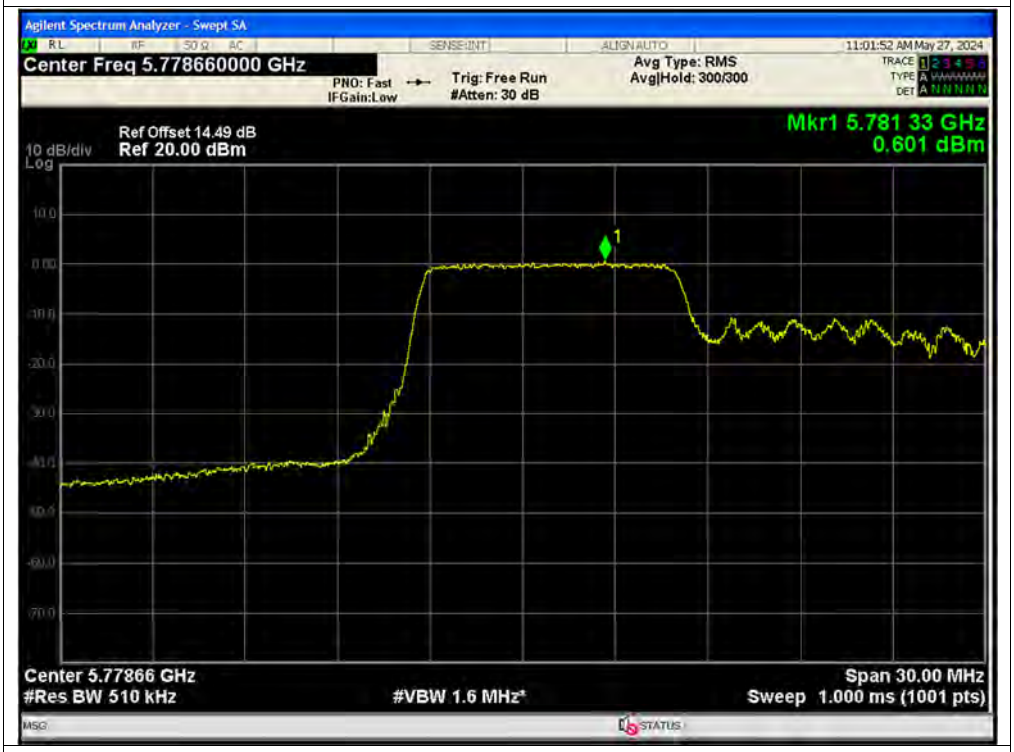
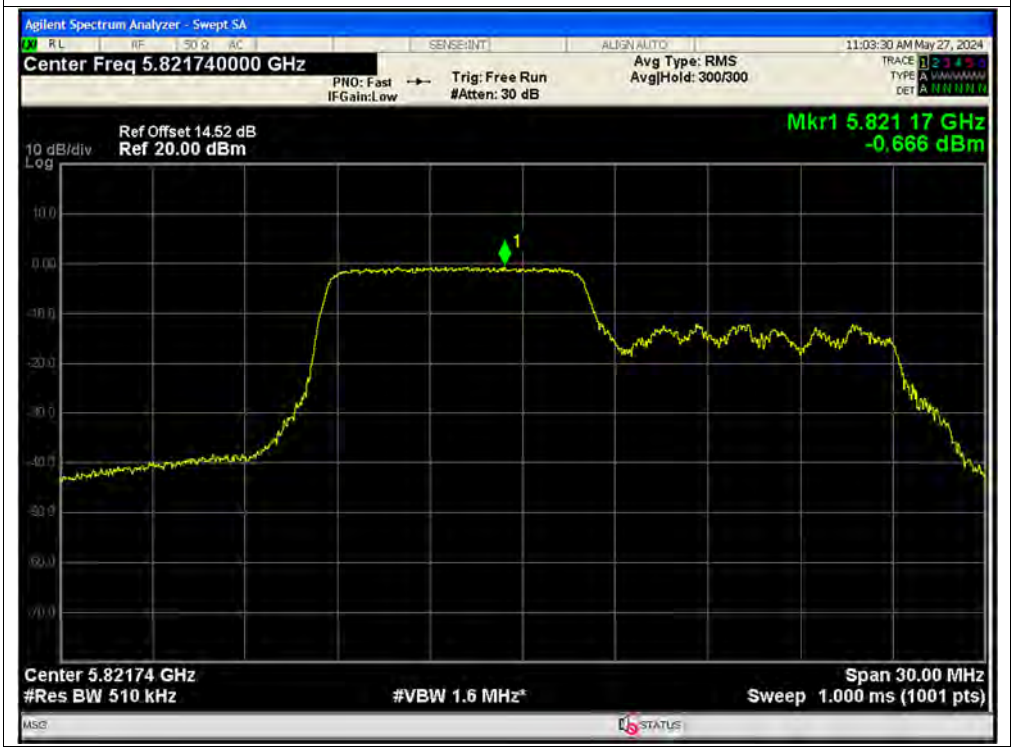
PSD NVNT ax20 106@53 5785MHz Ant1



PSD NVNT ax20 106@53 5825MHz Ant1



PSD NVNT ax20 106@53 5180MHz Ant2

PSD NVNT ax20 106@53 5220MHz Ant2

PSD NVNT ax20 106@53 5240MHz Ant2

PSD NVNT ax20 106@53 5260MHz Ant2

PSD NVNT ax20 106@53 5300MHz Ant2

PSD NVNT ax20 106@53 5320MHz Ant2

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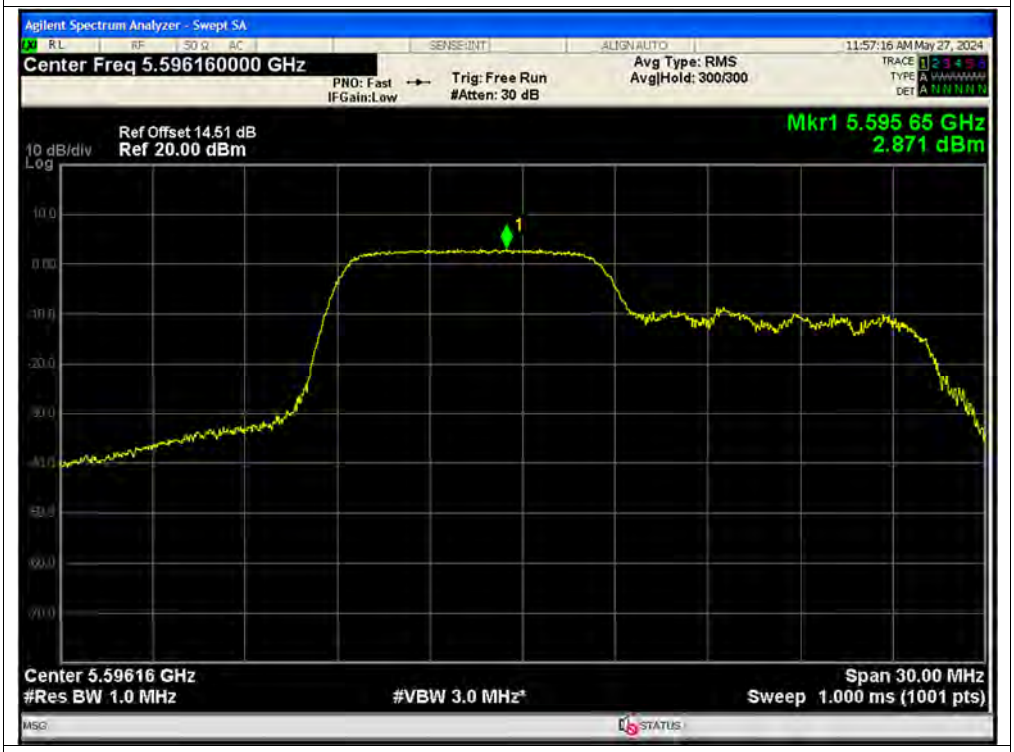
PSD NVNT ax20 106@53 5580MHz Ant2

