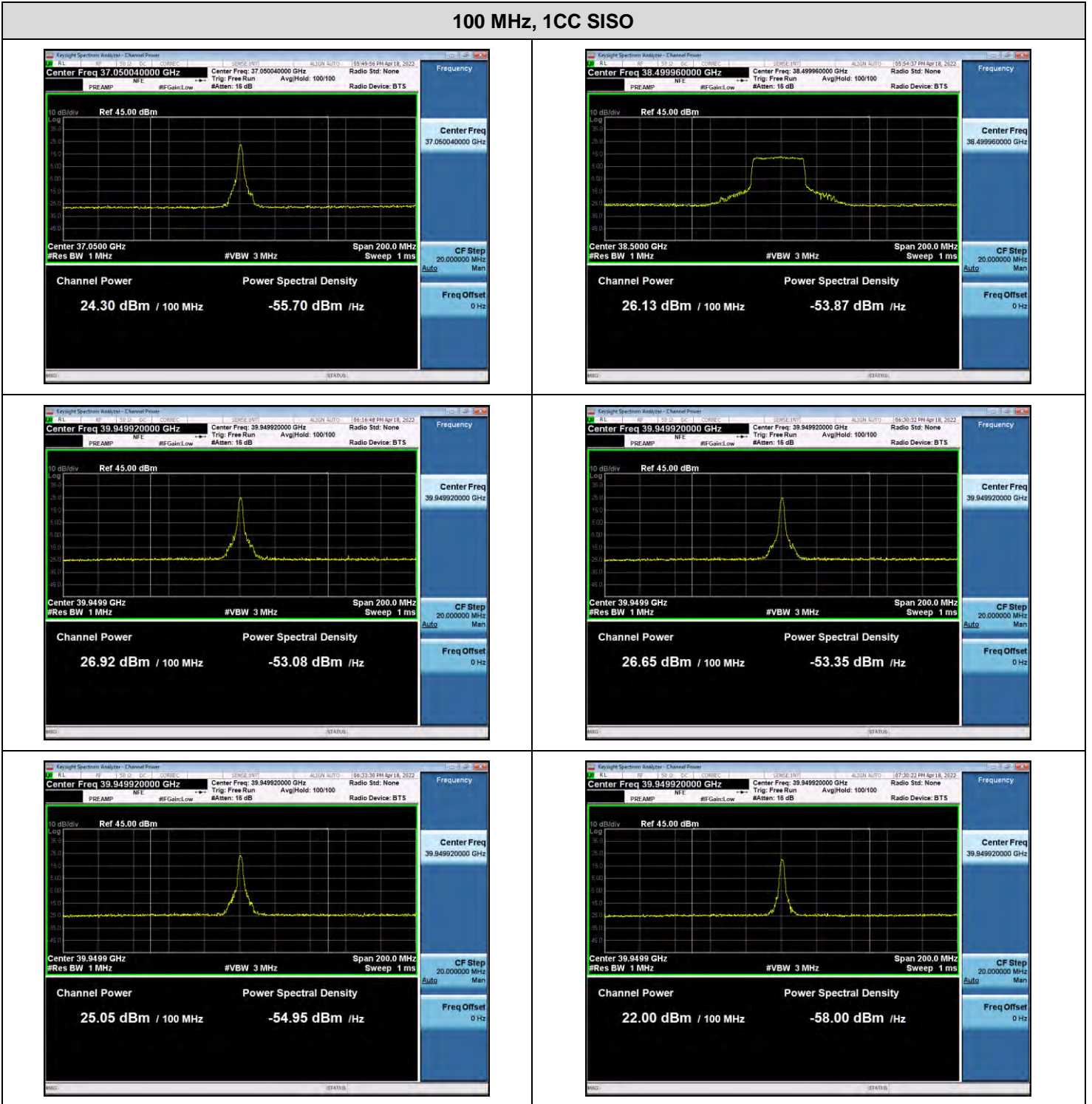


100 MHz, 1CC SISO



50 MHz, 2CC SISO

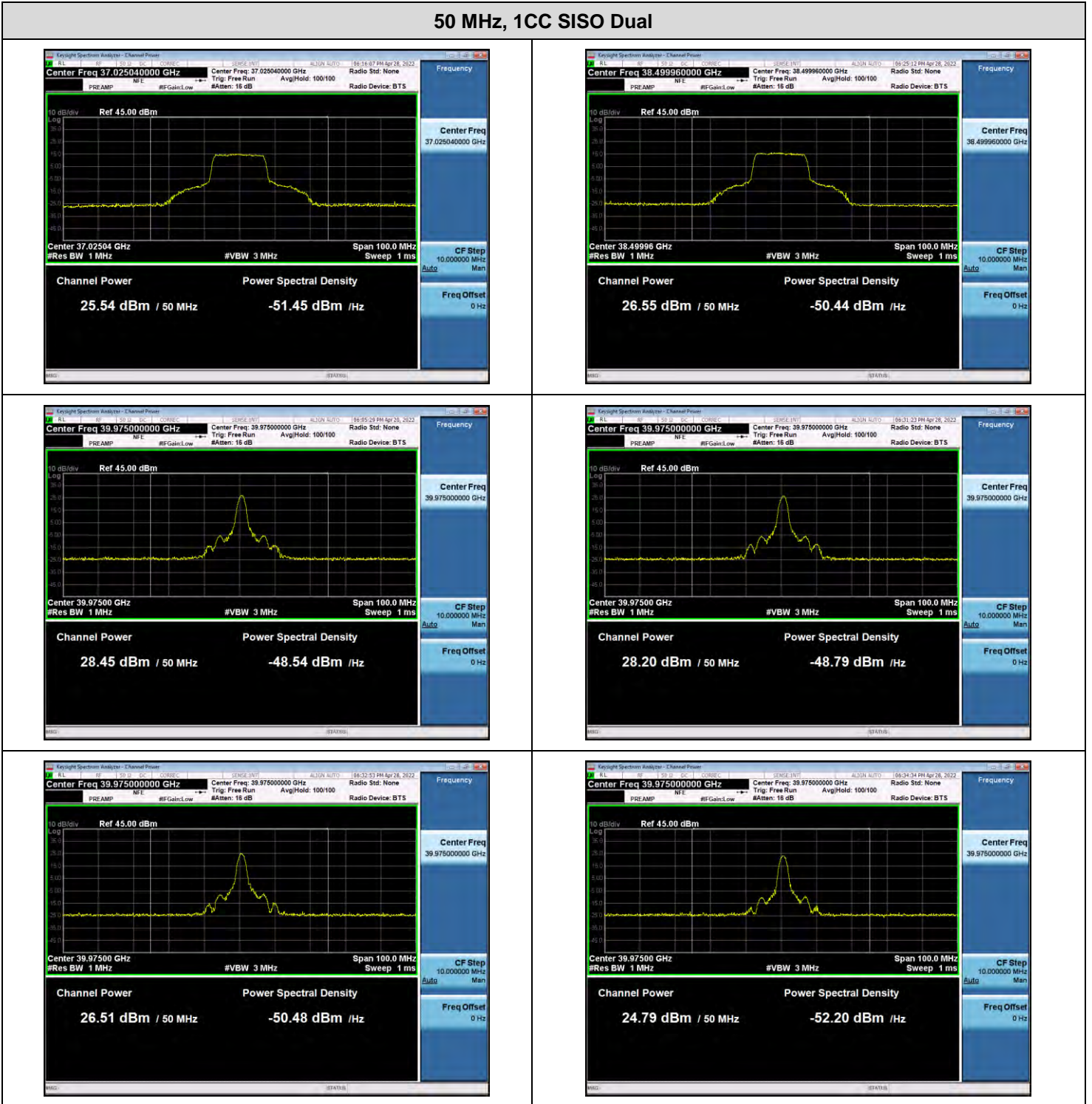




**100 MHz, 2CC SISO**



**50 MHz, 1CC SISO Dual**





**100 MHz, 1CC SISO Dual**



50 MHz, 2CC SISO Dual



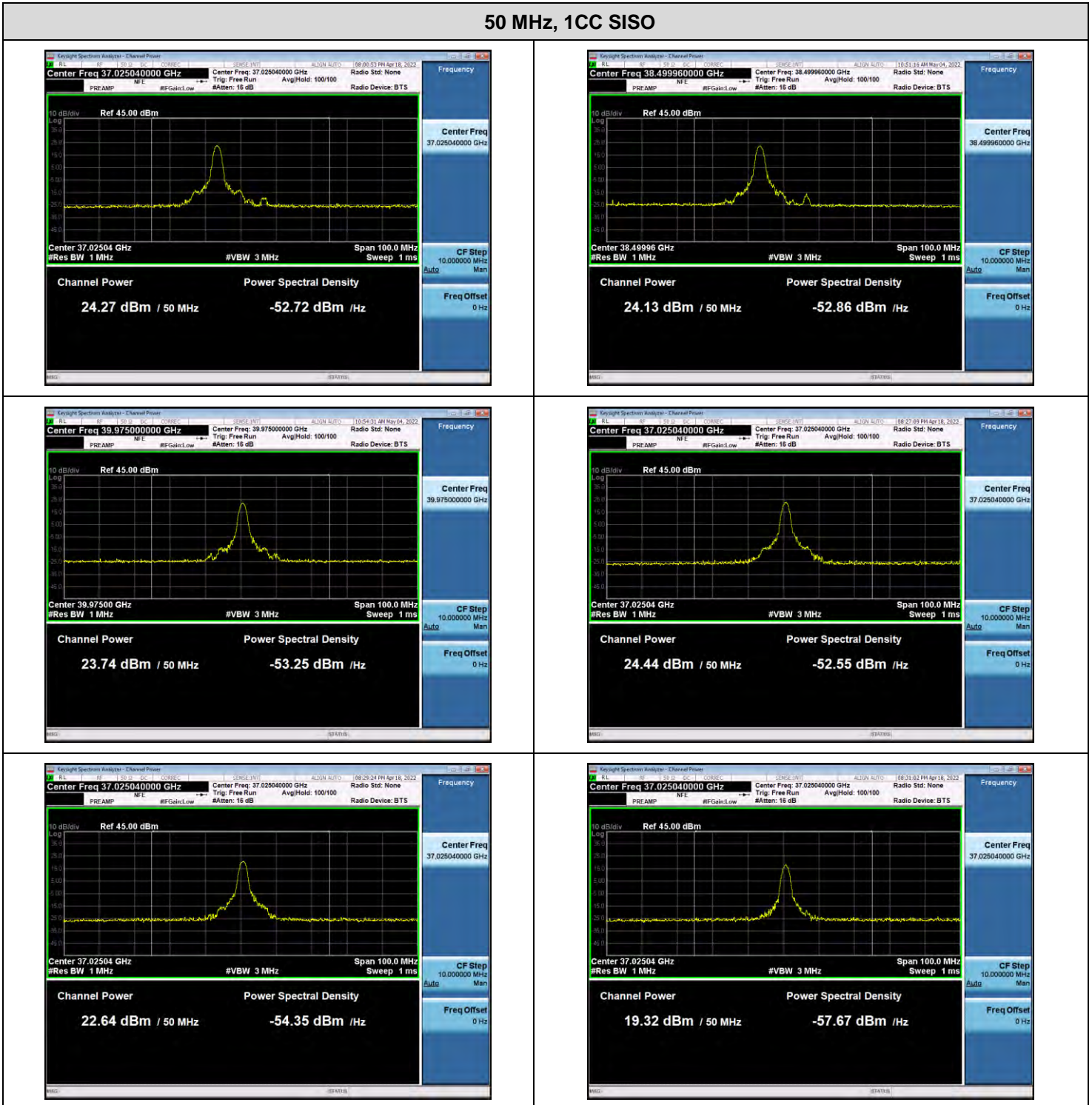


**100 MHz, 2CC SISO Dual**



4. L patch: module 1, n260

50 MHz, 1CC SISO





100 MHz, 1CC SISO



**50 MHz, 2CC SISO**

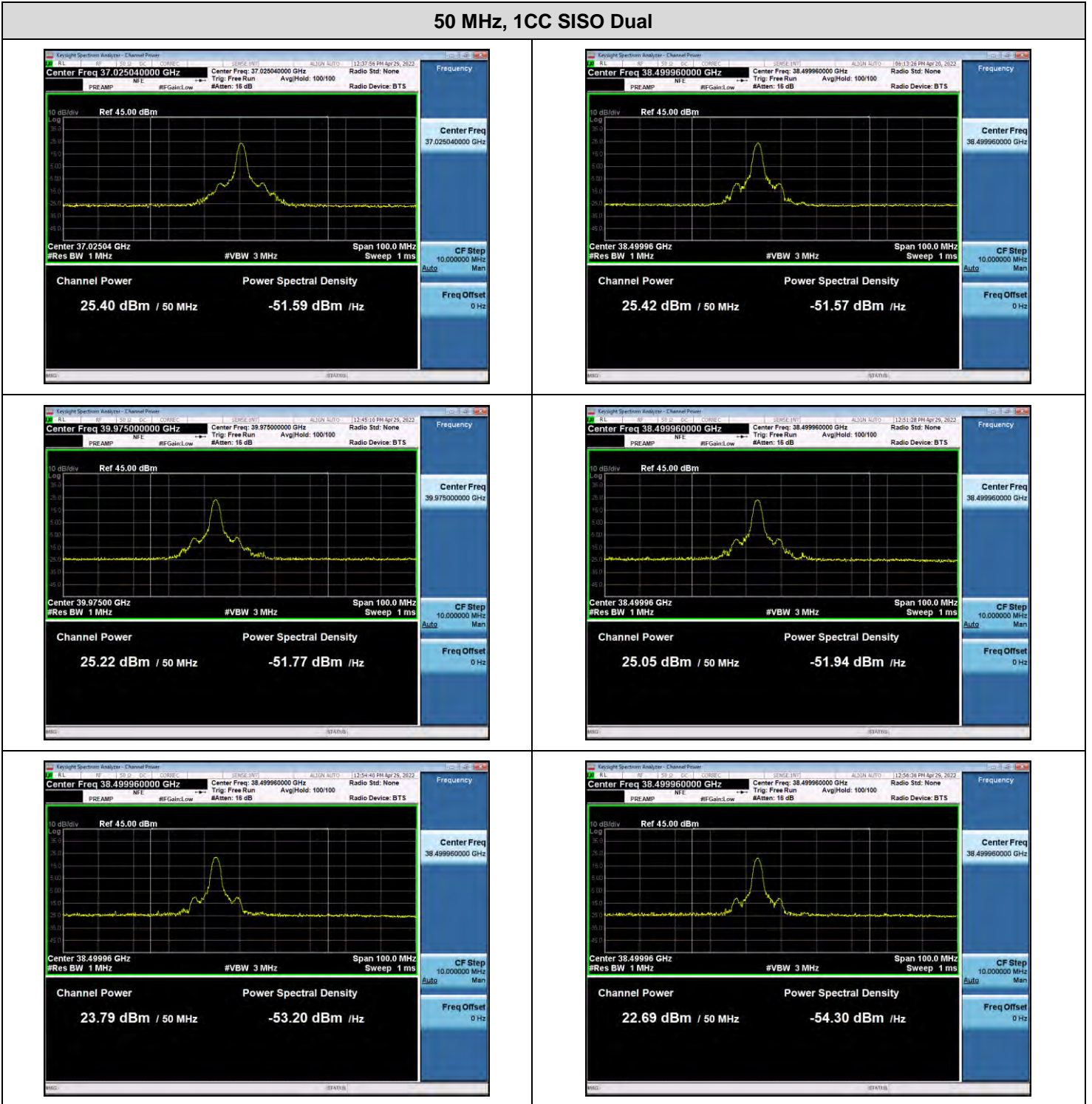




**100 MHz, 2CC SISO**

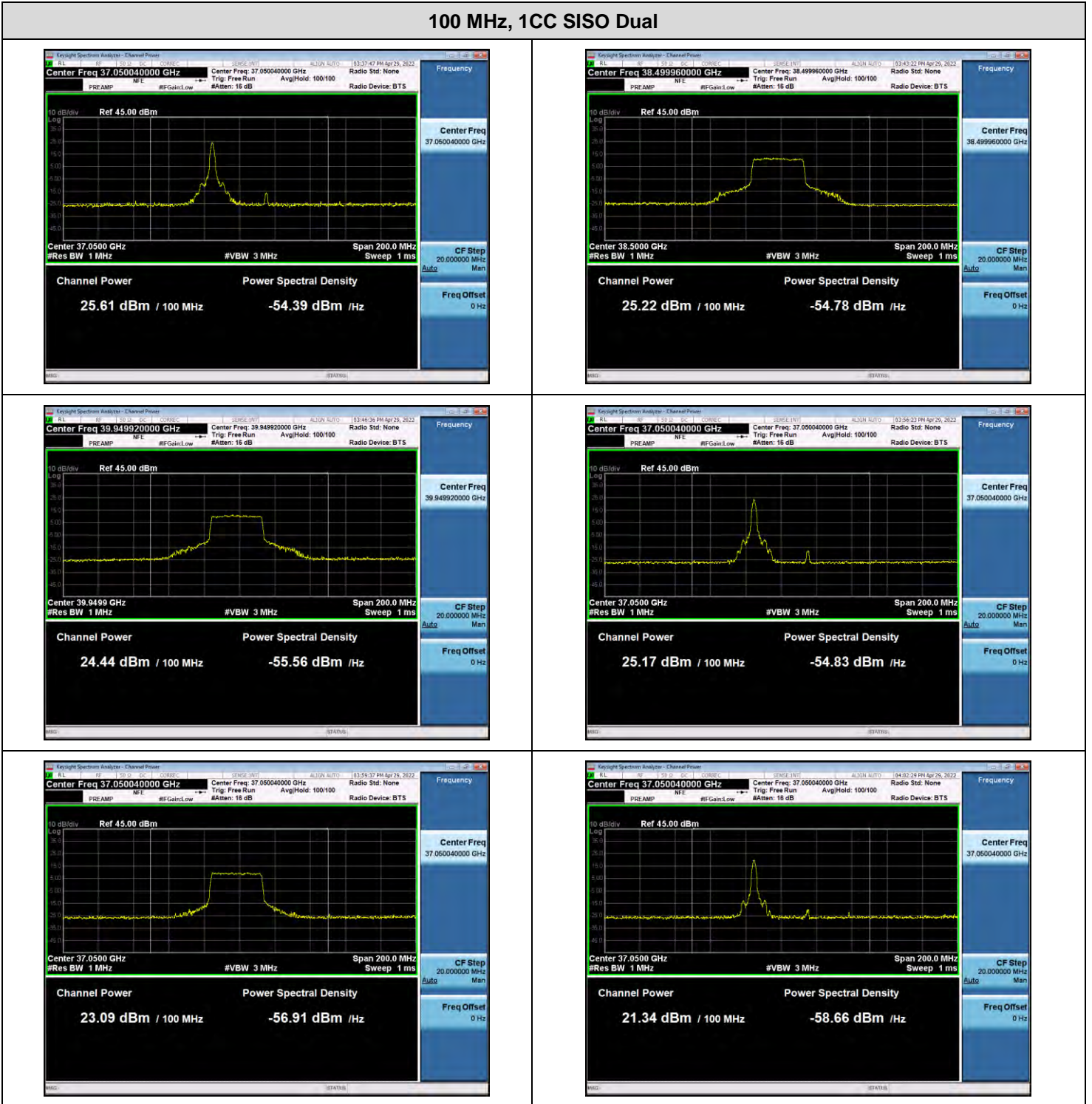


**50 MHz, 1CC SISO Dual**





**100 MHz, 1CC SISO Dual**



**50 MHz, 2CC SISO Dual**





**100 MHz, 2CC SISO Dual**



### 5.3. BAND EDGE

#### Test Overview

All out of band emissions are measured in a radiated setup while the EUT is operating at maximum power, and at the appropriate frequencies. All modulations were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

The minimum permissible attenuation level of any spurious emission is -13dBm/1MHz. However, in the bands immediately outside and adjacent to the licensee's frequency block, having a bandwidth equal to 10 percent of the channel bandwidth, the conductive power or the total radiated power of any emission shall be -5 dBm/MHz or lower.

#### FCC Rules

#### Test Requirements:

#### § 30.203 Emission limits.

- (a) The conductive power or the total radiated power of any emission outside a licensee's frequency block shall be -13 dBm/MHz or lower. However, in the bands immediately outside and adjacent to the licensee's frequency block, having a bandwidth equal to 10 percent of the channel bandwidth, the conductive power or the total radiated power of any emission shall be -5 dBm/MHz or lower.
- (b)(1) Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater.
- (2) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges as the design permits.
- (3) The measurements of emission power can be expressed in peak or average values.

#### Test Procedures:

The measurement is performed in accordance with Section 5.7.3 of ANSI C63.26.

##### 5.7.3 Out-of-band unwanted emissions measurements

- a) Set the spectrum analyzer center frequency to the block, band, or channel edge frequency.
- b) Set the span wide enough to capture the fundamental emission closest to the authorized block or band edge, and to include all modulation products that spill into the immediately adjacent frequency band. In some cases, it may be possible to set the center frequency and span so as to encompass the fundamental emission and the unwanted out-of-band (band-edge) emissions on either side of the authorized block, band, or channel. This can be accomplished with a single (slow) sweep, if adequate overload protection and sufficient dynamic range can be maintained.
- c) Set the number of points in sweep  $\geq 2 \times \text{span} / \text{RBW}$ .



d) Sweep time should be auto for peak detection. For rms detection the sweep time should be set as follows:

1), 2) Omitted

3) If the device cannot be configured to transmit continuously (duty cycle < 98%) and a free running sweep must be used, set the sweep time so that the averaging is performed over multiple on/off cycles by setting the sweep time > (number of points in sweep) × (transmitter period) (i.e., the transmit on-time + the off-time). The spectrum analyzer readings shall subsequently be corrected by  $[10 \log (1/\text{duty cycle})]$ . This assumes that the transmission period and duty cycle is relatively constant (duty cycle variation  $\leq \pm 2\%$ ).

4) Omitted

e) The test report shall include the plots of the measuring instrument display and the measured data.

- The TRP measurement is performed in accordance with Section 4.4.2.4 of KDB 842590 v01r02 (2021-04).

#### 4.4.2.4 Spherical Grid Method

a) Measure the antenna dimensions, i.e., depth (d), width (w), and height (h) (see Figure A.1 in Appendix A). If the antenna dimensions are not accessible use the mechanical dimensions of the entire device.

b) Calculate the spherical and cylindrical diameters (D and D<sub>cyl</sub>) using Equations (A.1) and (A.2) in Appendix A in KDB 842590 v01r02.

c) For the highest frequency (smallest wavelength) of the frequency band measured, calculate the reference angular steps  $\Delta\theta_{\text{ref}}$  and  $\Delta\theta_{\text{ref}}$  using Equations (A.3) and (A.4) in Appendix A in KDB 842590 v01r02.

