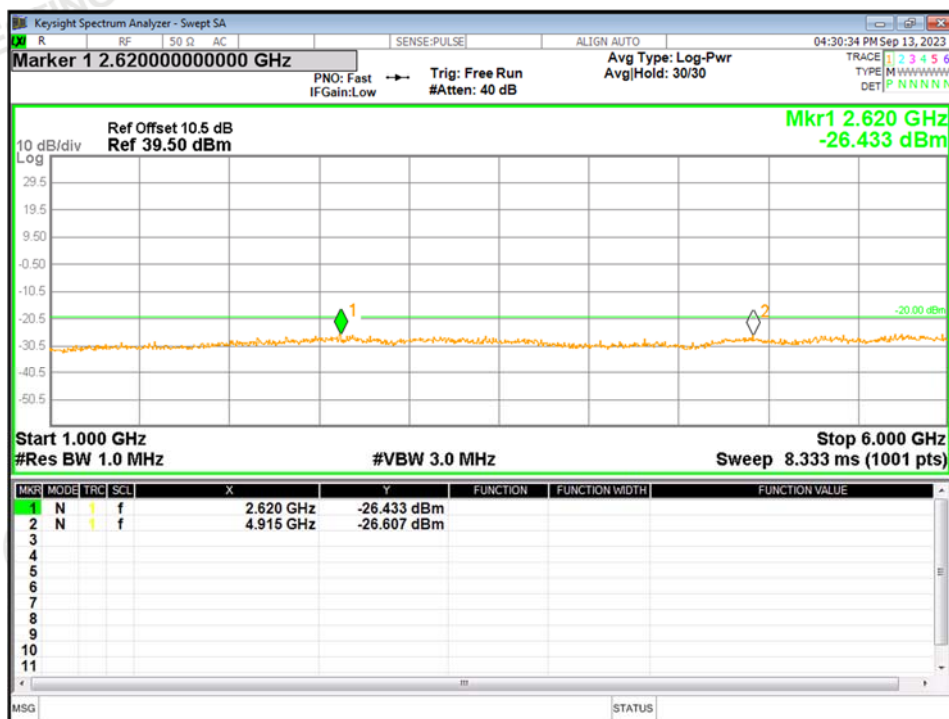
Mode4-173.3MHz 1GHz-2GHz



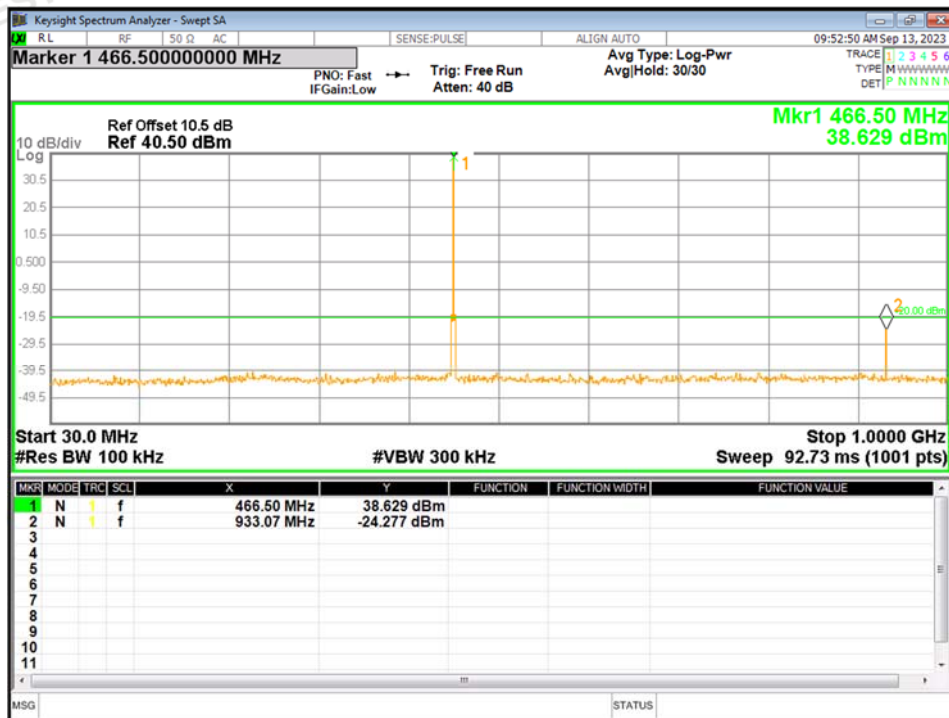
Mode6-421.0125MHz 30MHz-1GHz



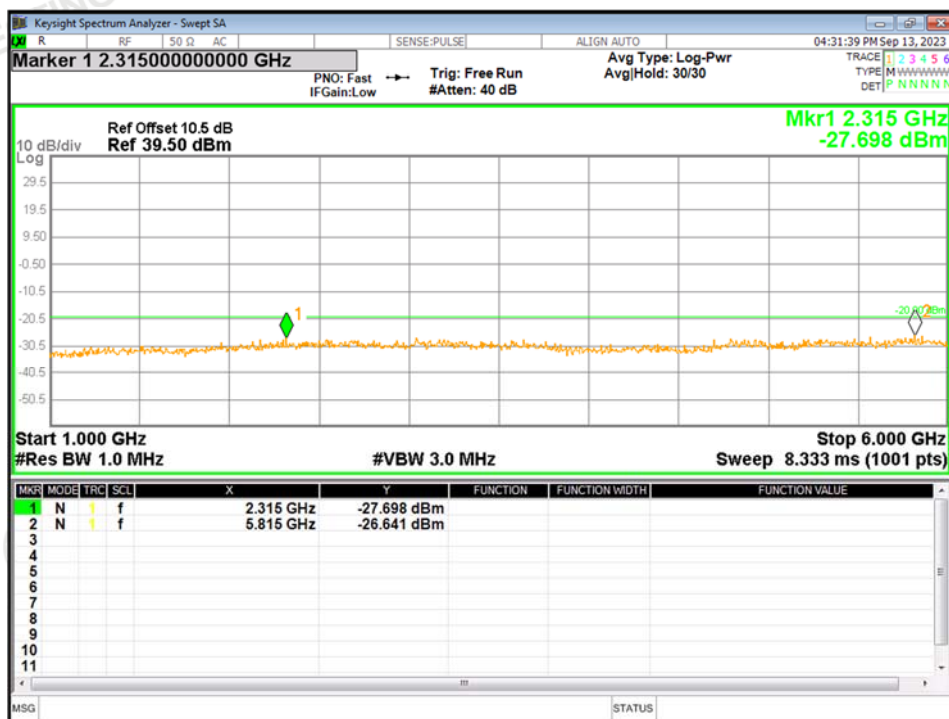
Mode6-421.0125MHz 1GHz-6GHz



Mode6-466.5MHz 30MHz-1GHz

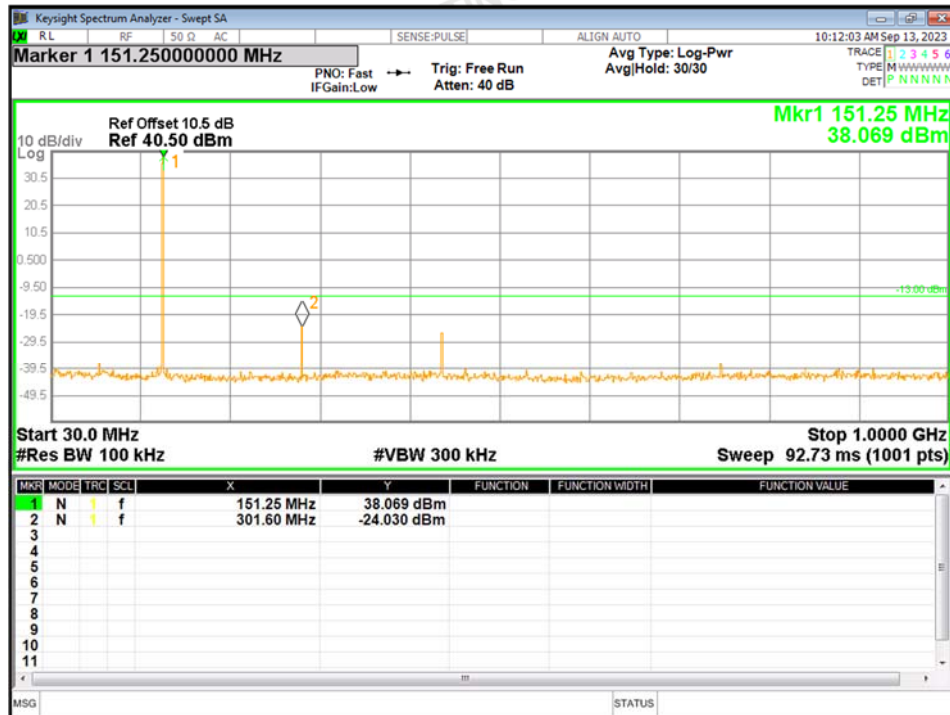


Mode6-466.5MHz 1GHz-6GHz

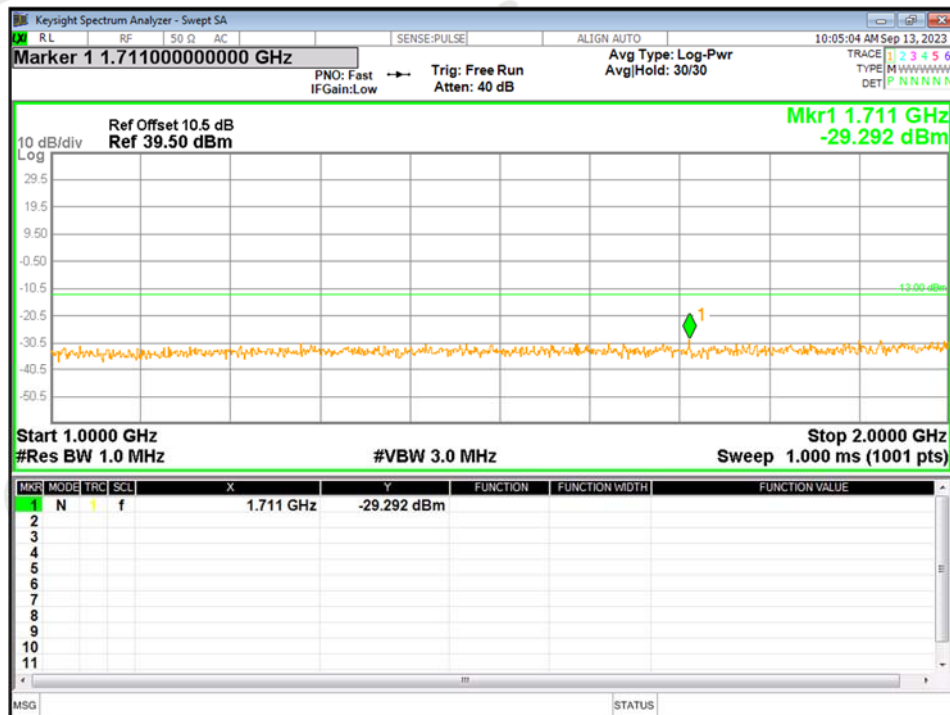


25 kHz:

Mode8-150.825MHz 30MHz-1GHz



Mode8-150.825MHz 1GHz-2GHz



[illegible][illegible]

Keysight Spectrum Analyzer - Swept SA

RL 50 Ω AC SENSE:PULSE ALIGN AUTO 10:11:10 AM Sep 13, 2023

Marker 1 161.92000000 MHz

PNO: Fast Trig: Free Run Avg Type: Log-Pwr
IF Gain: Low Atten: 40 dB Avg/Hold: 30/30

TRACE 1 2 3 4 5
TYPE M
DET P N N N N N

Ref Offset 10.5 dB
Ref 40.50 dBm

Mkr1 161.92 MHz
38.380 dBm

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	161.92 MHz	38.380 dBm			
2	N	1	f	323.91 MHz	-18.749 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								

Start 30.0 MHz Stop 1.0000 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 92.73 ms (1001 pts)

[illegible]