PSD NVNT ax20 106@53 5600MHz Ant2



PSD NVNT ax20 106@53 5720MHz Ant2

PSD NVNT ax20 106@53 5745MHz Ant2

PSD NVNT ax20 106@53 5785MHz Ant2

PSD NVNT ax20 106@53 5825MHz Ant2

PSD NVNT ax40 26@0 5190MHz Ant1

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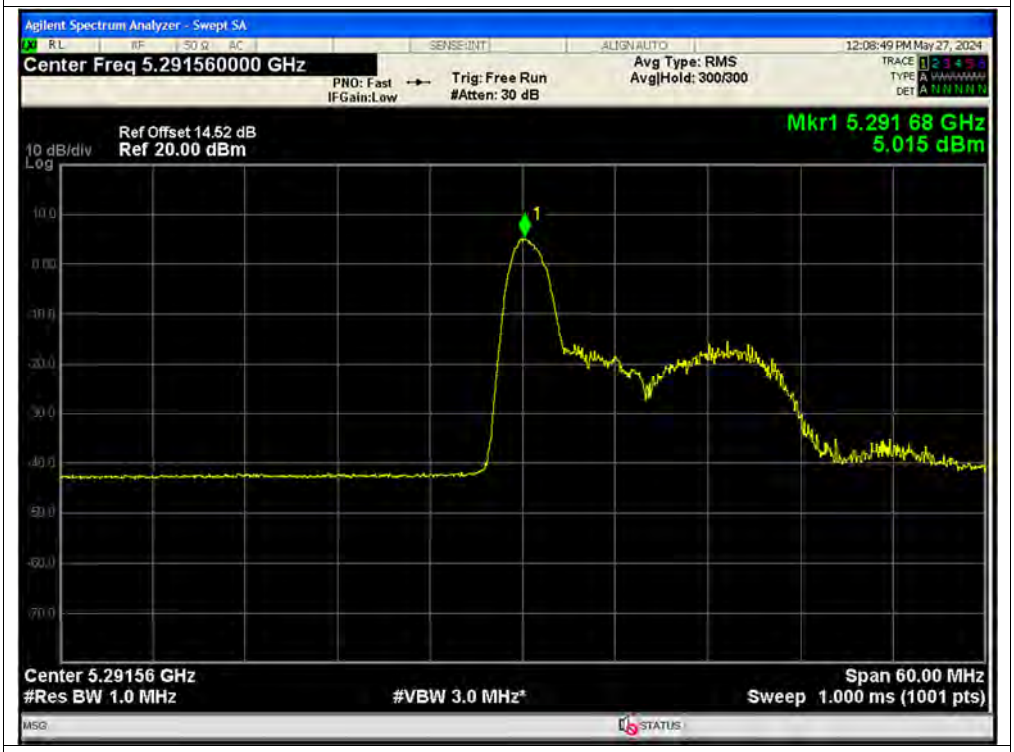
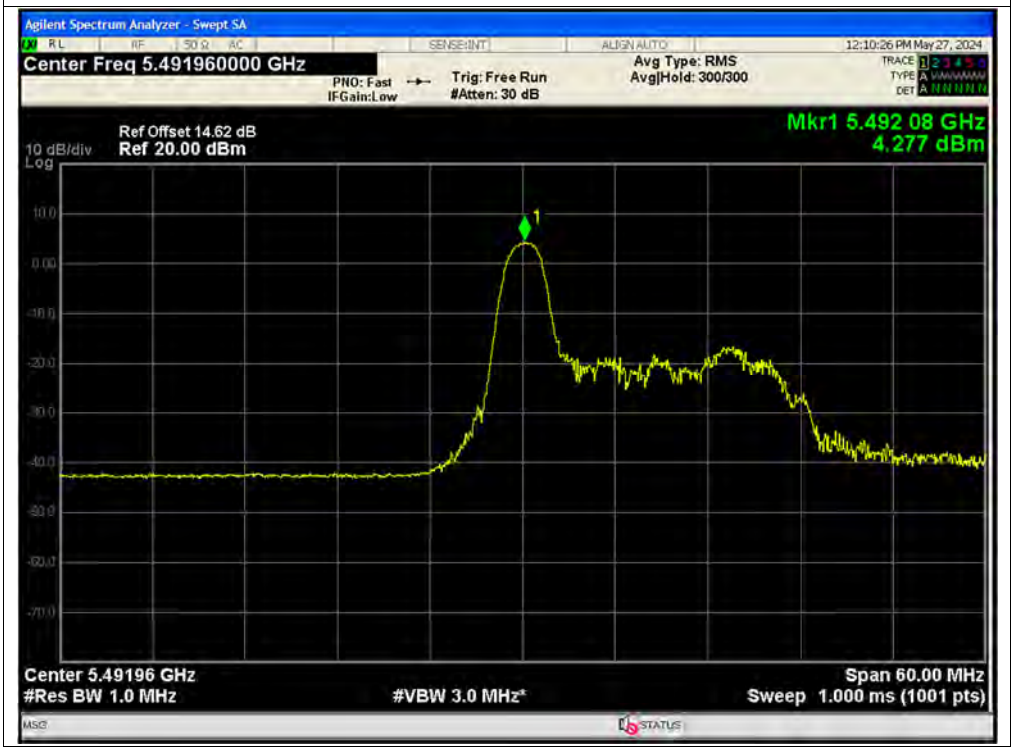
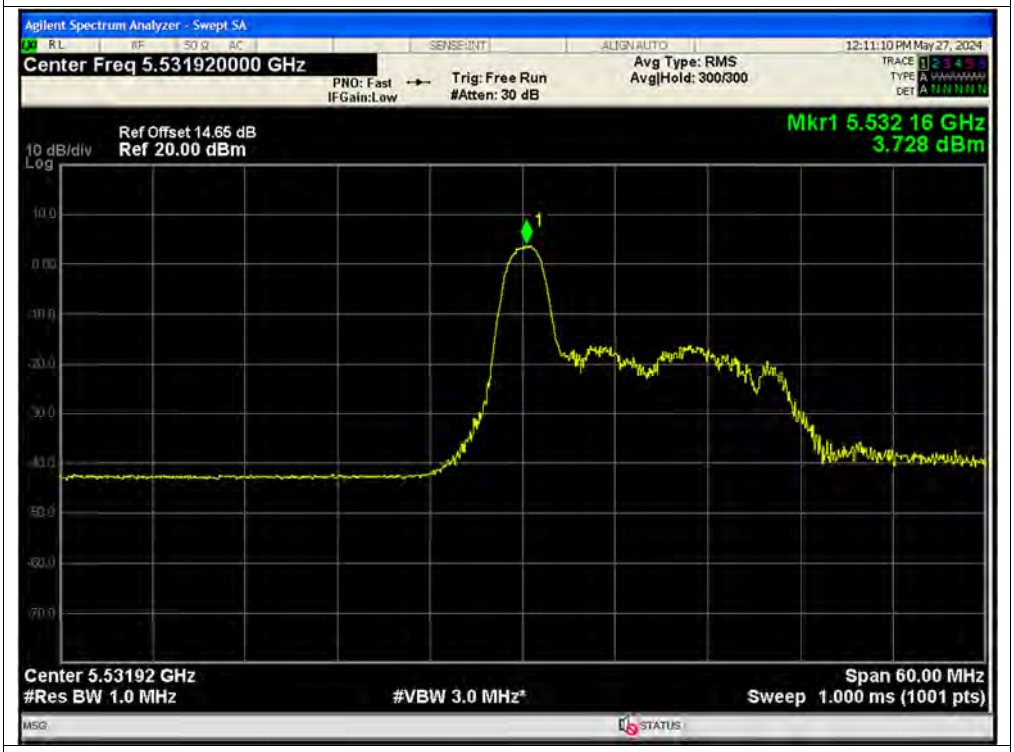
PSD NVNT ax40 26@0 5310MHz Ant1