d) Set the grid spatial sampling step  $\Delta\theta \leq \Delta\theta_{\text{ref}}$  for the vertical angle and  $\Delta\theta \leq \Delta\theta_{\text{ref}}$  for the horizontal angle.

e) For each emission frequency, measure the total EIRP (sum of two orthogonal polarizations) on the selected grid.

f) For each emission frequency, calculate the TRP using weighted angular average value using numerical integration as described in Appendix B in KDB 842590 v01r02.

g) Compare measured TRP with the applicable TRP limit to make a pass/fail decision.

**Test Results:**

**K patch: module 0, n261**

CCs active	BW	Mode	Frequency [MHz]	Channel	Beam Pol.	Modulation	Ant. Pol. [H/V]	RB Size/Offset	Band Edge [dBm]
1	50 MHz	SISO	27525.00	Low	V	BPSK	V	1/0	-12.019*
		SISO Dual	27525.00	Low	H+V	QPSK	H	32/0	-20.938
		SISO Dual	28324.92	High	H+V	QPSK	H	1/31	-14.233*
		SISO Dual	28324.92	High	H+V	QPSK	H	32/0	-18.726*
	100 MHz	SISO Dual	27550.08	Low	H+V	BPSK	H	1/0	-11.806*
		SISO Dual	27550.08	Low	H+V	QPSK	H	64/0	-23.672
		SISO Dual	28299.96	High	H+V	QPSK	H	1/65	-15.831*
		SISO Dual	28299.96	High	H+V	QPSK	H	64/0	-24.165
2	50 MHz	SISO Dual	27525.00	Low	H+V	BPSK	H	1/0	-17.594
		SISO Dual	27525.00	Low	H+V	BPSK	H	10/11	-22.401
		SISO Dual	28274.88	High	H+V	QPSK	H	1/31	-15.731
		SISO Dual	28274.88	High	H+V	BPSK	H	10/11	-24.348
	100 MHz	SISO	27550.08	Low	H	BPSK	H	1/22	-17.646
		SISO	27550.08	Low	H	BPSK	H	20/22	-23.652
		SISO Dual	28200.00	High	H+V	BPSK	H	1/43	-17.860
		SISO	28200.00	High	V	QPSK	V	20/22	-29.017

\* Note : Limit: -5 dBm



**L patch: module 1, n261**

CCs active	BW	Mode	Frequency [MHz]	Channel	Beam Pol.	Modulation	Ant. Pol. [H/V]	RB Size/Offset	Band Edge [dBm]
1	50 MHz	SISO Dual	27525.00	Low	H+V	BPSK	H	1/0	-13.654*
		SISO Dual	27525.00	Low	H+V	QPSK	H	32/0	-21.446*
		SISO Dual	28324.92	High	H+V	QPSK	H	1/31	-16.015*
		SISO Dual	28324.92	High	H+V	QPSK	H	32/0	-21.784*
	100 MHz	SISO	27550.08	Low	H	BPSK	H	1/0	-13.938*
		SISO Dual	27550.08	Low	H+V	QPSK	H	64/0	-26.249*
		SISO	28299.96	High	V	BPSK	V	1/65	-16.847*
		SISO	28299.96	High	H	BPSK	H	64/0	-30.137
2	50 MHz	SISO Dual	27525.00	Low	H+V	BPSK	H	1/11	-18.508
		SISO	27525.00	Low	H	BPSK	H	10/11	-23.915
		SISO Dual	28274.88	High	H+V	QPSK	H	1/21	-18.875
		SISO Dual	28274.88	High	H+V	QPSK	H	10/11	-25.638
	100 MHz	SISO	27550.08	Low	H	BPSK	H	1/22	-18.682
		SISO Dual	27550.08	Low	H+V	BPSK	H	20/22	-25.255
		SISO Dual	28200.00	High	H+V	QPSK	H	1/43	-20.201
		SISO	28200.00	High	H	QPSK	H	20/22	-30.800

\* Note : Limit: -5 dBm

**K patch: module 0, n260**

CCs active	BW	Mode	Frequency [MHz]	Channel	Beam Pol.	Modulation	Ant. Pol. [H/V]	RB Size/Offset	Band Edge [dBm]
1	50 MHz	SISO Dual	37025.04	Low	H+V	BPSK	H	1/0	-10.754*
		SISO	37025.04	Low	V	QPSK	H	32/0	-19.823*
		SISO Dual	39975.00	High	H+V	QPSK	V	1/31	-8.842*
		SISO Dual	39975.00	High	H+V	QPSK	V	32/0	-12.270*
	100 MHz	SISO Dual	37050.00	Low	H+V	BPSK	H	1/0	-12.061*
		SISO Dual	37050.00	Low	H+V	BPSK	H	64/0	-20.776*
		SISO Dual	39949.92	High	H+V	QPSK	V	1/63	-8.179*
		SISO	39949.92	High	H	QPSK	V	64/0	-16.845*
2	50 MHz	SISO Dual	37025.04	Low	H+V	BPSK	V	1/0	-17.656*
		SISO Dual	37025.04	Low	H+V	QPSK	H	32/0	-23.661
		SISO Dual	39924.96	High	H+V	QPSK	V	1/31	-15.001
		SISO Dual	39924.96	High	H+V	QPSK	V	32/0	-16.665*
	100 MHz	SISO Dual	37050.00	Low	H+V	BPSK	V	1/0	-19.452*
		SISO Dual	37050.00	Low	H+V	BPSK	V	64/0	-24.283
		SISO Dual	39849.96	High	H+V	BPSK	V	1/65	-14.470*
		SISO Dual	39849.96	High	H+V	BPSK	V	64/0	-19.932

\*Note : Limit: -5 dBm



**L patch: module 1, n260**

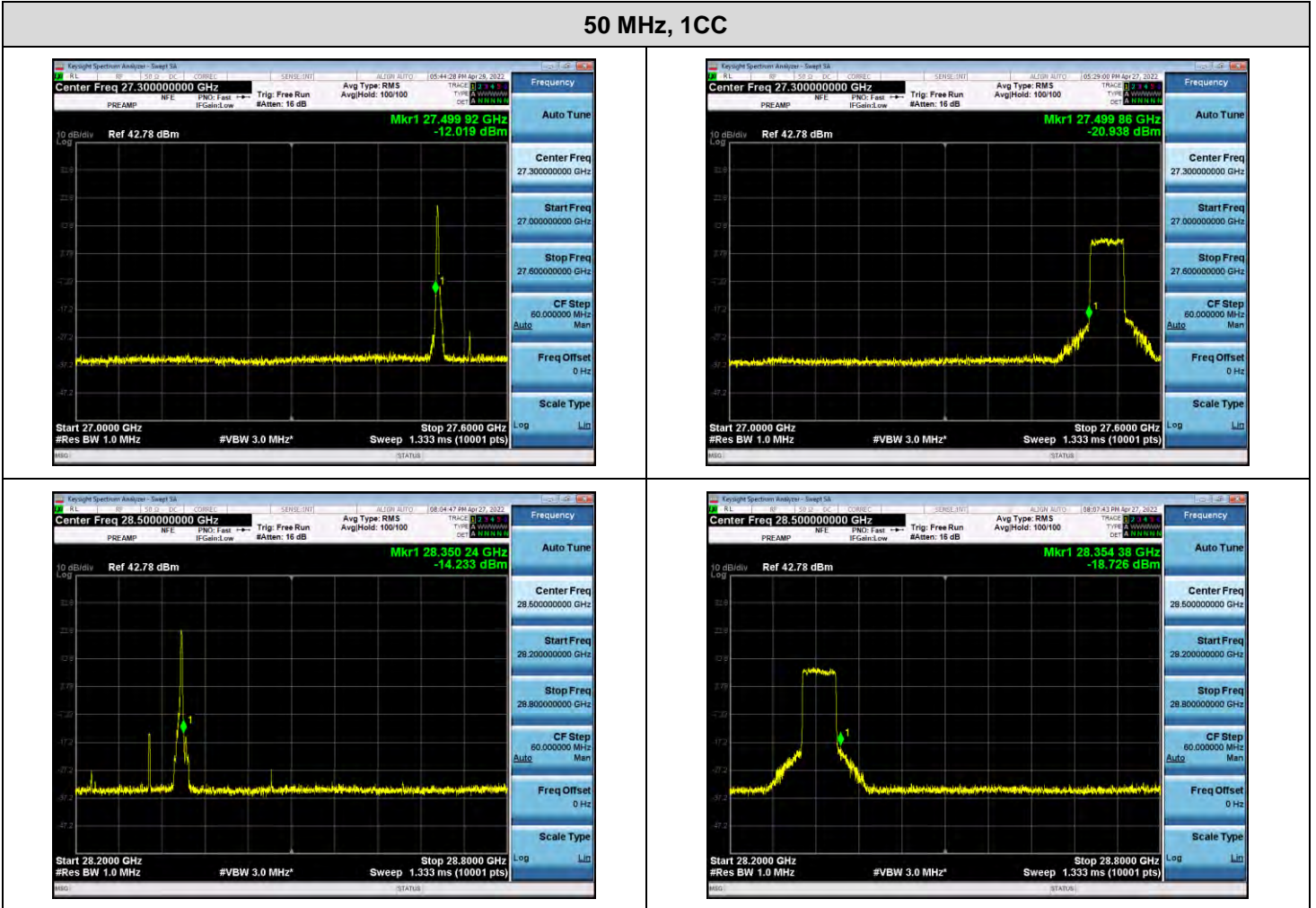
CCs active	BW	Mode	Frequency [MHz]	Channel	Beam Pol.	Modulation	Ant. Pol. [H/V]	RB Size/Offset	Band Edge [dBm]
1	50 MHz	SISO Dual	37025.04	Low	H+V	BPSK	V	1/0	-9.197*
		SISO Dual	37025.04	Low	H+V	QPSK	H	32/0	-17.738*
		SISO Dual	39975.00	High	H+V	QPSK	V	1/31	-10.585*
		SISO Dual	39975.00	High	H+V	QPSK	H	32/0	-14.285*
	100 MHz	SISO Dual	37050.00	Low	H+V	BPSK	H	1/0	-11.559*
		SISO Dual	37050.00	Low	H+V	QPSK	V	64/0	-20.011
		SISO Dual	39949.92	High	H+V	BPSK	H	1/65	-9.028*
		SISO Dual	39949.92	High	H+V	BPSK	V	64/0	-20.015
2	50 MHz	SISO Dual	37025.04	Low	H+V	BPSK	V	1/0	-15.917*
		SISO	37025.04	Low	H	QPSK	V	10/11	-24.172
		SISO	39924.96	High	H	QPSK	V	1/21	-17.479
		SISO	39924.96	High	H	QPSK	V	10/11	-19.808
	100 MHz	SISO Dual	37050.00	Low	H+V	BPSK	V	1/0	-17.827*
		SISO Dual	37050.00	Low	H+V	BPSK	V	64/0	-23.532
		SISO Dual	39849.96	High	H+V	BPSK	V	1/65	-17.594*
		SISO Dual	39849.96	High	H+V	BPSK	V	20/22	-18.828

\* **Note** : Limit: -5 dBm

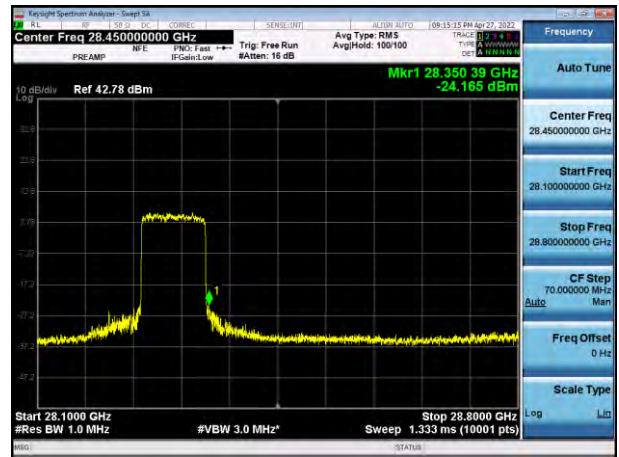
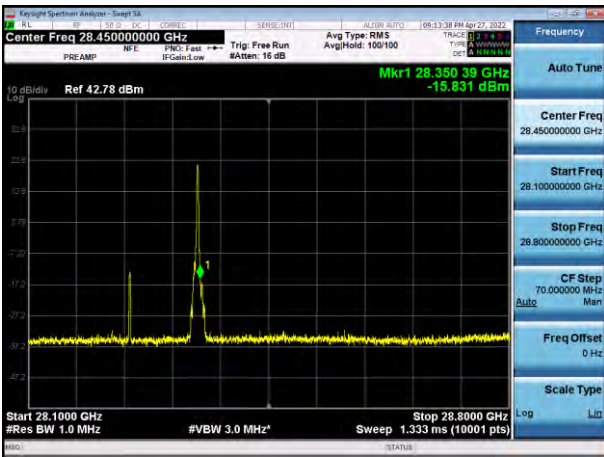
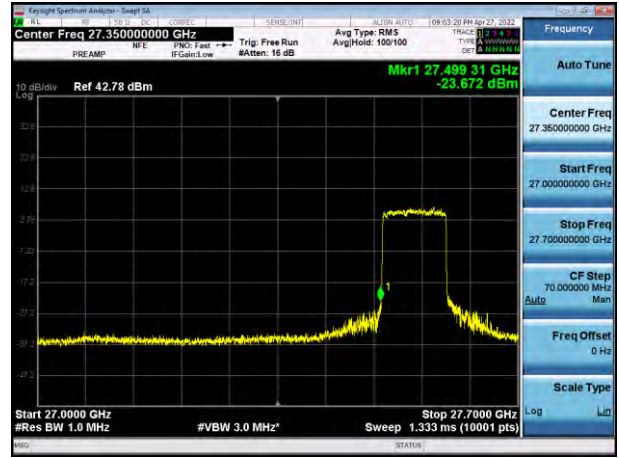
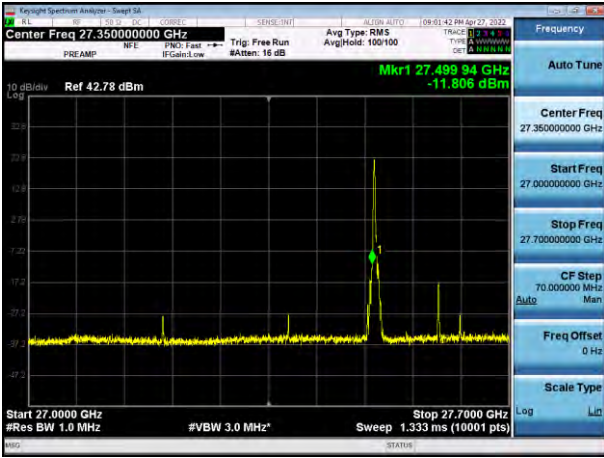
Plot data of Band Edge