PSD NVNT ax40 26@0 5510MHz Ant1

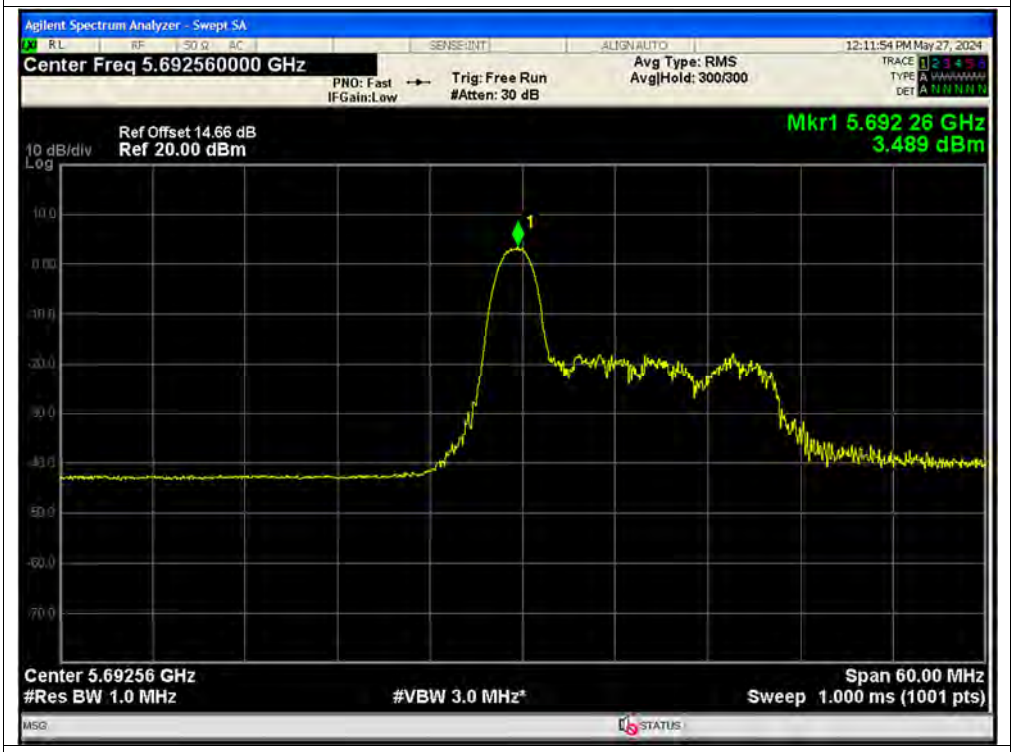


PSD NVNT ax40 26@0 5550MHz Ant1



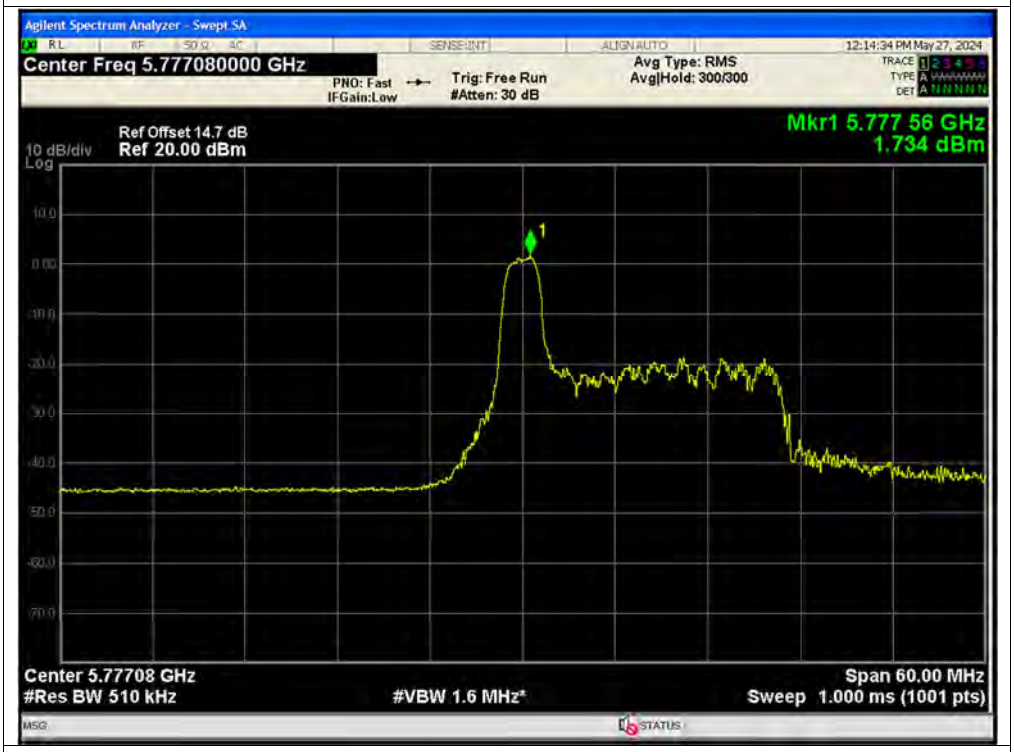
PSD NVNT ax40 26@0 5630MHz Ant1

PSD NVNT ax40 26@0 5710MHz Ant1



PSD NVNT ax40 26@0 5755MHz Ant1

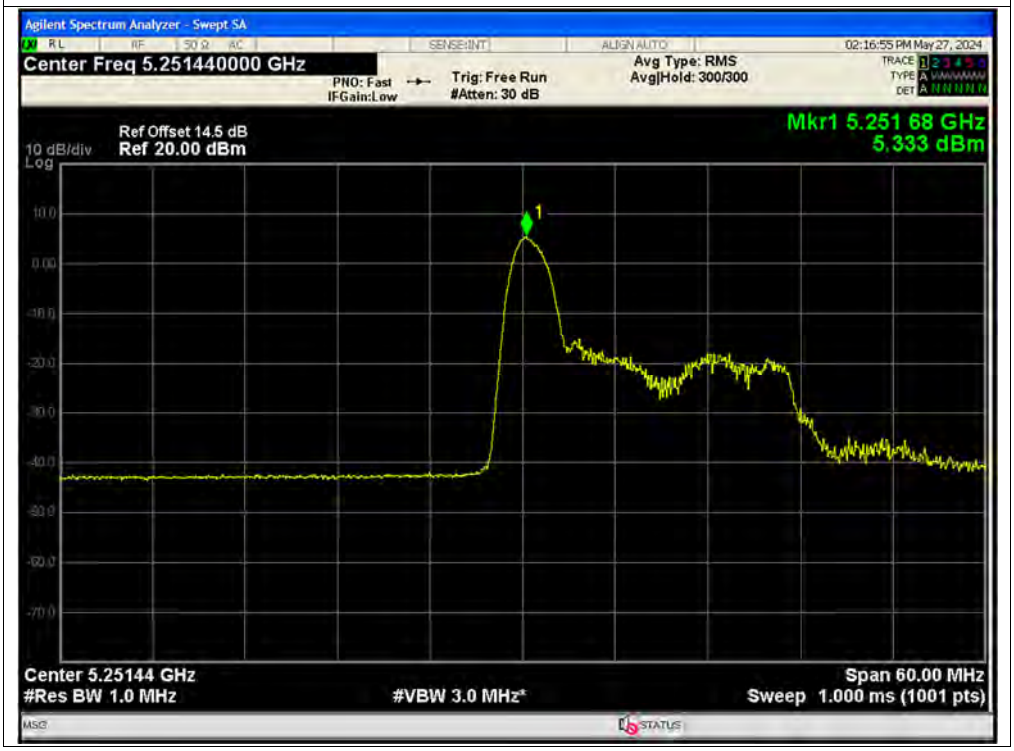
PSD NVNT ax40 26@0 5795MHz Ant1



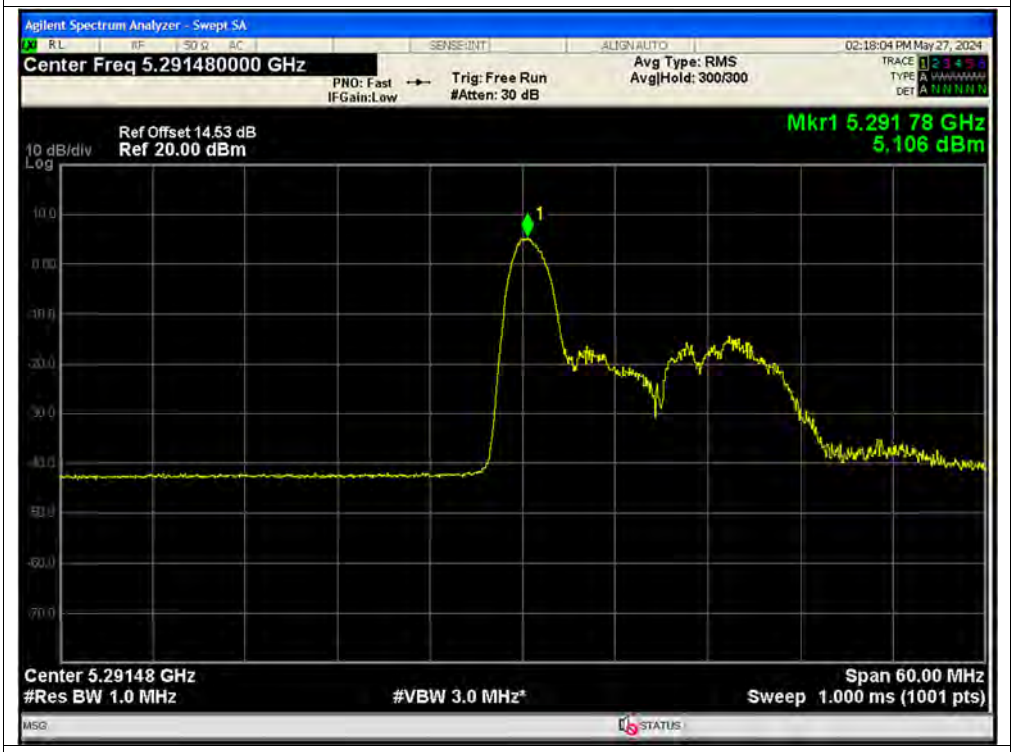
PSD NVNT ax40 26@0 5190MHz Ant2

PSD NVNT ax40 26@0 5230MHz Ant2

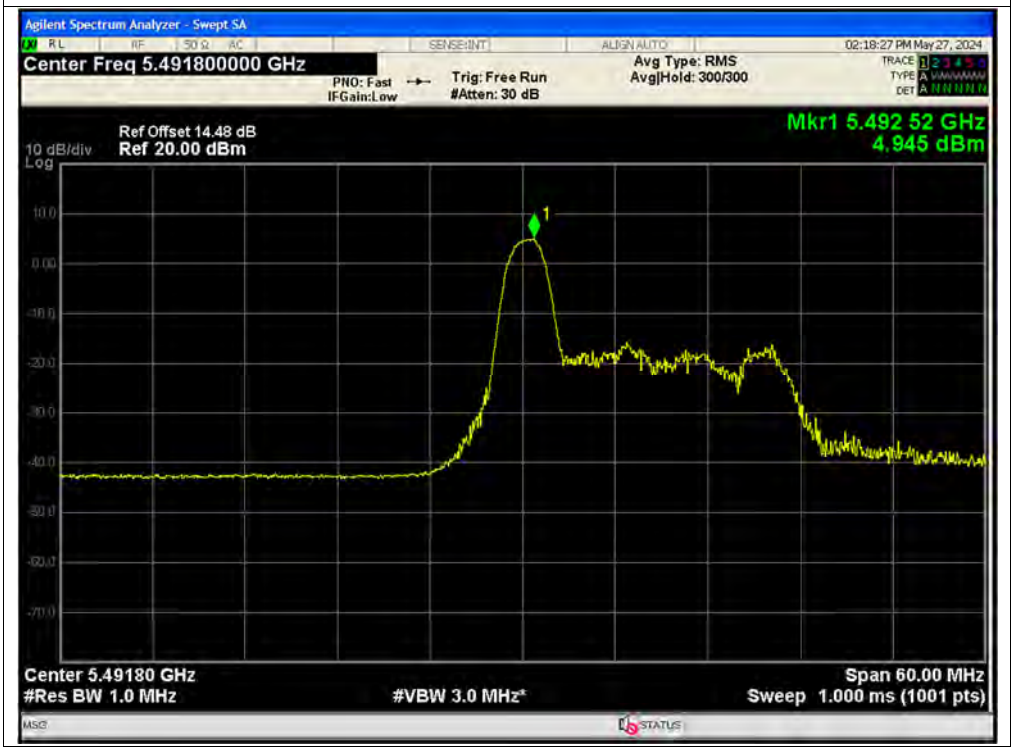
PSD NVNT ax40 26@0 5270MHz Ant2



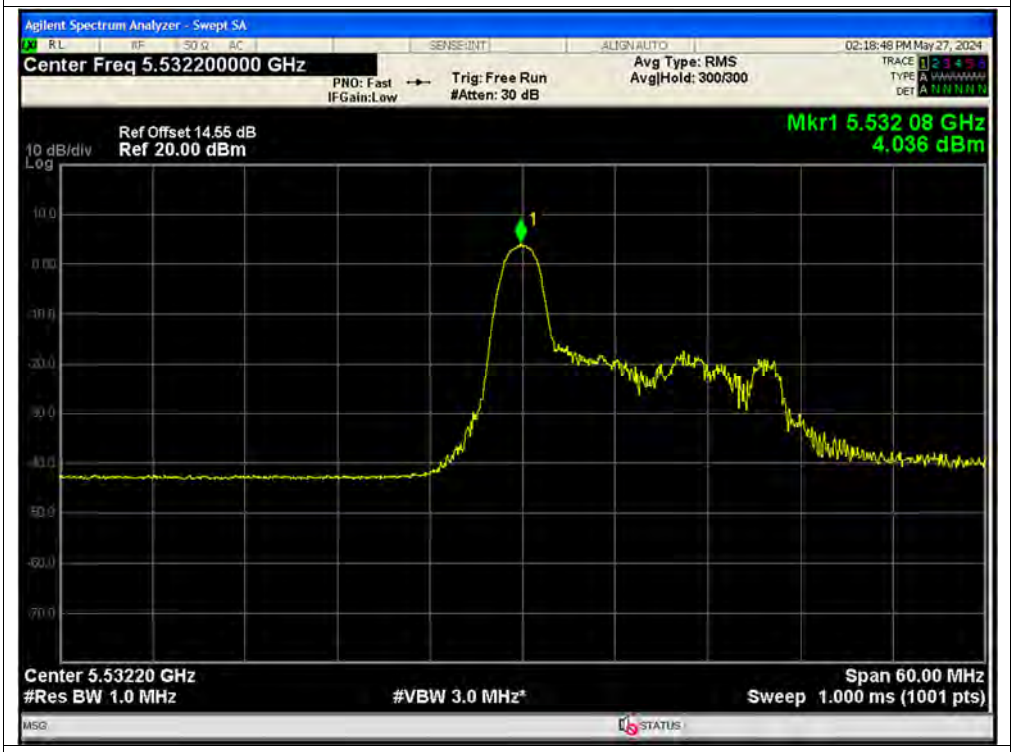
PSD NVNT ax40 26@0 5310MHz Ant2



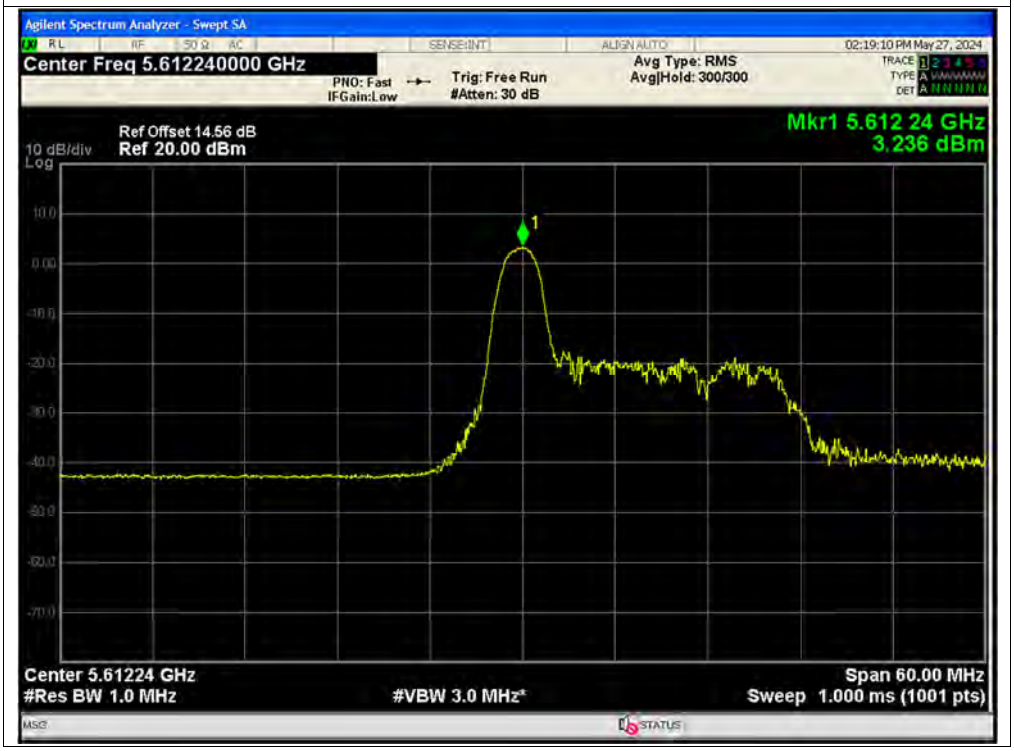