1. K patch: module 0, n261

50 MHz, 1CC

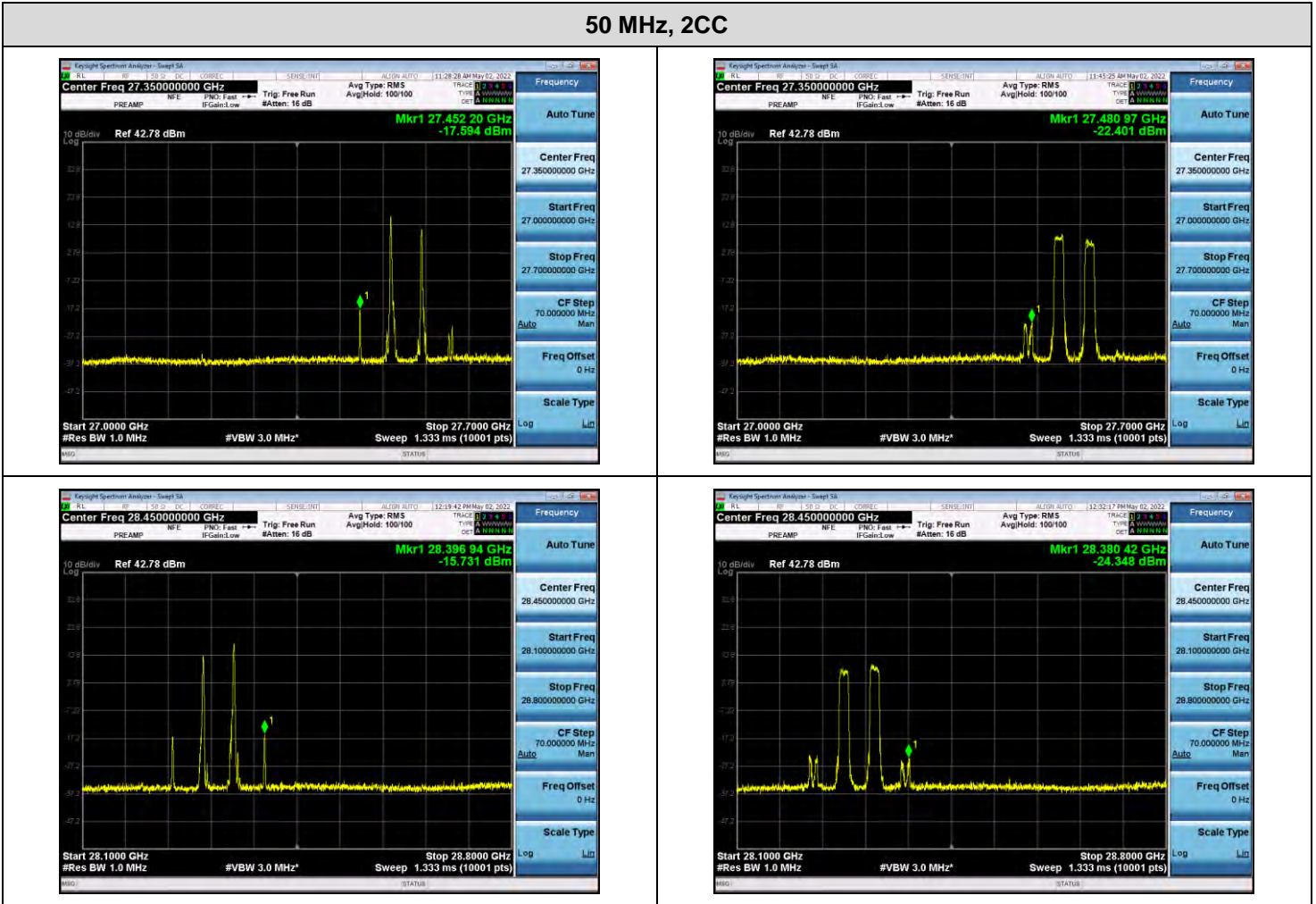


100 MHz, 1CC

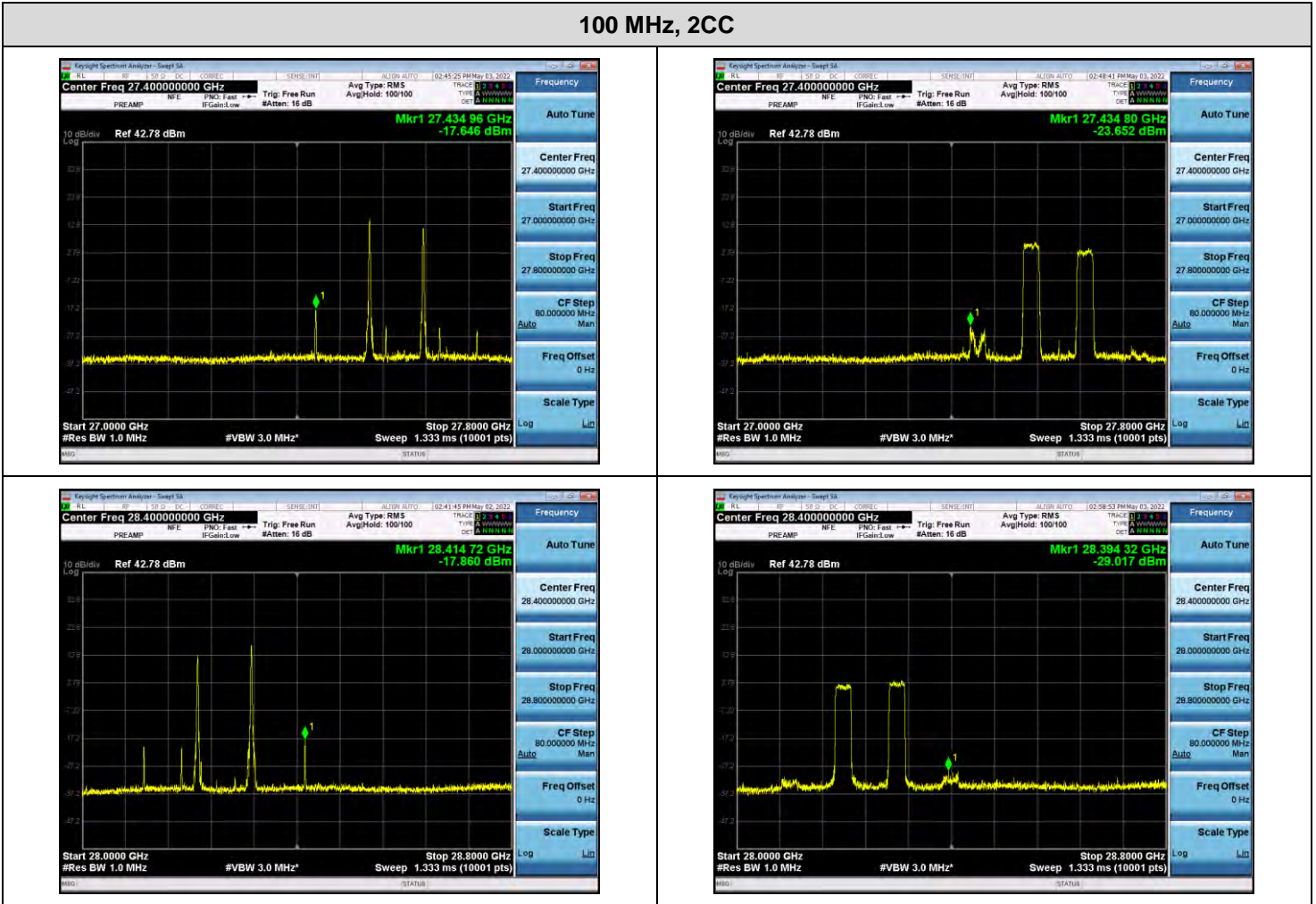




50 MHz, 2CC

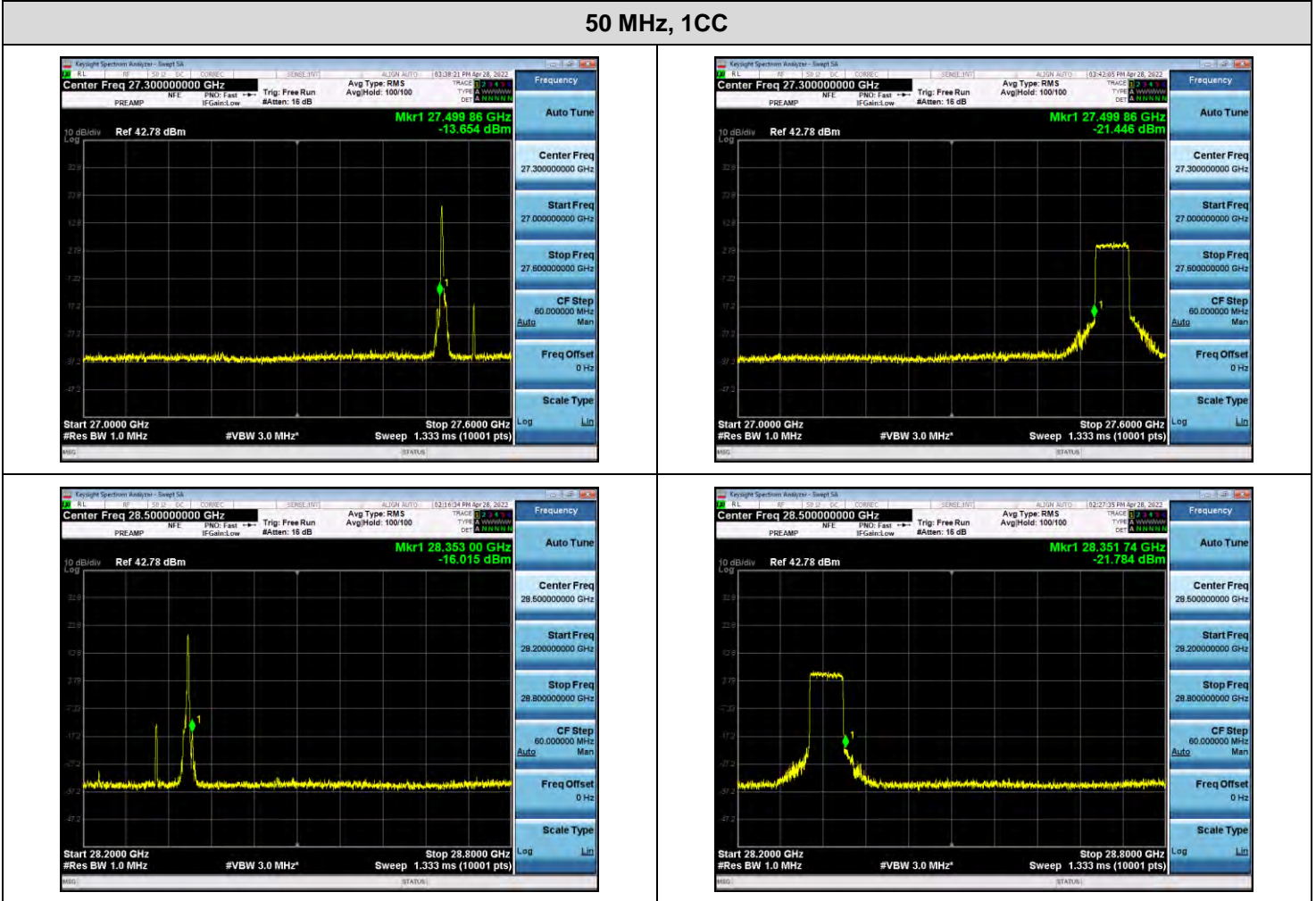


100 MHz, 2CC



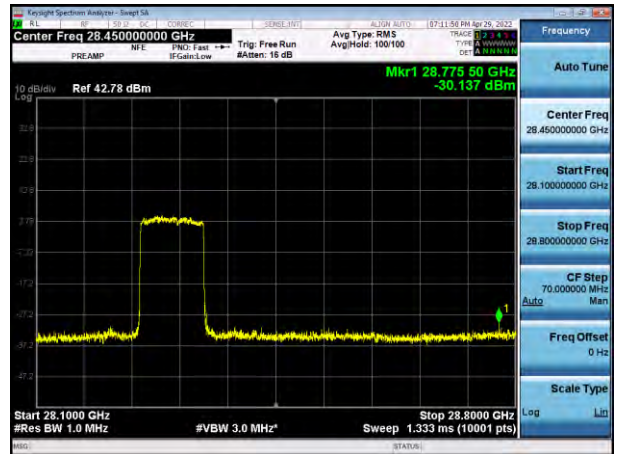
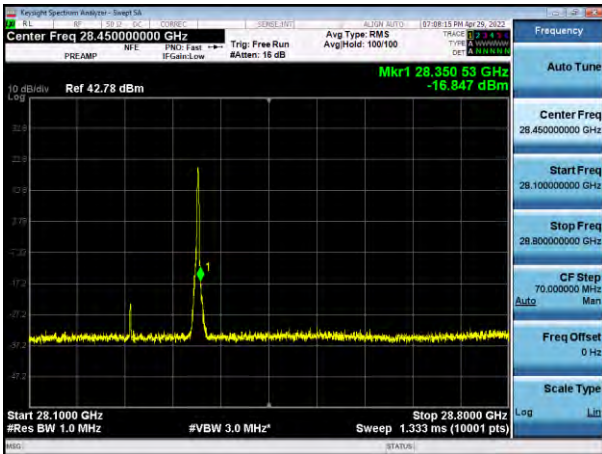
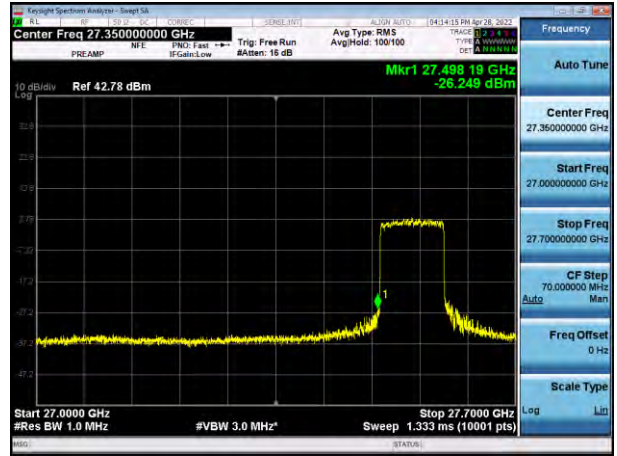
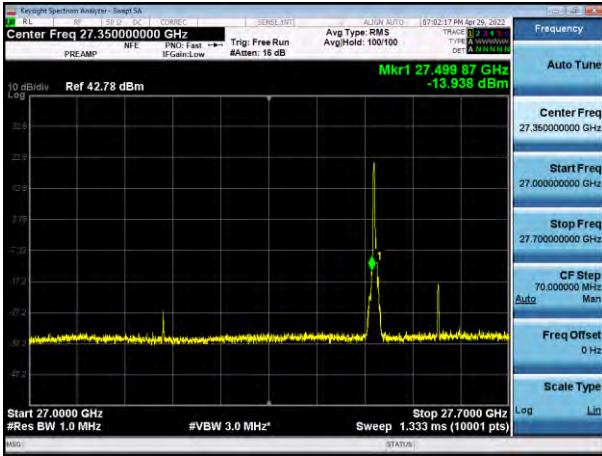
2. L patch: module 1, n261

50 MHz, 1CC

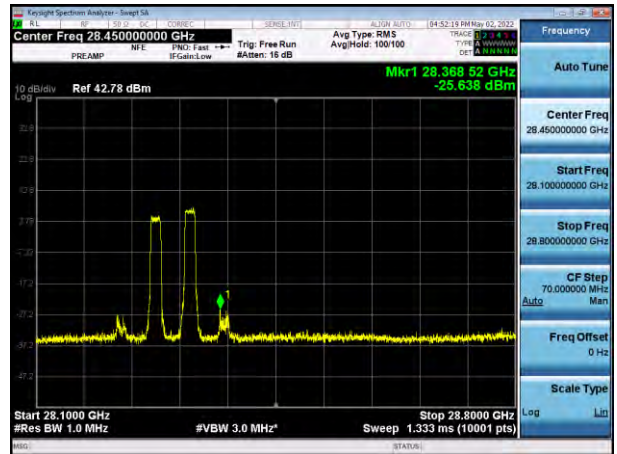
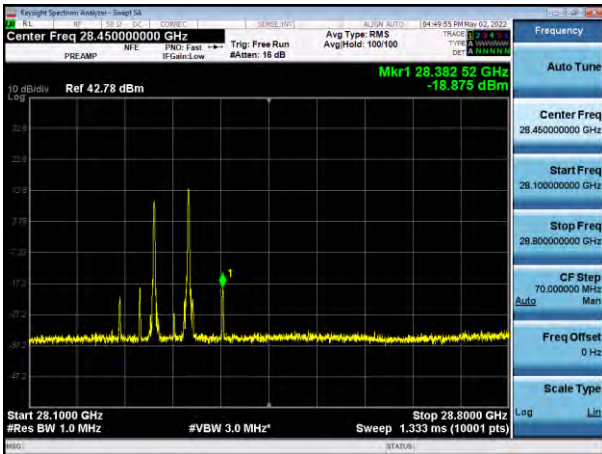
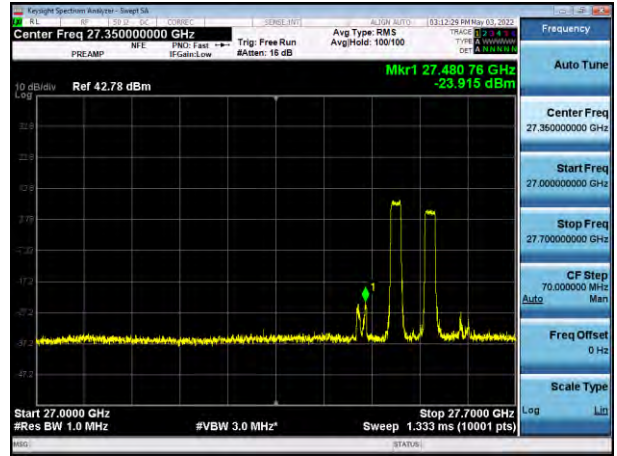
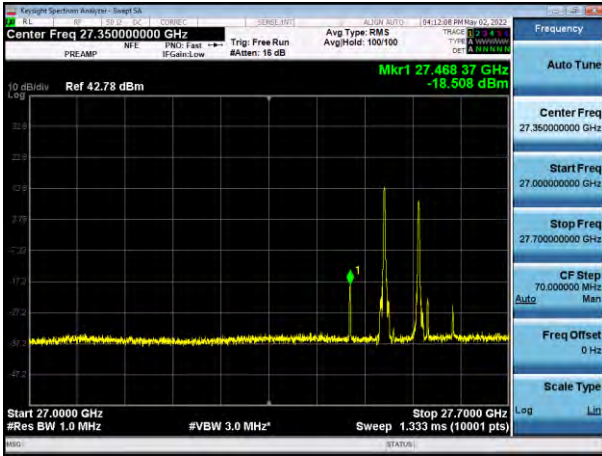




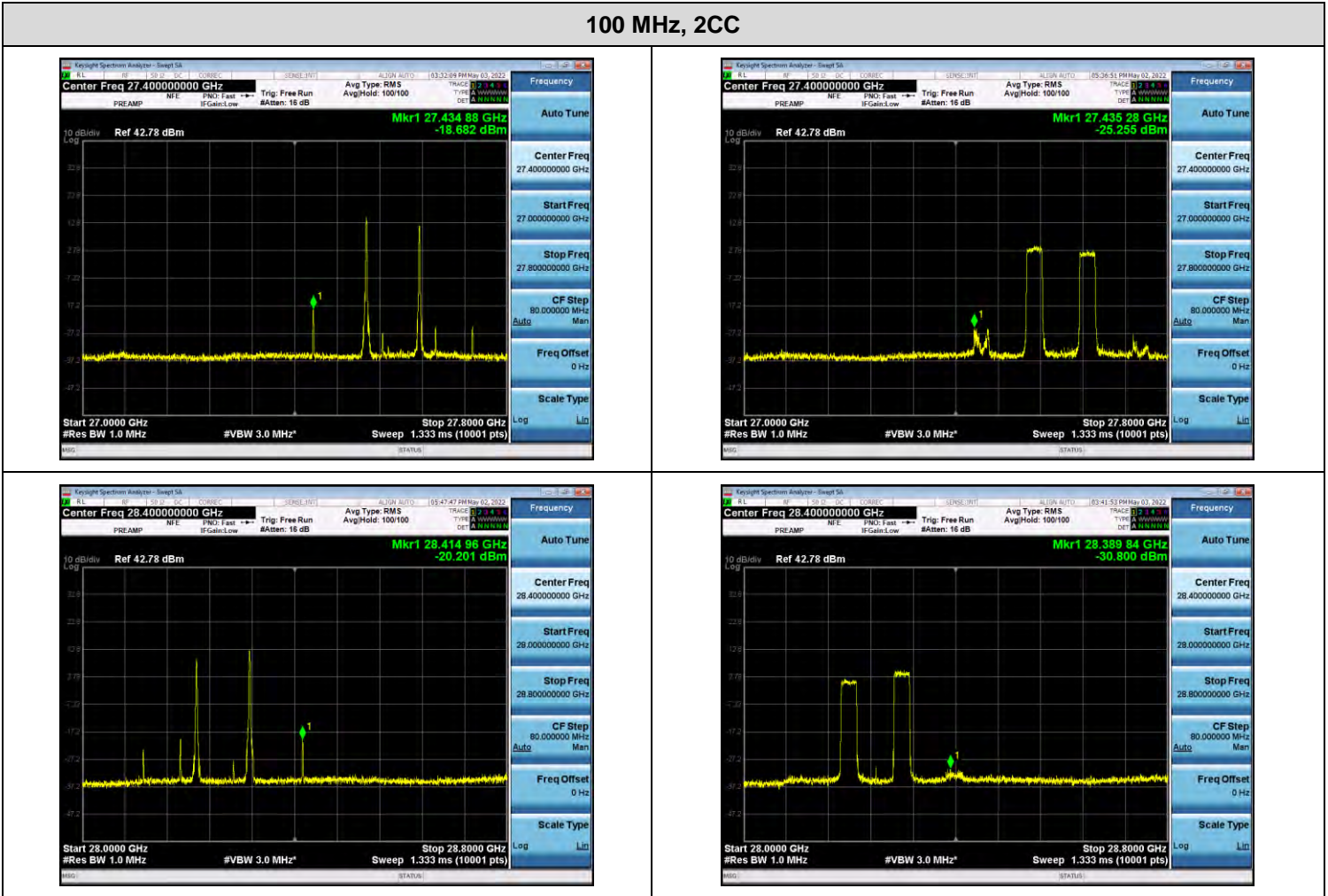
100 MHz, 1CC



50 MHz, 2CC



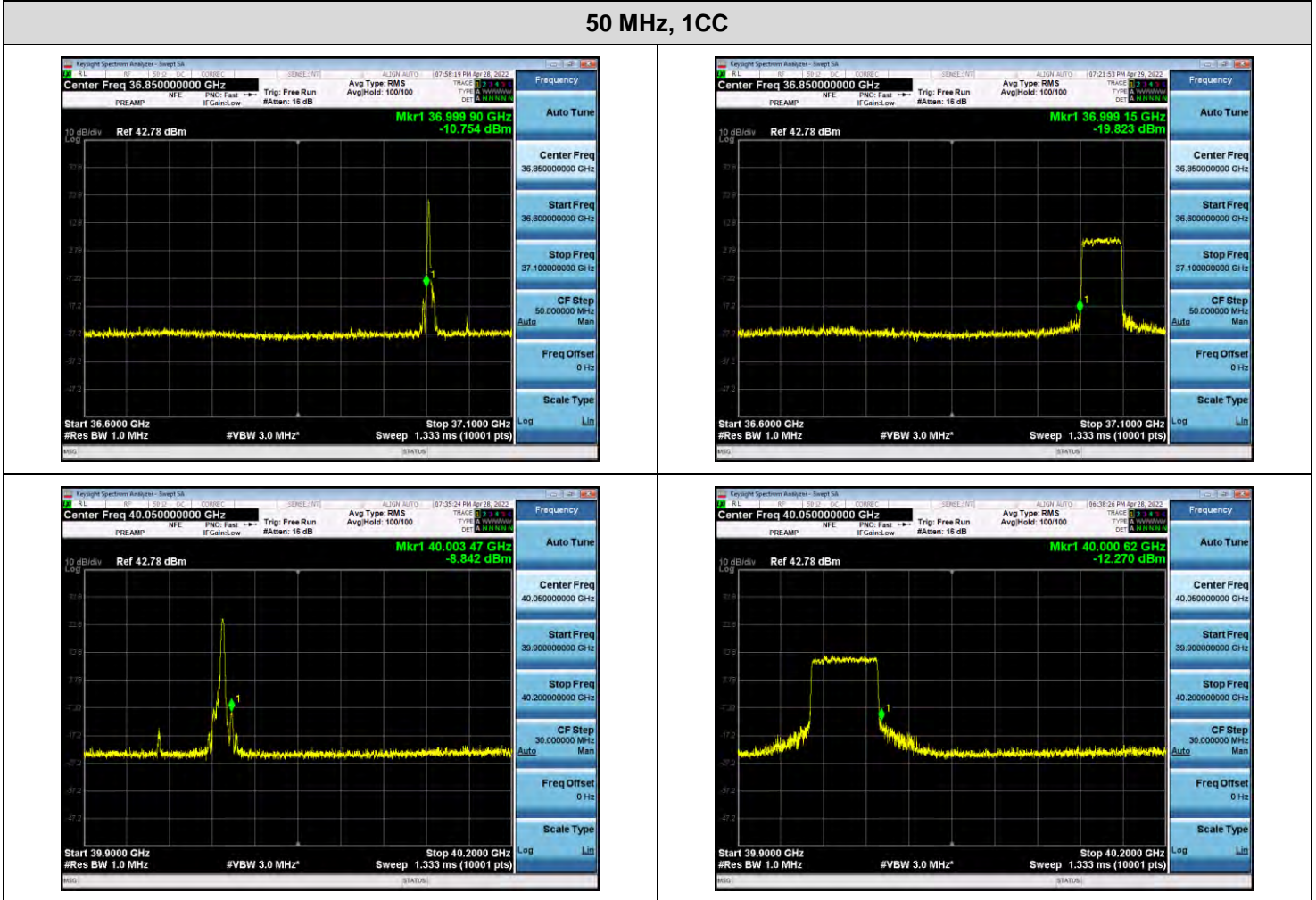
100 MHz, 2CC



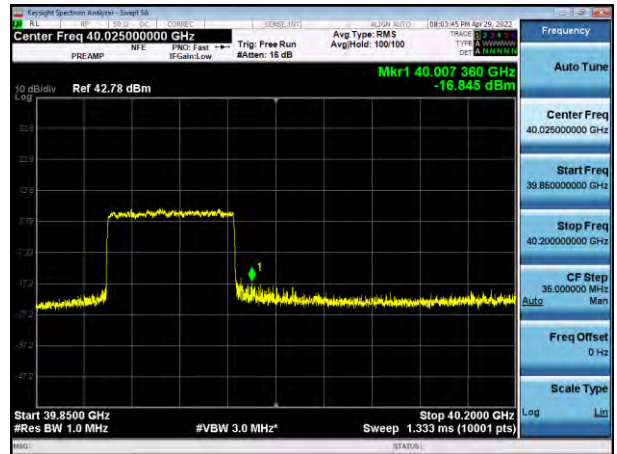
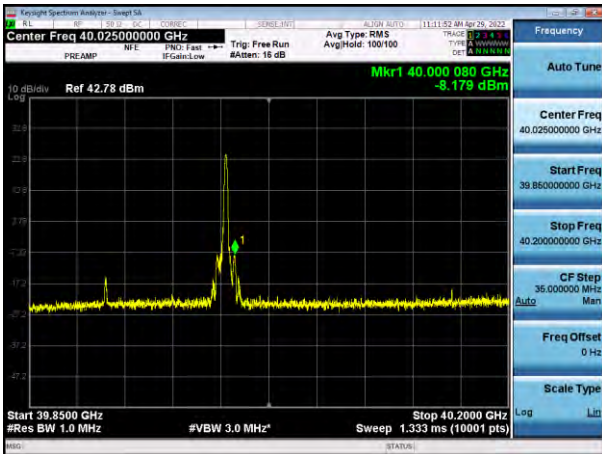
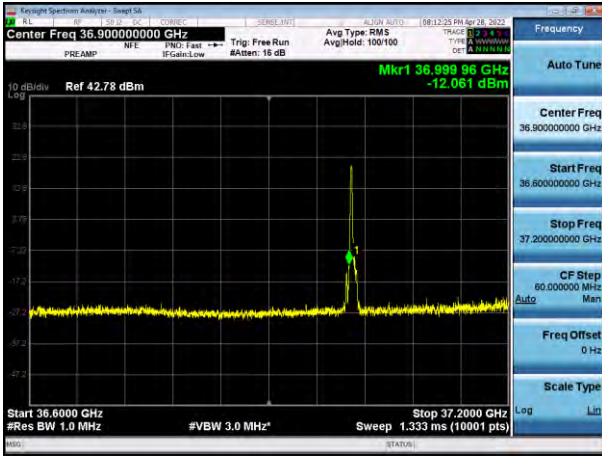


3. K patch: module 0, n260

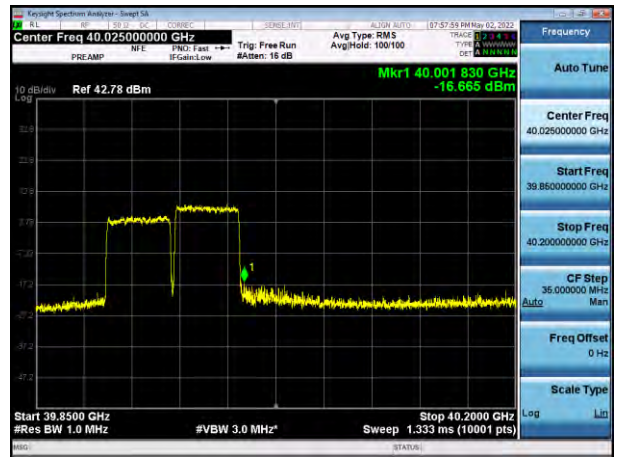
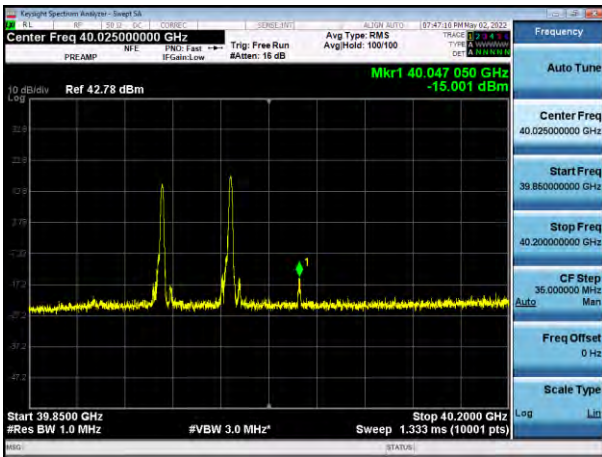
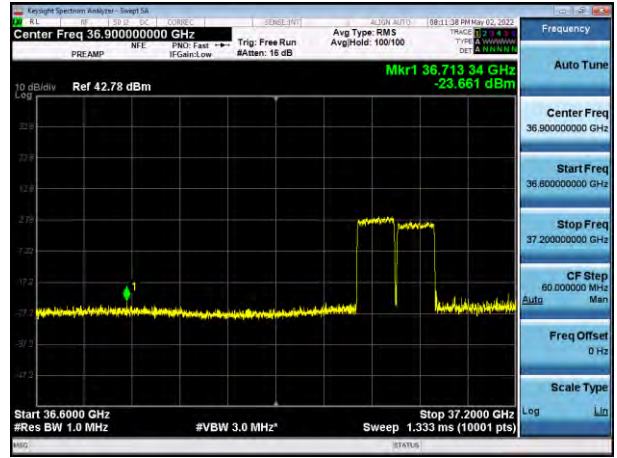
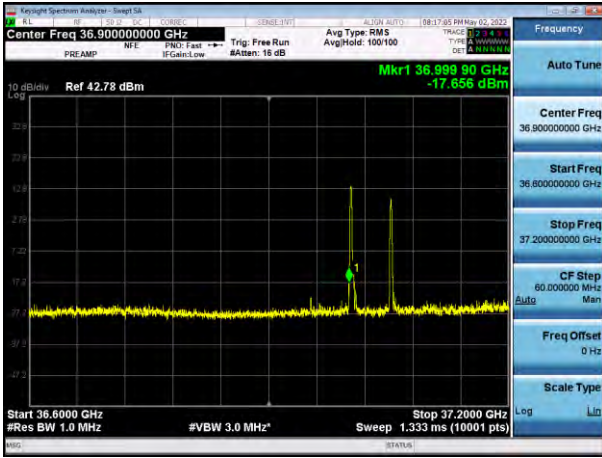
50 MHz, 1CC



100 MHz, 1CC

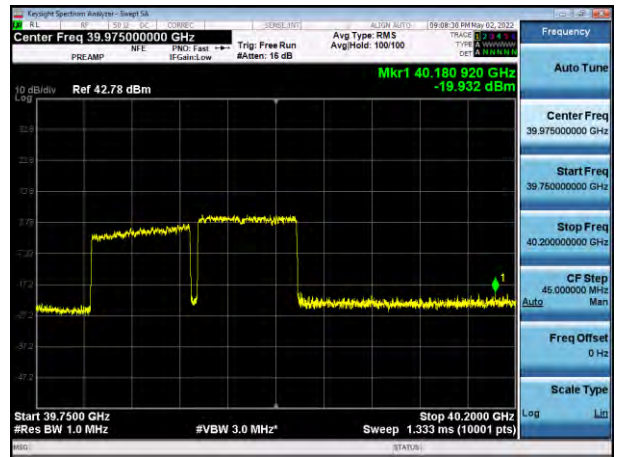
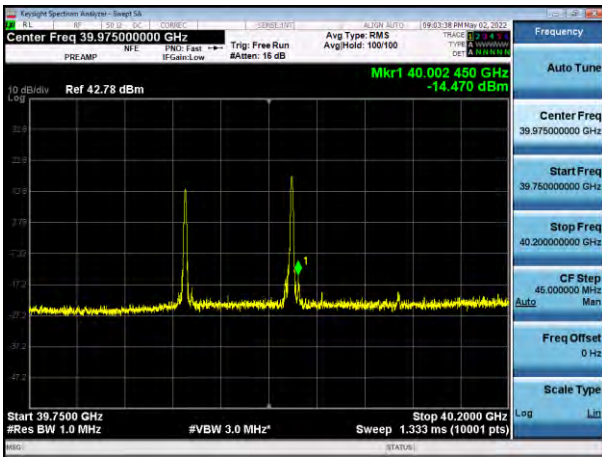
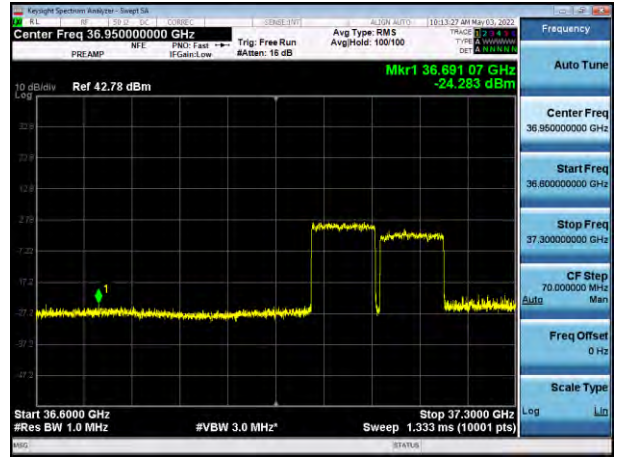
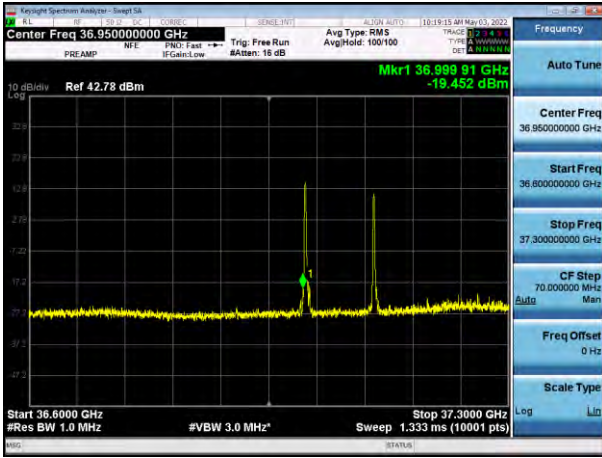


50 MHz, 2CC



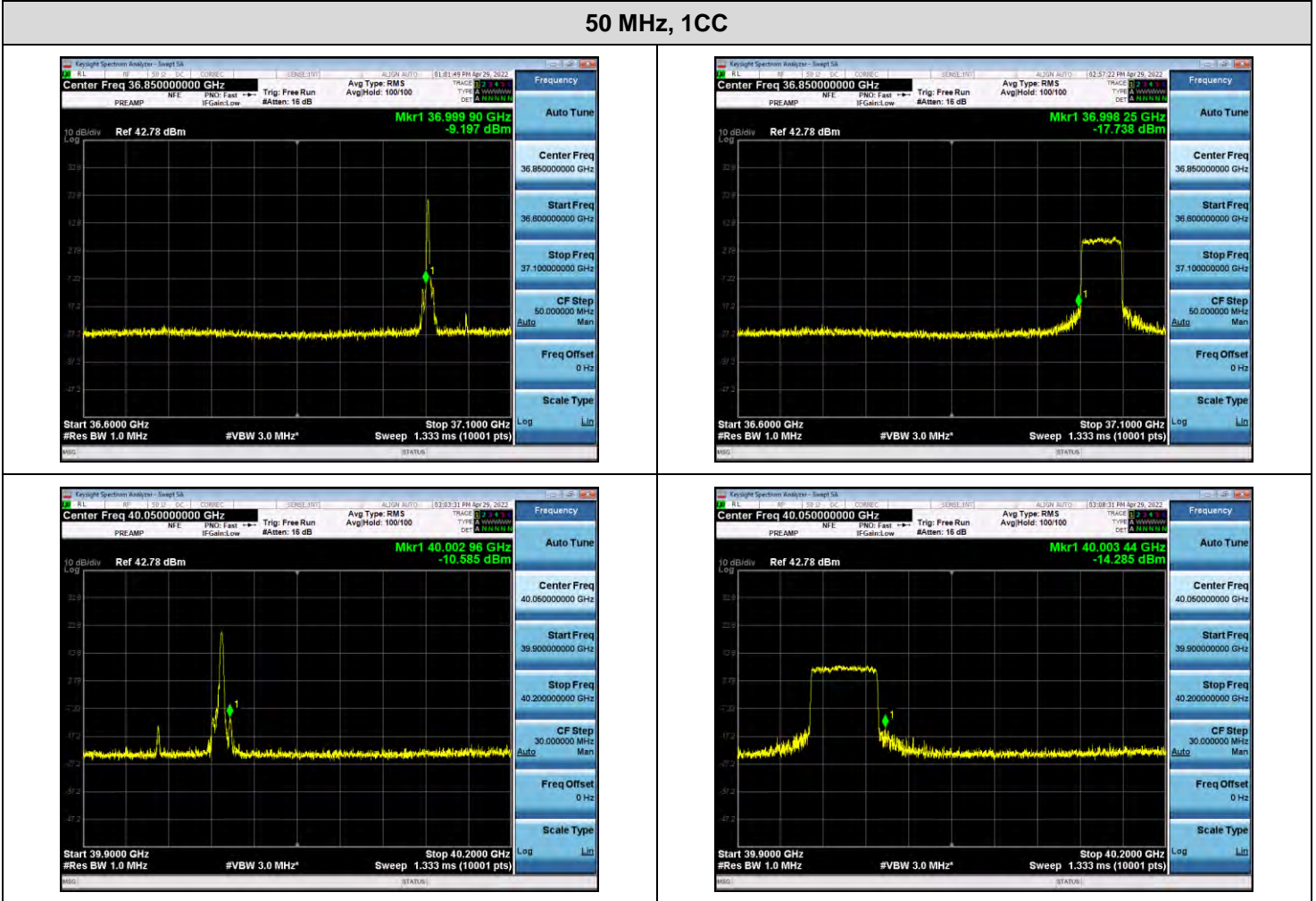


100 MHz, 2CC

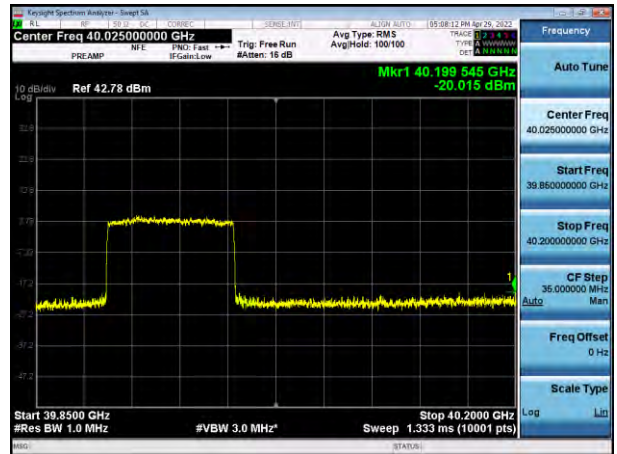
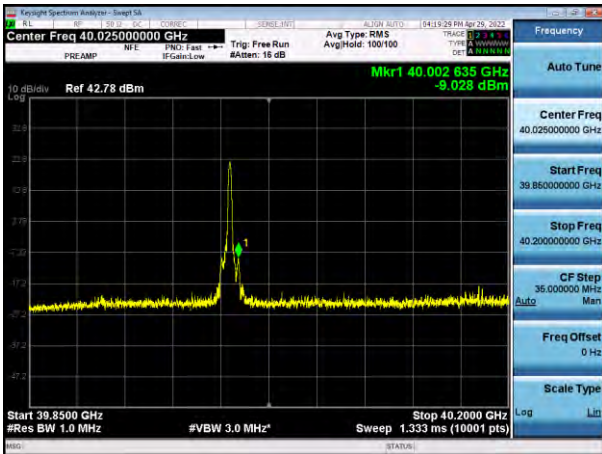
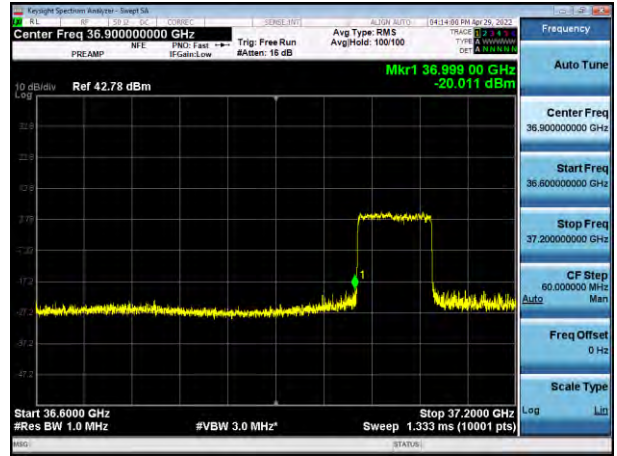
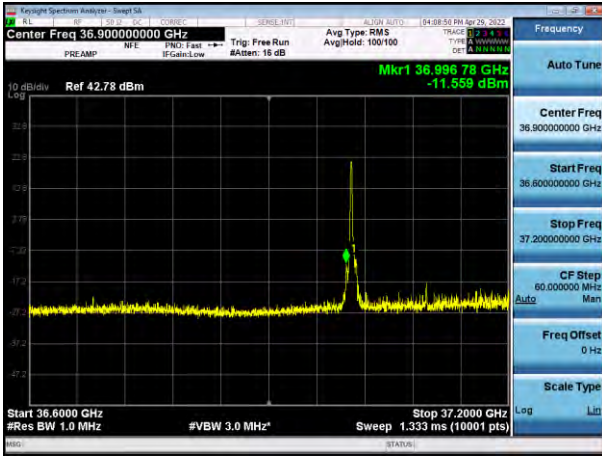