PSD NVNT ax40 26@0 5510MHz Ant2



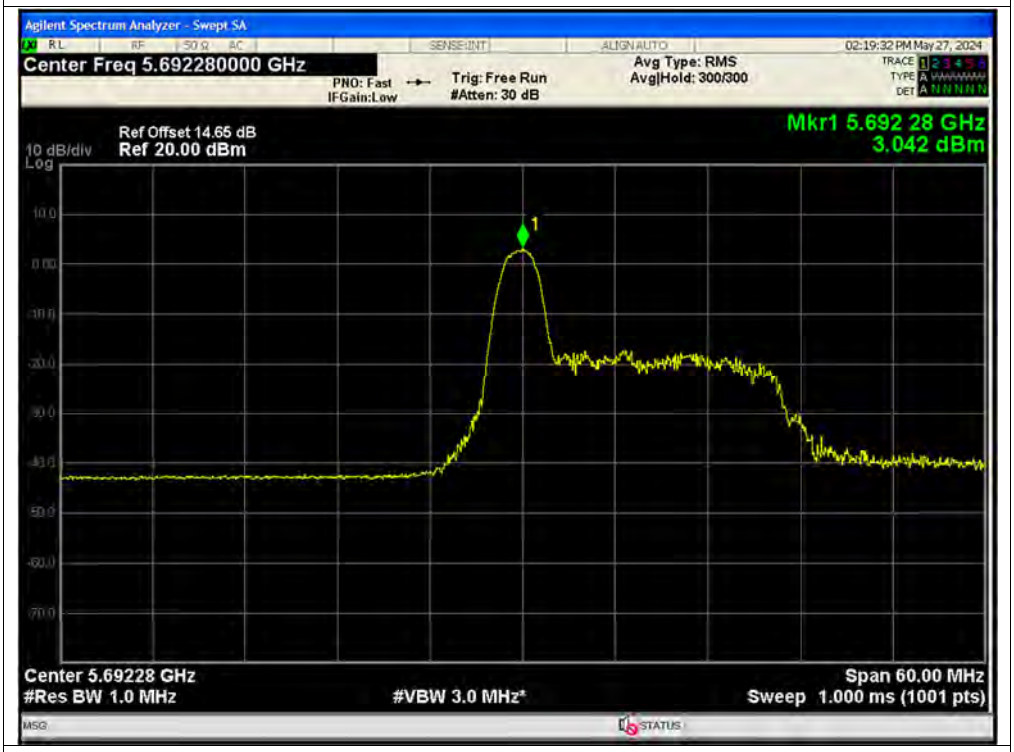
PSD NVNT ax40 26@0 5550MHz Ant2



PSD NVNT ax40 26@0 5630MHz Ant2

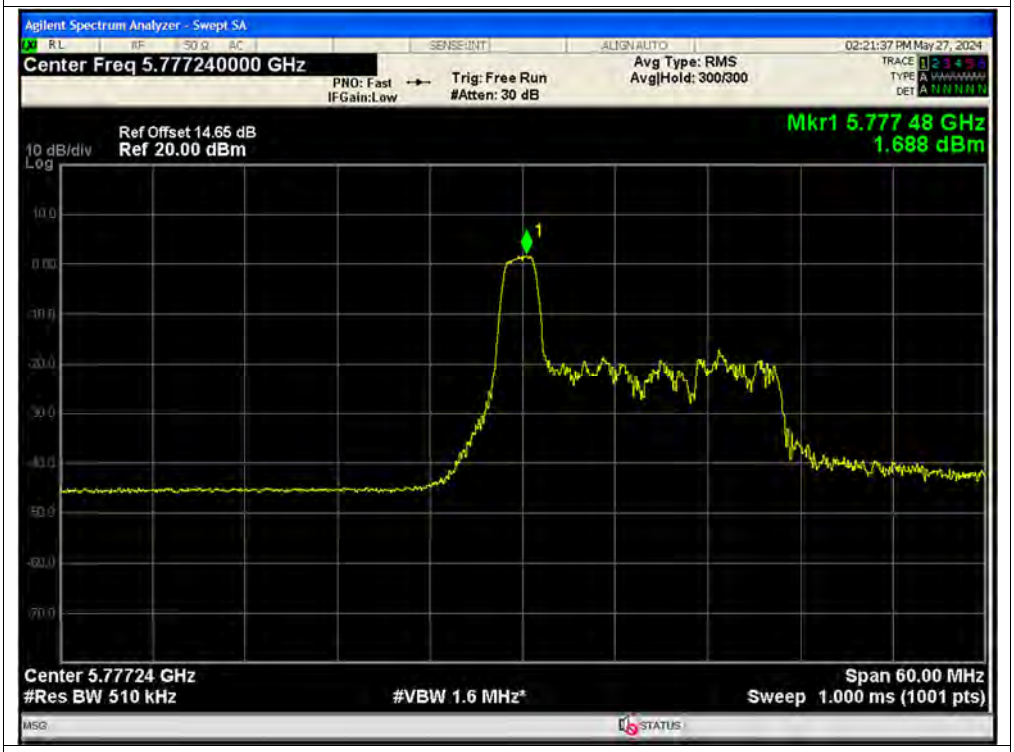


PSD NVNT ax40 26@0 5710MHz Ant2



PSD NVNT ax40 26@0 5755MHz Ant2

PSD NVNT ax40 26@0 5795MHz Ant2



PSD NVNT ax40 52@37 5190MHz Ant1

PSD NVNT ax40 52@37 5230MHz Ant1

PSD NVNT ax40 52@37 5270MHz Ant1

PSD NVNT ax40 52@37 5310MHz Ant1

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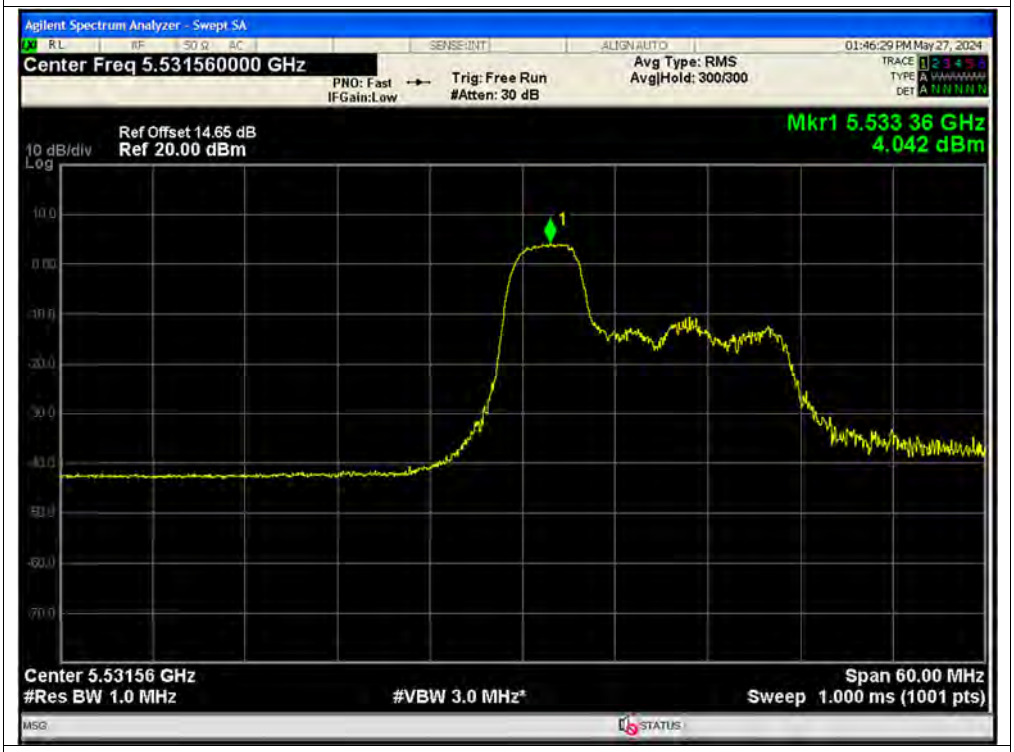
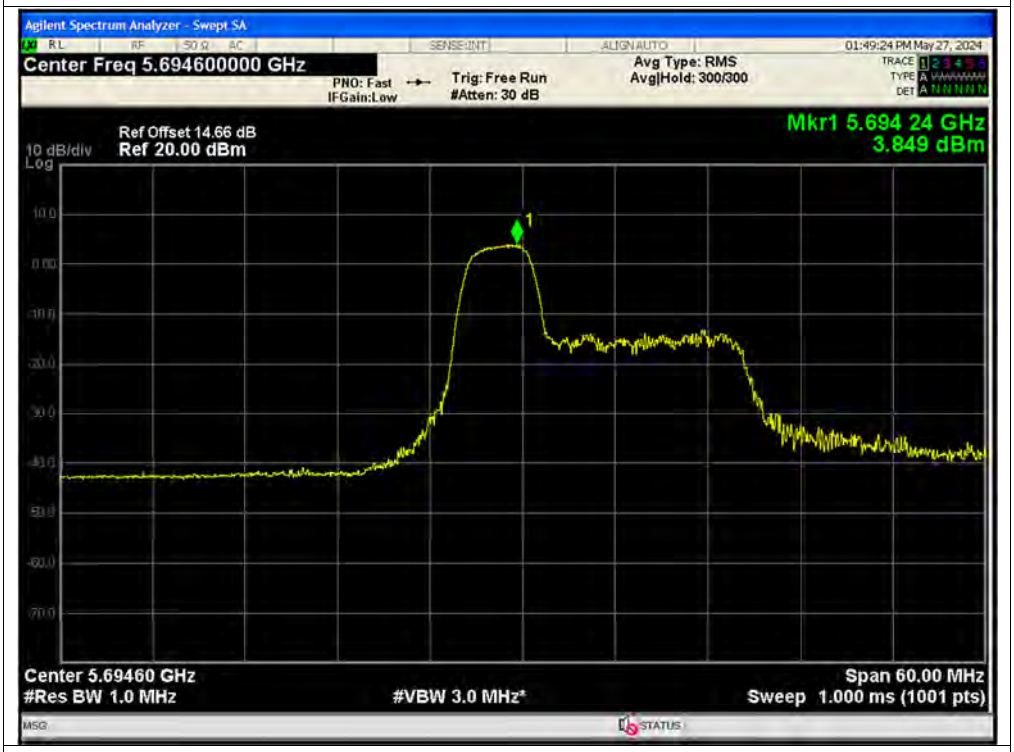
PSD NVNT ax40 52@37 5550MHz Ant1