4. L patch: module 1, n260

50 MHz, 1CC

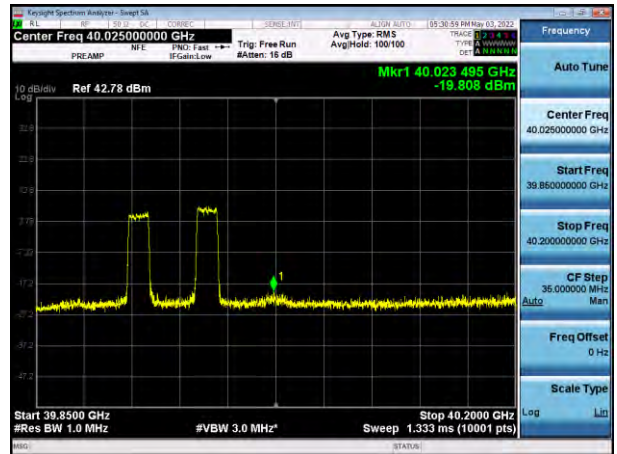
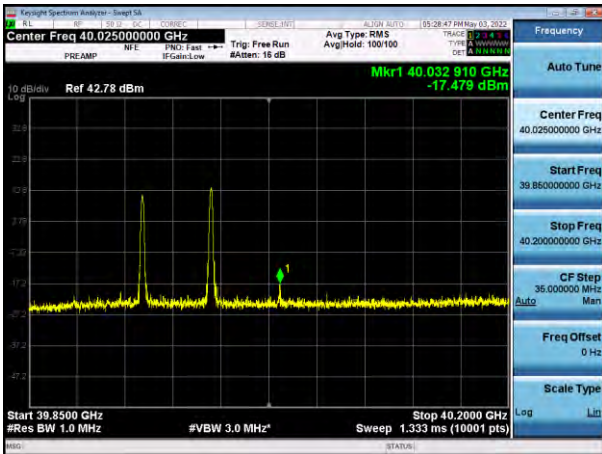
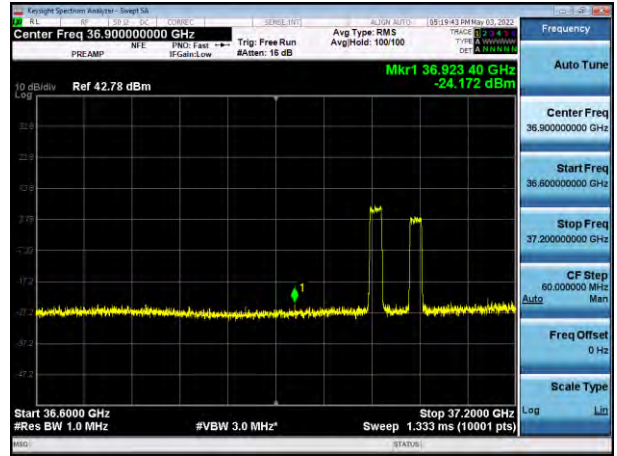
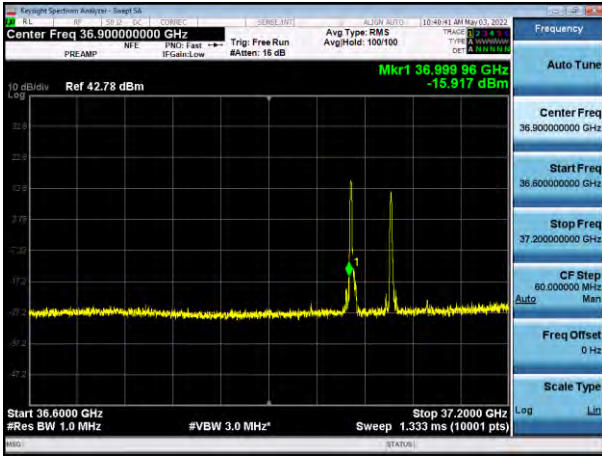


100 MHz, 1CC

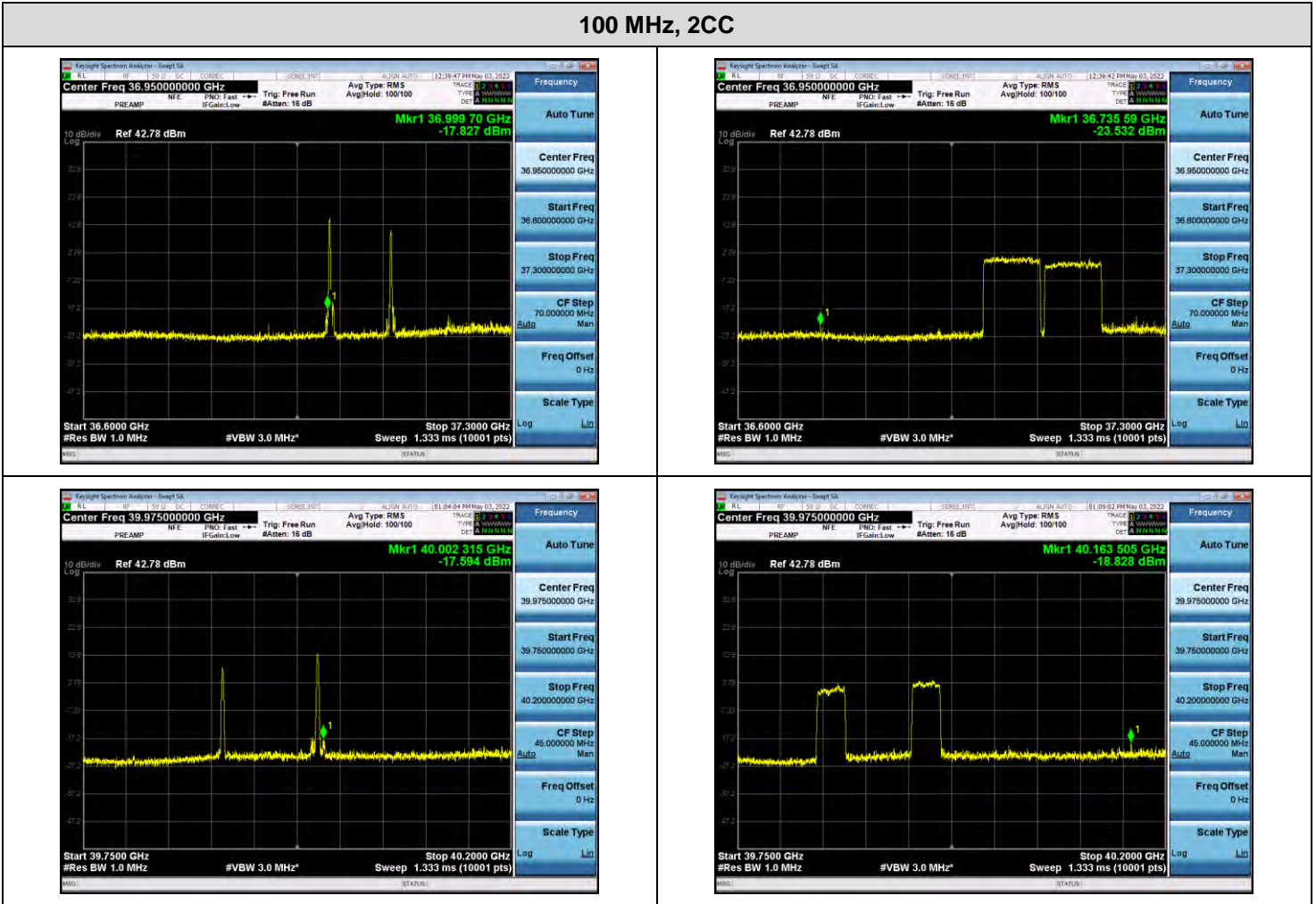




50 MHz, 2CC



100 MHz, 2CC



## 5.4. RADIATED SPURIOUS EMISSIONS

### Test Overview

The test frequency range is from 9 kHz to 200GHz. All out of band emissions are measured in a radiated test setup while the EUT is operating at maximum power, and at the appropriate frequencies. All modulations were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

The conductive power or total radiated power of any emissions outside a licensee's frequency block shall be -13dBm/1MHz.

### FCC Rules

#### Test Requirements:

#### § 30.203 Emission limits.

- (a) The conductive power or the total radiated power of any emission outside a licensee's frequency block shall be -13 dBm/MHz or lower. However, in the bands immediately outside and adjacent to the licensee's frequency block, having a bandwidth equal to 10 percent of the channel bandwidth, the conductive power or the total radiated power of any emission shall be -5 dBm/MHz or lower.
- (b)(1) Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater.
- (2) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges as the design permits.
- (3) The measurements of emission power can be expressed in peak or average values.

#### EIRP Test Procedures:

The measurement is performed in accordance with Section 5.7.4 of ANSI C63.26.

##### 5.7.4 Spurious unwanted emission measurements

- a) Set the spectrum analyzer start frequency to the lowest frequency generated by the EUT, without going below 9 kHz, and the stop frequency to the lower frequency covered by the measurements previously performed in 5.7.3. As an alternative, the stop frequency can be set to the value specified in 5.1.1, depending on the EUT operating range, if the resulting plot can clearly demonstrate compliance for all frequencies not addressed by the out-of-band emissions measurements performed as per 5.7.3.
- b) When using an average power (rms) detector, ensure that the number of points in the sweep  $\geq 2 \times (\text{span} / \text{RBW})$ . This may require that the measurement range defined by the start and stop frequencies be subdivided, depending on the spectrum analyzer capabilities. This requirement does not apply to peak-detected power measurements. When average power is specified by the applicable regulation, a peak-detector can be utilized for preliminary measurements to accommodate wider frequency spans. Any



emissions found in the preliminary measurement to exceed the applicable limit(s) shall be further examined using a power averaging (rms) detector with the minimum number of measurement points as defined above.

c) The sweep time should be set to auto-couple for performing peak-detector measurements. For measurements that use a power averaging (rms) detector, the sweep time shall be set as described for out-of-band emissions measurements in item d) of 5.7.3.

d) Identify and measure the highest spurious emission levels in each frequency range. It is not necessary to re-measure the out-of-band emissions as a part of this test. Record the frequencies and amplitudes corresponding to the measured emissions and capture the data plots.

e) Repeat step b) through step d) for the upper spurious emission frequency range if not already captured by a wide span measurement performed as per the alternative provided in step a). The upper frequency for this measurement is defined in 5.1.1 as a function of the EUT operating range.

f) Compare the results with the corresponding limit in the applicable regulation.

g) The test report shall include the data plots of the measuring instrument display and the measured data.

#### TRP Test Procedures:

The measurement is performed in accordance with Section 4.4.3.3.2 of KDB 842590 v01r02 (2021-04).

a) Align the EUT with a chosen xy-plane and the xz-plane of the antenna measurement coordinate system.

NOTE 1 For harmonics and spurious emission frequencies which are beamforming as identified in exploratory scan, it may be required to align the orthogonal cuts to include the peak based on exploratory scans.

b) Measure the EUT dimensions, i.e., depth (d), width (w), and height (h); see Figure A.1 in Appendix A.

c) Calculate the spherical and cylindrical diameters (D and D<sub>cyl</sub>) using Equations (A.1) and (A.2) (see Appendix A).

d) For the highest frequency (smallest wavelength) of the frequency band measured, calculate the reference angular steps  $\Delta\theta_{ref}$  and  $\Delta\phi_{ref}$  using Equations (A.3) and (A.4).

e) Set the grid spatial sampling step  $\Delta\theta \leq \Delta\theta_{ref}$  for the vertical angle and  $\Delta\phi \leq \Delta\phi_{ref}$  for the horizontal cut.

f) For each emission frequency, measure the EIRP (as a sum of two orthogonal polarizations) at each spatial sampling step on the selected grid.

g) For each emission frequency, calculate the average EIRP for both the cuts separately, and then take the average of these two average values.

h) Add 2 dB as a correction factor to the averaged value computed in step g).

i) If the TRP limit is exceeded, a third orthogonal cut in the yz-plane and using the  $\Delta\theta$  angular step, can be added. Now, calculate the average values in all three cuts separately, and then take the average value of these three average values.

j) Add 1.5 dB as a correction factor to the averaged value computed in step i).

k) Evaluate the pass/fail decision by comparing TRP from step h) or step j) against the applicable TRP limit.

**Note:**

1. Spurious emission test is performed up to 200 GHz(up to 100 GHz for n261) frequency according to section 5.1.1 of ANSI C63.26 -2015.
2. Measurement distance is applied far field condition on page 17.
3. Additionally, we were performed the RSE test in EN-DC mode. It was determined that there is no new emission introduced by EN-DC mode.
4. All RSE were measured with 1CC. The worst case is 1CC with QPSK or PI/2BPSK modulation.
5. All factors except spectrum analyzer level are applied as correction factor each band in the analyzer and calculated in tabular data.

In this test, AFCL factor consists of antenna factor, cable loss, mixer loss, amplifier gain and duty correction. Emissions value is first converted by distance factor as follow.

*Converted value (dBm) = Measured Value (dBuV) + 20 LOG(D)-104.77*

*Final spurious emissions result is calculated as follows.*

*Spurious Emissions = Converted Value (dBm) + AFCL*

6. Measurement RBW correction factor(Reference RBW : 1 MHz)  
The measured value in table is included the RBW correction factor.

*10log(Reference RBW/Measured RBW)*

*In case of 1 kHz RBW, correction factor is 30 dB.*

*In case of 10 kHz RBW, correction factor is 20 dB.*

*In case of 100 kHz RBW, correction factor is 10 dB.*

7. Calculations

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses.

8. In case of 9 kHz to 30 MHz, the reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.

9. All modes of operation were investigated and the worst case configuration results are reported.

- Mode : 5G NR, 5G NR + WLAN 5GHz+ BT

- Worstcase : 5G NR

10. Corrcction Factor

30MHz ~1GHz		1~18GHz		18~40GHz		40~200GHz	
Freq. (MHz)	AFCL	Freq. (GHz)	AFCL	Freq. (GHz)	AFCL	Freq. (GHz)	AFCL
30	17.83	1	-15.620	18	-14.28	40	55.46
80	13.84	1.5	-14.190	18.5	-13.77	45	55.66
100	15.88	2	-13.375	19	-13.97	50	55.78
150	19.60	2.5	-10.352	19.5	-13.96	55	56.02
200	16.20	3	-8.854	20	-13.77	60	57.00
250	18.59	3.5	-8.219	20.5	-13.51	60	57.39
300	20.24	4	-4.475	21	-13.19	65	58.58
350	21.10	4.5	-3.697	21.5	-12.66	70	57.76
400	22.47	5	-1.856	22	-12.09	75	59.20
450	24.24	5.5	-1.018	22.5	-12.09	80	57.98
500	24.92	6	-0.141	23	-11.32	85	59.77
550	25.65	6.5	2.079	23.5	-11.07	90	58.99
600	26.90	7	5.015	24	-11.05	90	59.45
650	27.81	7.5	4.800	24.5	-10.21	95	60.62
700	28.39	8	5.590	25	-9.67	100	60.50
750	29.34	8.5	4.670	25.5	-10.07	105	61.10
800	29.89	9	5.295	26	-10.16	110	64.21
850	30.52	9.5	6.825	26.5	-9.90	115	62.42
900	31.10	10	7.774	27	-10.36	120	64.35
950	32.08	10.5	9.486	27.5	-9.57	125	65.34
1000	32.26	11	11.076	28	-10.30	130	65.61
-	-	11.5	10.723	28.5	-10.02	135	67.54
-	-	12	9.190	29	-9.79	140	68.95
-	-	12.5	8.313	29.5	-9.83	140	67.51
-	-	13	9.462	30	-9.45	145	64.65
-	-	13.5	10.118	30.5	-9.31	150	67.46
-	-	14	9.161	31	-7.75	155	64.28
-	-	14.5	8.023	31.5	-9.53	160	65.23
-	-	15	8.371	32	-8.86	165	65.02
-	-	15.5	6.895	32.5	-9.08	170	68.30
-	-	16	9.296	33	-9.25	175	66.50
-	-	16.5	11.209	33.5	-9.09	180	65.50
-	-	17	15.679	34	-8.88	185	67.38



30MHz ~1GHz		1~18GHz		18~40GHz		40~200GHz	
Freq. (MHz)	AFCL	Freq. (GHz)	AFCL	Freq. (GHz)	AFCL	Freq. (GHz)	AFCL
-	-	17.5	19.458	34.5	-9.05	190	68.62
-	-	18	28.655	35	-9.10	195	67.10
-	-	-	-	35.5	-8.71	200	68.88
-	-	-	-	36	-8.37	-	-
-	-	-	-	36.5	-7.71	-	-
-	-	-	-	37	-6.29	-	-
-	-	-	-	37.5	-6.23	-	-
-	-	-	-	38	-5.44	-	-
-	-	-	-	38.5	-4.27	-	-
-	-	-	-	39	-2.36	-	-
-	-	-	-	39.5	-2.08	-	-
-	-	-	-	40	-2.29	-	-

\*Correction Factor= Antenna Factor + Cable Loss – Amp. Gain + (Harmonic Mixer Conversion Loss)

**Test Results: Tabular Data of Radiated Spurious Emissions**

**1. n261**

**DFT-s OFDM (SISO or SISO Dual)**

30 MHz ~ 1 GHz											
Ant. Patch	CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol.	Modulation	RB Size/Offset	Ant. Pol. [H/V]	Measured Value (dBuV)	Distance (m)	Conversion Value Result (dBm)
0	1	100	27550.08	Low	H+V	QPSK	1/33	H	51.21	3	-44.02
			27924.96	Mid	H+V	QPSK	1/33	H	50.74	3	-44.49
			28299.96	High	H+V	QPSK	1/33	H	50.60	3	-44.63
1	1	50	27525.00	Low	H	BPSK	10/11	H	49.88	3	-45.35
		100	27924.96	Mid	H	BPSK	20/22	H	50.88	3	-44.35
		50	28324.92	High	H	BPSK	10/11	H	51.08	3	-44.15

1 GHz ~ 10 GHz											
Ant. Patch	CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol.	Modulation	RB Size/Offset	Ant. Pol. [H/V]	Measured Value (dBuV)	Distance (m)	Conversion Value Result (dBm)
0	1	100	27550.08	Low	H+V	QPSK	1/33	H	52.01	3	-43.22
			27924.96	Mid	H+V	QPSK	1/33	H	52.34	3	-42.89
			28299.96	High	H+V	QPSK	1/33	H	53.51	3	-41.72
1	1	50	27525.00	Low	H	BPSK	10/11	H	49.40	3	-45.83
		100	27924.96	Mid	H	BPSK	20/22	H	49.50	3	-45.73
		50	28324.92	High	H	BPSK	10/11	H	49.66	3	-45.57