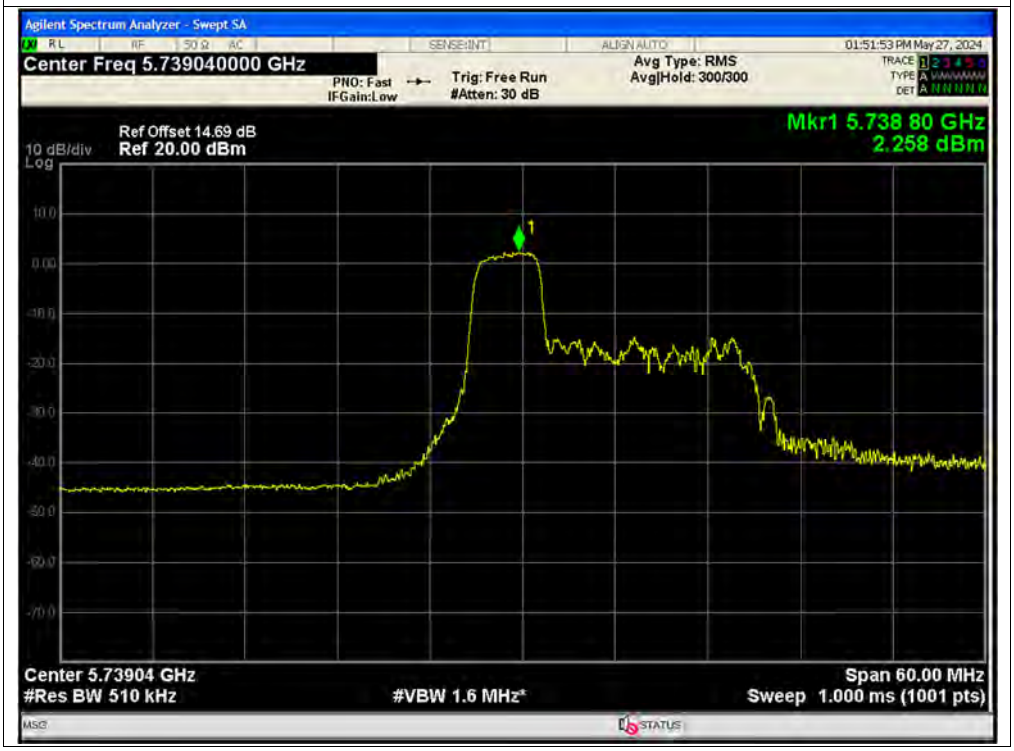


PSD NVNT ax40 52@37 5630MHz Ant1

PSD NVNT ax40 52@37 5710MHz Ant1



PSD NVNT ax40 52@37 5755MHz Ant1

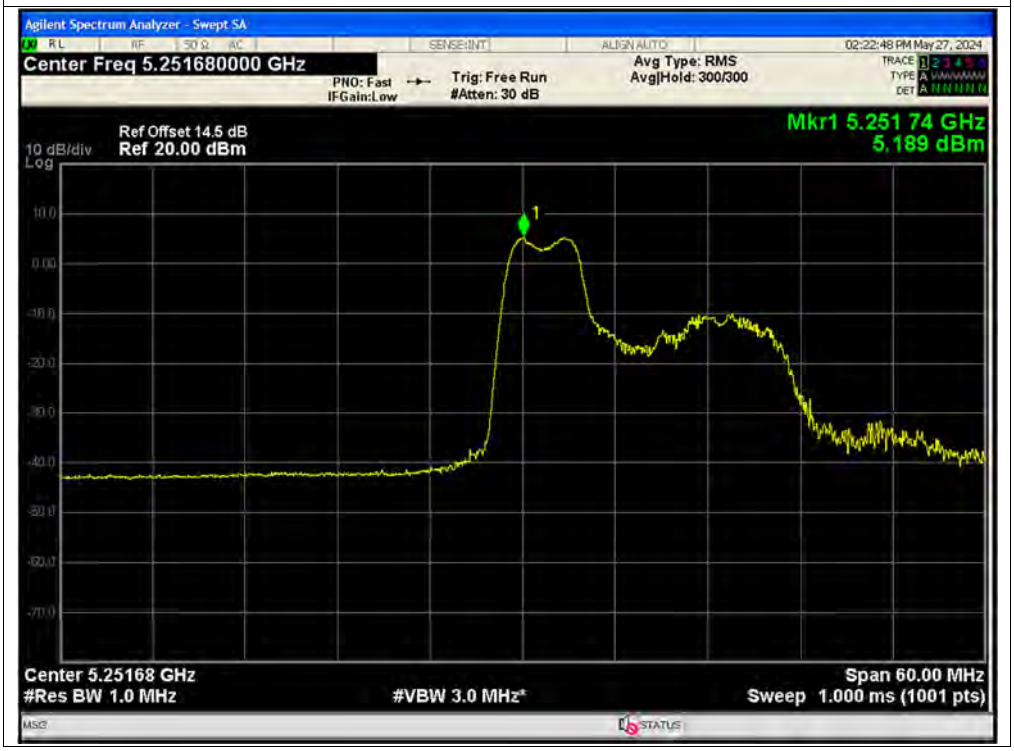


PSD NVNT ax40 52@37 5795MHz Ant1

PSD NVNT ax40 52@37 5190MHz Ant2

PSD NVNT ax40 52@37 5230MHz Ant2

PSD NVNT ax40 52@37 5270MHz Ant2



PSD NVNT ax40 52@37 5310MHz Ant2

PSD NVNT ax40 52@37 5510MHz Ant2

PSD NVNT ax40 52@37 5550MHz Ant2

PSD NVNT ax40 52@37 5630MHz Ant2

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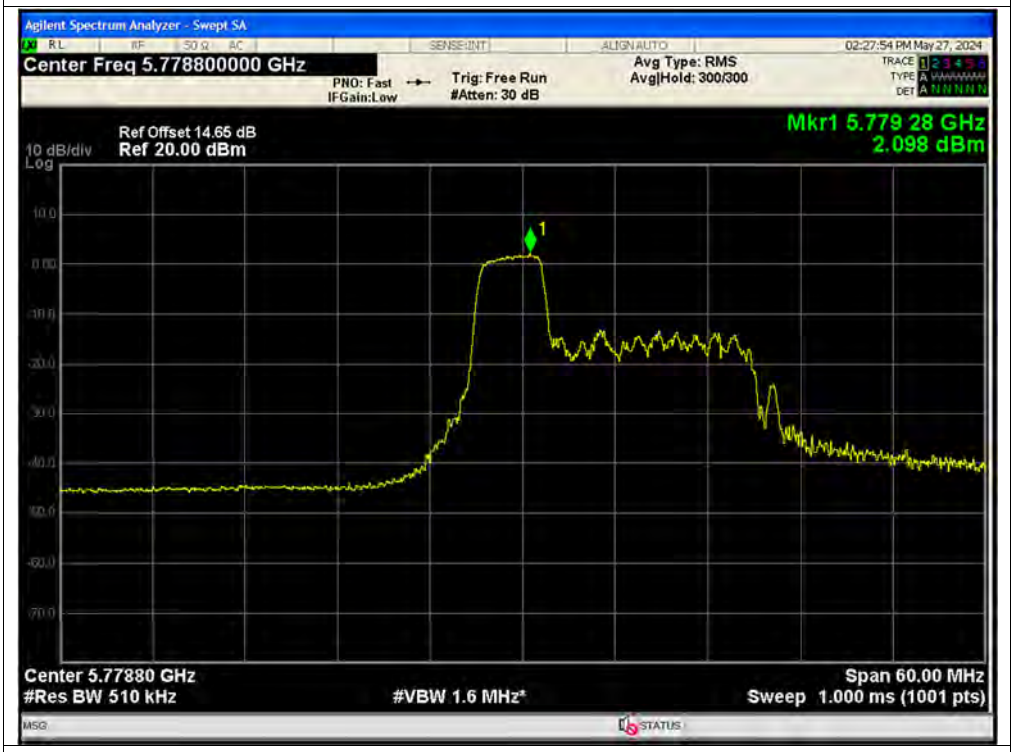
PSD NVNT ax40 52@37 5755MHz Ant2

PSD NVNT ax40 52@37 5795MHz Ant2