10 GHz ~ 18 GHz											
Ant. Patch	CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol.	Modulation	RB Size/Offset	Ant. Pol. [H/V]	Measured Value (dBuV)	Distance (m)	Conversion Value Result (dBm)
0	1	100	27550.08	Low	H+V	QPSK	1/33	H	66.44	3	-28.79
			27924.96	Mid	H+V	QPSK	1/33	H	66.44	3	-28.79
			28299.96	High	H+V	QPSK	1/33	H	66.99	3	-28.24
1	1	50	27525.00	Low	H	BPSK	10/11	H	67.53	3	-27.70
		100	27924.96	Mid	H	BPSK	20/22	H	67.29	3	-27.94
		50	28324.92	High	H	BPSK	10/11	H	66.91	3	-28.32

18 GHz ~ 27 GHz											
Ant. Patch	CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol.	Modulation	RB Size/Offset	Ant. Pol. [H/V]	Measured Value (dBuV)	Distance (m)	Conversion Value Result (dBm)
0	1	100	27550.08	Low	H+V	QPSK	1/33	H	61.30	3	-33.93
			27924.96	Mid	H+V	QPSK	1/33	H	52.33	3	-42.90
			28299.96	High	H+V	QPSK	1/33	H	55.33	3	-39.90
1	1	50	27525.00	Low	H	BPSK	10/11	H	52.12	3	-43.11
		100	27924.96	Mid	H	BPSK	20/22	H	47.00	3	-48.23
		50	28324.92	High	H	BPSK	10/11	H	51.24	3	-43.99



28.8 GHz ~ 40 GHz											
Ant. Patch	CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol.	Modulation	RB Size/Offset	Ant. Pol. [H/V]	Measured Value (dBuV)	Distance (m)	Conversion Value Result (dBm)
0	1	100	27550.08	Low	H+V	QPSK	1/33	V	56.66	3	-38.57
			27924.96	Mid	H+V	QPSK	1/33	V	65.06	3	-30.17
			28299.96	High	H+V	QPSK	1/33	V	64.66	3	-30.57
1	1	50	27525.00	Low	H	BPSK	10/11	V	56.04	3	-39.19
		100	27924.96	Mid	H	BPSK	20/22	V	56.40	3	-38.83
		50	28324.92	High	H	BPSK	10/11	H	59.40	3	-35.83

40 GHz ~ 60 GHz											
Ant. Patch	CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol.	Modulation	RB Size/Offset	Ant. Pol. [H/V]	Measured Value (dBuV)	Distance (m)	Conversion Value Result (dBm)
0	1	100	27550.08	Low	H+V	QPSK	1/33	V	67.86	1.5	-33.39
			27924.96	Mid	H+V	QPSK	1/33	V	67.11	1.5	-34.14
			28299.96	High	H+V	QPSK	1/33	H	67.78	1.5	-33.47
1	1	50	27525.00	Low	H	BPSK	10/11	V	68.03	1.5	-33.22
		100	27924.96	Mid	H	BPSK	20/22	V	67.59	1.5	-33.66
		50	28324.92	High	H	BPSK	10/11	H	67.54	1.5	-33.71

60 GHz ~ 90 GHz											
Ant. Patch	CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol.	Modulation	RB Size/Offset	Ant. Pol. [H/V]	Measured Value (dBuV)	Distance (m)	Conversion Value Result (dBm)
0	1	100	27550.08	Low	H+V	QPSK	1/33	V	71.46	1	-33.31
			27924.96	Mid	H+V	QPSK	1/33	H	71.84	1	-32.93
			28299.96	High	H+V	QPSK	1/33	V	70.99	1	-33.78
1	1	50	27525.00	Low	H	BPSK	10/11	H	70.56	1	-34.21
		100	27924.96	Mid	H	BPSK	20/22	H	71.20	1	-33.57
		50	28324.92	High	H	BPSK	10/11	V	72.47	1	-32.30

90 GHz ~ 100 GHz											
Ant. Patch	CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol.	Modulation	RB Size/Offset	Ant. Pol. [H/V]	Measured Value (dBuV)	Distance (m)	Conversion Value Result (dBm)
0	1	100	27550.08	Low	H+V	QPSK	1/33	V	73.28	1	-31.49
			27924.96	Mid	H+V	QPSK	1/33	V	72.77	1	-32.00
			28299.96	High	H+V	QPSK	1/33	H	73.40	1	-31.37
1	1	50	27525.00	Low	H	BPSK	10/11	V	72.61	1	-32.16
		100	27924.96	Mid	H	BPSK	20/22	V	73.17	1	-31.60
		50	28324.92	High	H	BPSK	10/11	V	73.62	1	-31.15

2. n260

30 MHz ~ 1 GHz											
Ant. Patch	CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol.	Modulation	RB Size/Offset	Ant. Pol. [H/V]	Measured Value (dBuV)	Distance (m)	Conversion Value Result (dBm)
0	1	50	37025.04	Low	H+V	QPSK	10/11	H	51.18	3	-44.05
			38499.96	Mid	V	BPSK	10/11	H	51.28	3	-43.95
			39975.00	High	H+V	QPSK	1/16	H	51.64	3	-43.59
1	1	100	37050.00	Low	H+V	QPSK	1/22	H	50.94	3	-44.29
			38499.96	Mid	H	QPSK	1/22	H	50.97	3	-44.26
		50	39975.00	High	H+V	QPSK	1/11	H	50.43	3	-44.80

1 GHz ~ 10 GHz											
Ant. Patch	CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol.	Modulation	RB Size/Offset	Ant. Pol. [H/V]	Measured Value (dBuV)	Distance (m)	Conversion Value Result (dBm)
0	1	50	37025.04	Low	H+V	QPSK	10/11	H	49.47	3	-45.76
			38499.96	Mid	V	BPSK	10/11	H	48.93	3	-46.30
			39975.00	High	H+V	QPSK	1/16	H	55.82	3	-39.41
1	1	100	37050.00	Low	H+V	QPSK	1/22	H	50.39	3	-44.84
			38499.96	Mid	H	QPSK	1/22	H	49.68	3	-45.55
		50	39975.00	High	H+V	QPSK	1/11	H	50.50	3	-44.73

10 GHz ~ 18 GHz											
Ant. Patch	CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol.	Modulation	RB Size/Offset	Ant. Pol. [H/V]	Measured Value (dBuV)	Distance (m)	Conversion Value Result (dBm)
0	1	50	37025.04	Low	H+V	QPSK	10/11	H	66.23	3	-29.00
			38499.96	Mid	V	BPSK	10/11	H	67.07	3	-28.16
			39975.00	High	H+V	QPSK	1/16	H	66.48	3	-28.75
1	1	100	37050.00	Low	H+V	QPSK	1/22	H	66.97	3	-28.26
			38499.96	Mid	H	QPSK	1/22	H	66.81	3	-28.42
		50	39975.00	High	H+V	QPSK	1/11	H	66.57	3	-28.66

18 GHz ~ 26.5 GHz											
Ant. Patch	CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol.	Modulation	RB Size/Offset	Ant. Pol. [H/V]	Measured Value (dBuV)	Distance (m)	Conversion Value Result (dBm)
0	1	50	37025.04	Low	H+V	QPSK	10/11	V	47.04	3	-48.19
			38499.96	Mid	V	BPSK	10/11	V	47.17	3	-48.06
			39975.00	High	H+V	QPSK	1/16	H	47.31	3	-47.92
1	1	100	37050.00	Low	H+V	QPSK	1/22	V	46.36	3	-48.87
			38499.96	Mid	H	QPSK	1/22	V	46.41	3	-48.82
		50	39975.00	High	H+V	QPSK	1/11	H	47.52	3	-47.71



26.5 GHz ~ 36.6 GHz											
Ant. Patch	CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol.	Modulation	RB Size/Offset	Ant. Pol. [H/V]	Measured Value (dBuV)	Distance (m)	Conversion Value Result (dBm)
0	1	50	37025.04	Low	H+V	QPSK	10/11	H	56.05	3	-39.18
			38499.96	Mid	V	BPSK	10/11	V	51.75	3	-43.48
			39975.00	High	H+V	QPSK	1/16	H	56.63	3	-38.60
1	1	100	37050.00	Low	H+V	QPSK	1/22	H	57.99	3	-37.24
			38499.96	Mid	H	QPSK	1/22	V	51.46	3	-43.77
		50	39975.00	High	H+V	QPSK	1/11	H	57.44	3	-37.79

40 GHz ~ 60 GHz											
Ant. Patch	CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol.	Modulation	RB Size/Offset	Ant. Pol. [H/V]	Measured Value (dBuV)	Distance (m)	Conversion Value Result (dBm)
0	1	50	37025.04	Low	H+V	QPSK	10/11	V	72.88	1.5	-28.37
			38499.96	Mid	V	BPSK	10/11	V	68.33	1.5	-32.92
			39975.00	High	H+V	QPSK	1/16	V	67.88	1.5	-33.37
1	1	100	37050.00	Low	H+V	QPSK	1/22	V	73.96	1.5	-27.29
			38499.96	Mid	H	QPSK	1/22	H	67.68	1.5	-33.57
		50	39975.00	High	H+V	QPSK	1/11	V	68.33	1.5	-32.92

60 GHz ~ 90 GHz											
Ant. Patch	CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol.	Modulation	RB Size/Offset	Ant. Pol. [H/V]	Measured Value (dBuV)	Distance (m)	Conversion Value Result (dBm)
0	1	50	37025.04	Low	H+V	QPSK	10/11	V	70.54	1	-34.23
			38499.96	Mid	V	BPSK	10/11	V	72.86	1	-31.91
			39975.00	High	H+V	QPSK	1/16	V	71.23	1	-33.54
1	1	100	37050.00	Low	H+V	QPSK	1/22	V	71.33	1	-33.44
			38499.96	Mid	H	QPSK	1/22	V	70.61	1	-34.16
		50	39975.00	High	H+V	QPSK	1/11	H	70.66	1	-34.11

90 GHz ~ 140 GHz											
Ant. Patch	CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol.	Modulation	RB Size/Offset	Ant. Pol. [H/V]	Measured Value (dBuV)	Distance (m)	Conversion Value Result (dBm)
0	1	50	37025.04	Low	H+V	QPSK	10/11	H	84.91	1	-19.86
			38499.96	Mid	V	BPSK	10/11	H	87.61	1	-17.16
			39975.00	High	H+V	QPSK	1/16	H	86.33	1	-18.44
1	1	100	37050.00	Low	H+V	QPSK	1/22	V	82.82	1	-21.95
			38499.96	Mid	H	QPSK	1/22	H	86.54	1	-18.23
		50	39975.00	High	H+V	QPSK	1/11	H	85.36	1	-19.41

140 GHz ~ 170 GHz											
Ant. Patch	CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol.	Modulation	RB Size/Offset	Ant. Pol. [H/V]	Measured Value (dBuV)	Distance (m)	Conversion Value Result (dBm)
0	1	50	37025.04	Low	H+V	QPSK	10/11	V	80.88	0.5	-29.91
			38499.96	Mid	V	BPSK	10/11	V	80.29	0.5	-30.50
			39975.00	High	H+V	QPSK	1/16	H	79.67	0.5	-31.12
1	1	100	37050.00	Low	H+V	QPSK	1/22	H	81.68	0.5	-29.11
			38499.96	Mid	H	QPSK	1/22	H	81.72	0.5	-29.07
		50	39975.00	High	H+V	QPSK	1/11	H	82.35	0.5	-28.44

170 GHz ~ 200 GHz											
Ant. Patch	CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol.	Modulation	RB Size/Offset	Ant. Pol. [H/V]	Measured Value (dBuV)	Distance (m)	Conversion Value Result (dBm)
0	1	50	37025.04	Low	H+V	QPSK	10/11	H	81.24	0.5	-29.55
			38499.96	Mid	V	BPSK	10/11	H	81.33	0.5	-29.46
			39975.00	High	H+V	QPSK	1/16	H	81.46	0.5	-29.33
1	1	100	37050.00	Low	H+V	QPSK	1/22	H	81.41	0.5	-29.38
			38499.96	Mid	H	QPSK	1/22	V	81.14	0.5	-29.65
		50	39975.00	High	H+V	QPSK	1/11	H	80.81	0.5	-29.98

**DFT-s OFDM (SISO or SISO Dual)**  
**Plot data of Radiated Spurious Emissions**

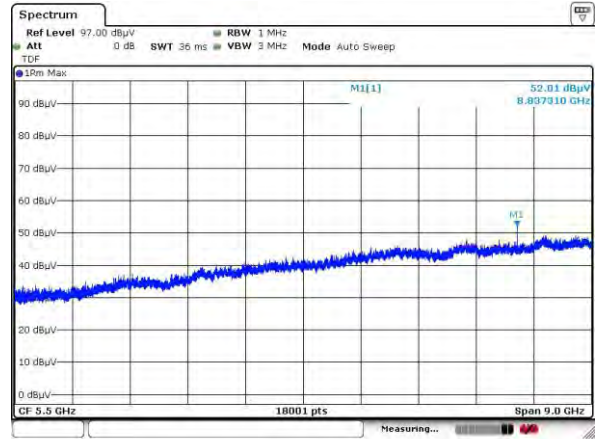
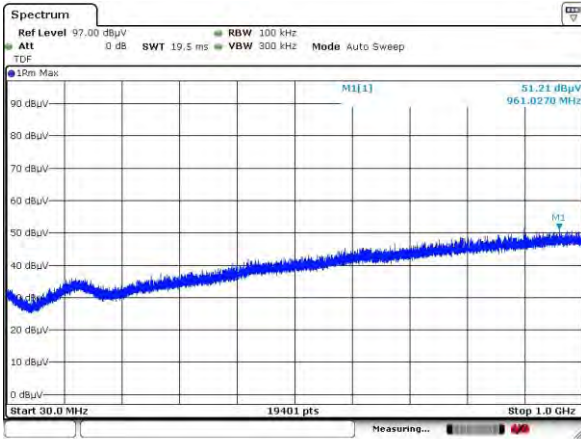
**K patch: module 0**

**n261 [30 MHz ~ 1 GHz]**

**n261 [1 GHz ~ 10 GHz]**

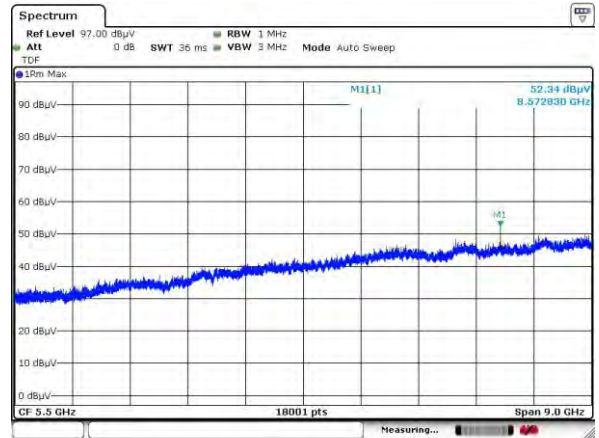
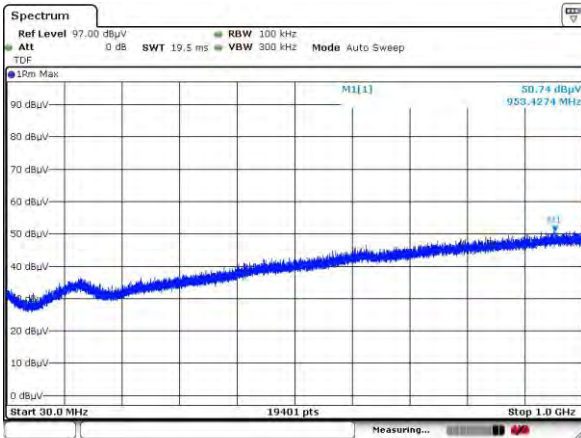
**Low Channel**

**Low Channel**



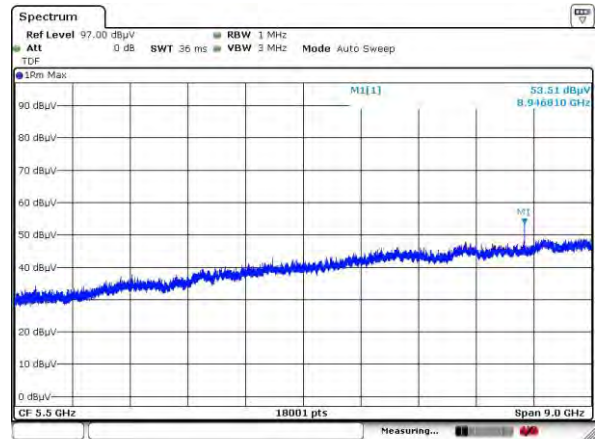
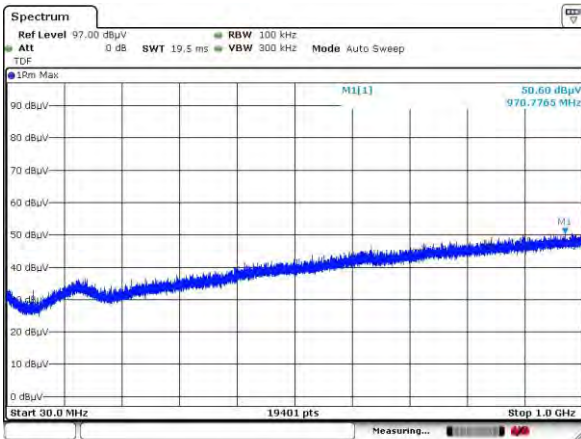
**Middle Channel**

**Middle Channel**



**High Channel**

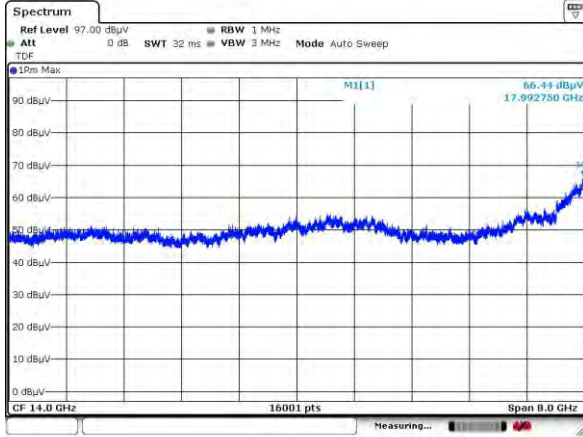
**High Channel**



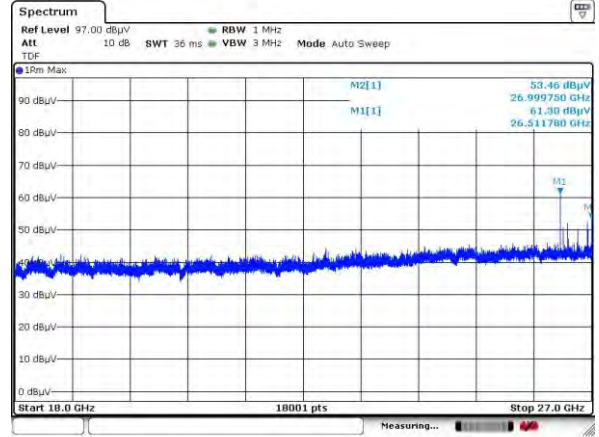


**K patch: module 0**

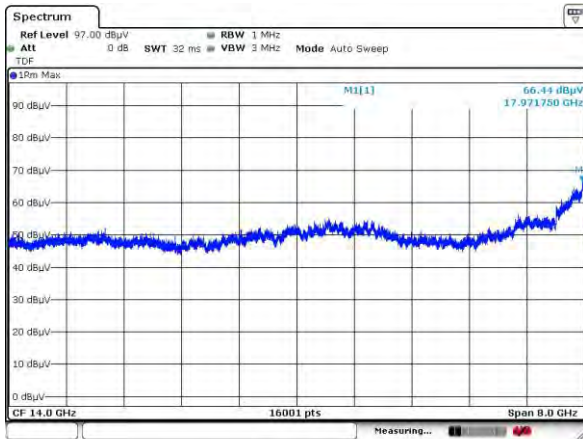
**n261 [10 GHz ~ 18 GHz]  
Low Channel**



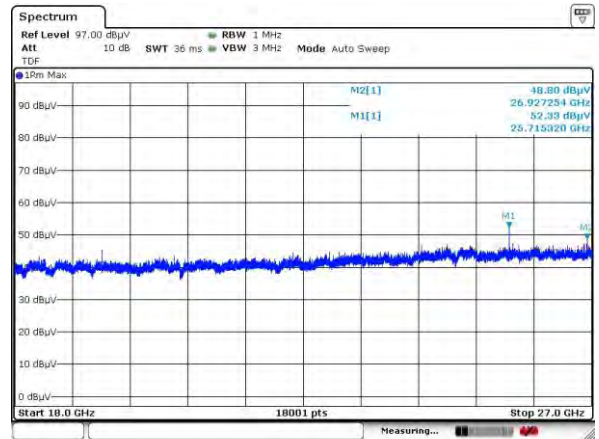
**n261 [18 GHz ~ 27 GHz]  
Low Channel**



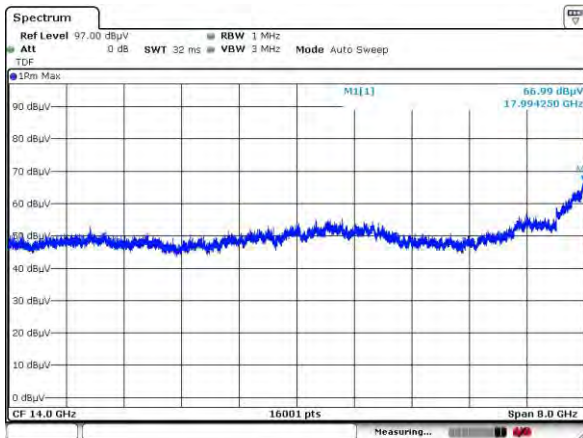
**Middle Channel**



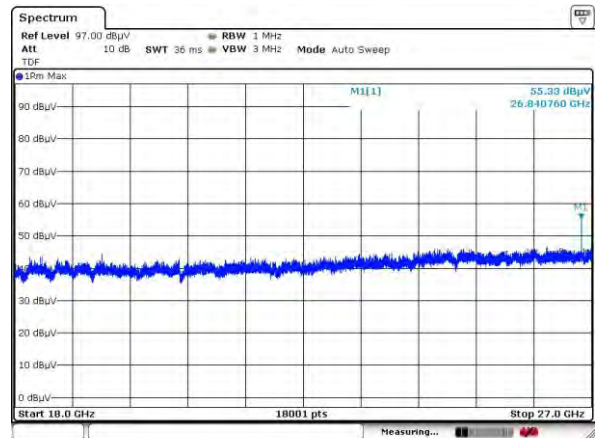
**Middle Channel**



**High Channel**

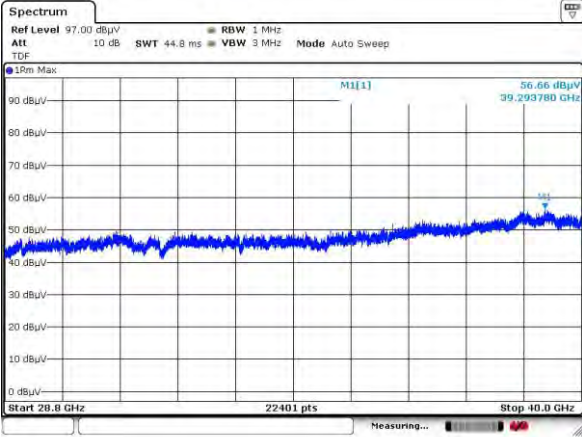


**High Channel**



**K patch: module 0**

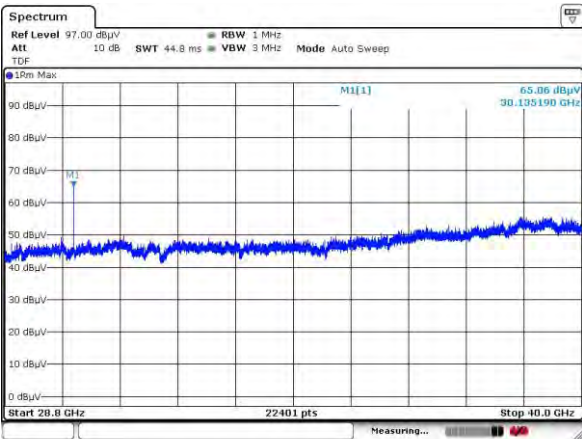
**n261 [28.8 GHz ~ 40 GHz]  
Low Channel**



**n261 [40 GHz ~ 60 GHz]  
Low Channel**



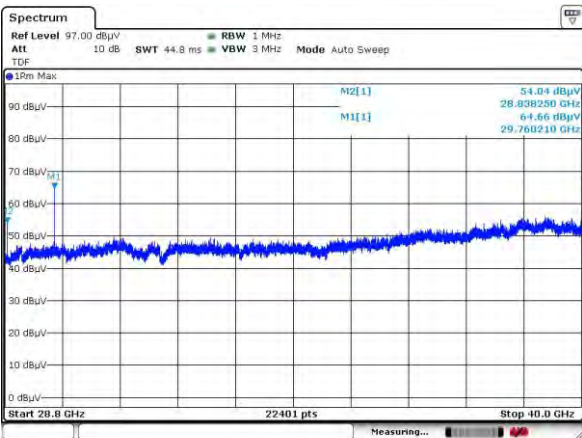
**Middle Channel**



**Middle Channel**



**High Channel**



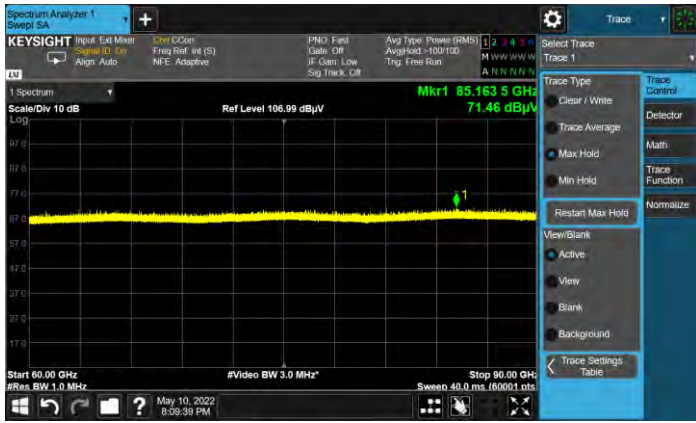
**High Channel**



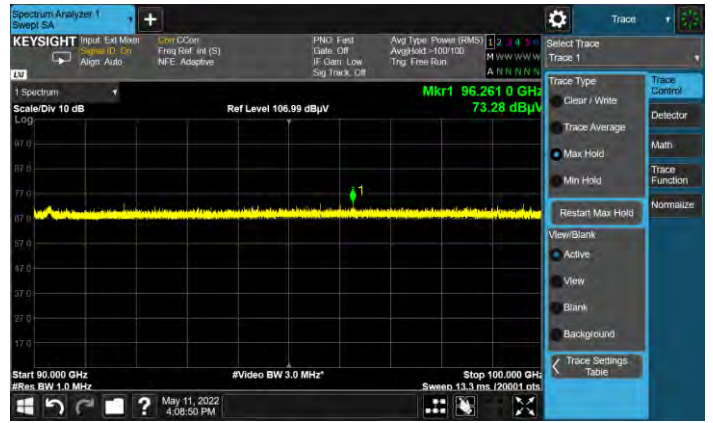


**K patch: module 0**

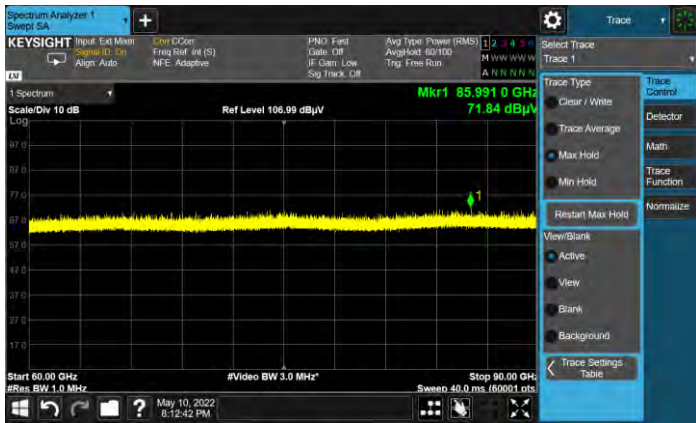
**n261 [60 GHz ~ 90 GHz]  
Low Channel**



**n261 [90 GHz ~ 100 GHz]  
Low Channel**



**Middle Channel**



**Middle Channel**



**High Channel**

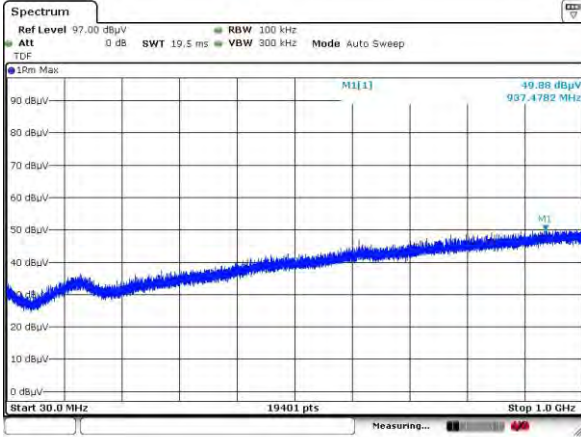


**High Channel**

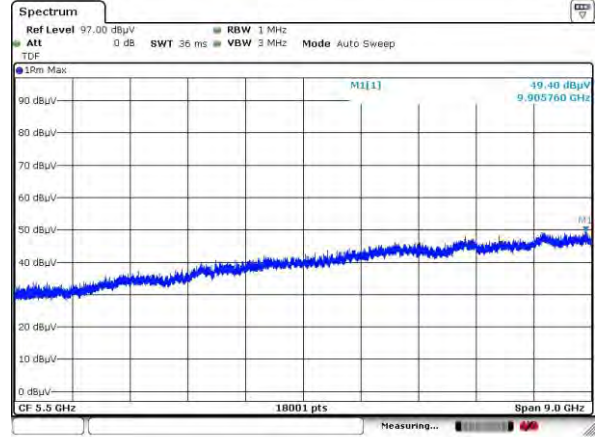


L patch: module 1

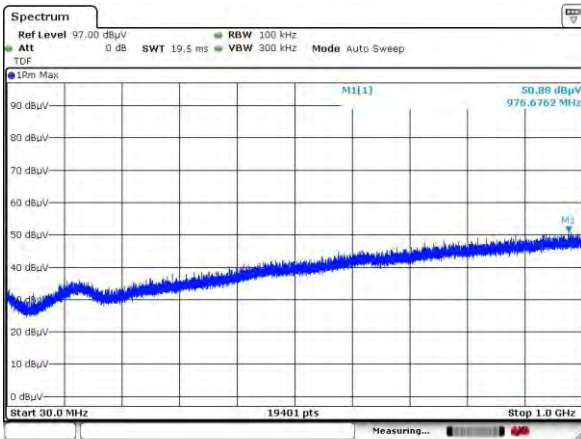
n261 [30 MHz ~ 1 GHz]  
Low Channel



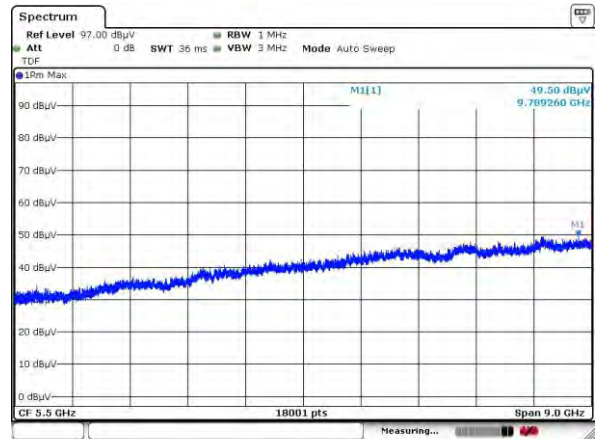
n261 [1 GHz ~ 10 GHz]  
Low Channel



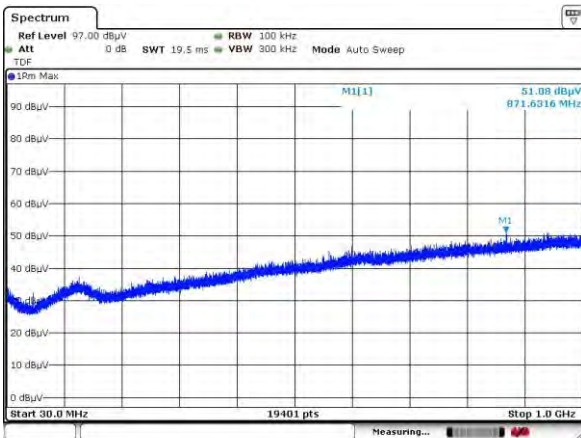
Middle Channel



Middle Channel



High Channel



High Channel