PSD NVNT ax40 106@53 5190MHz Ant1

PSD NVNT ax40 106@53 5230MHz Ant1

PSD NVNT ax40 106@53 5270MHz Ant1

PSD NVNT ax40 106@53 5310MHz Ant1

PSD NVNT ax40 106@53 5510MHz Ant1

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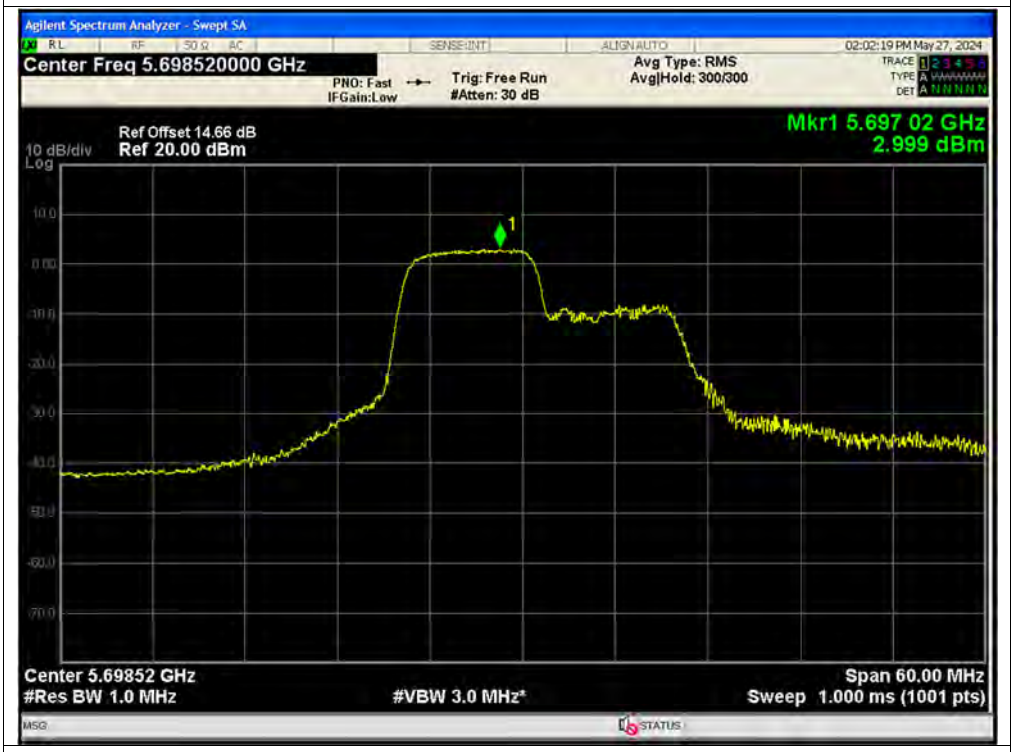
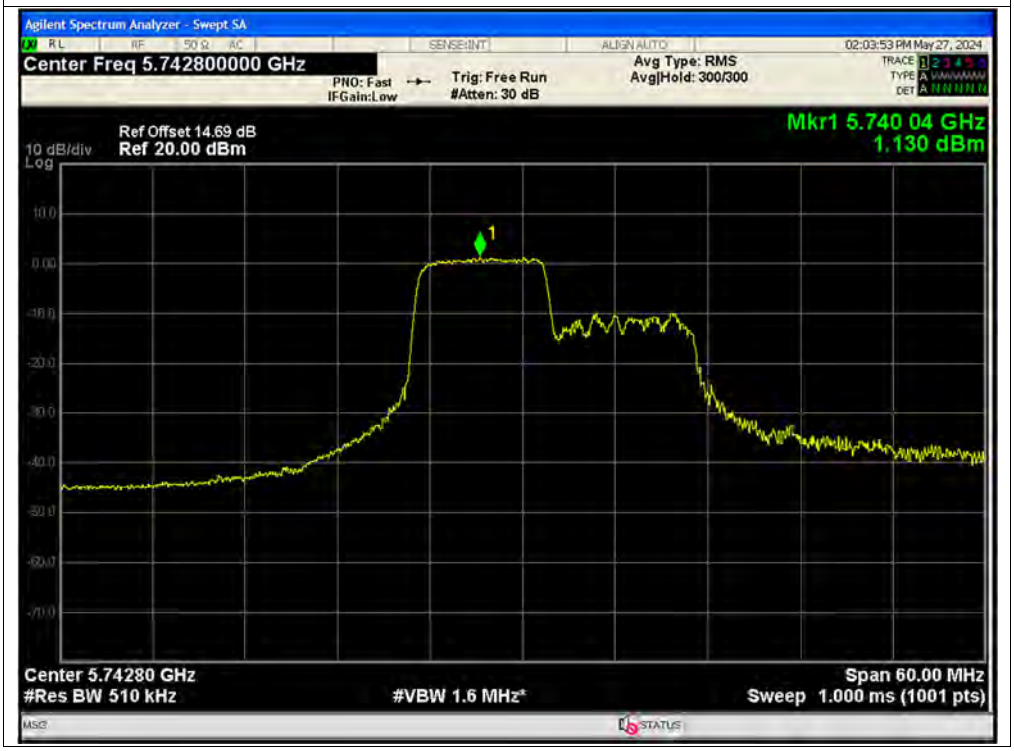


PSD NVNT ax40 106@53 5755MHz Ant1



PSD NVNT ax40 106@53 5795MHz Ant1

PSD NVNT ax40 106@53 5190MHz Ant2

PSD NVNT ax40 106@53 5230MHz Ant2

PSD NVNT ax40 106@53 5270MHz Ant2

PSD NVNT ax40 106@53 5310MHz Ant2

PSD NVNT ax40 106@53 5510MHz Ant2

PSD NVNT ax40 106@53 5550MHz Ant2

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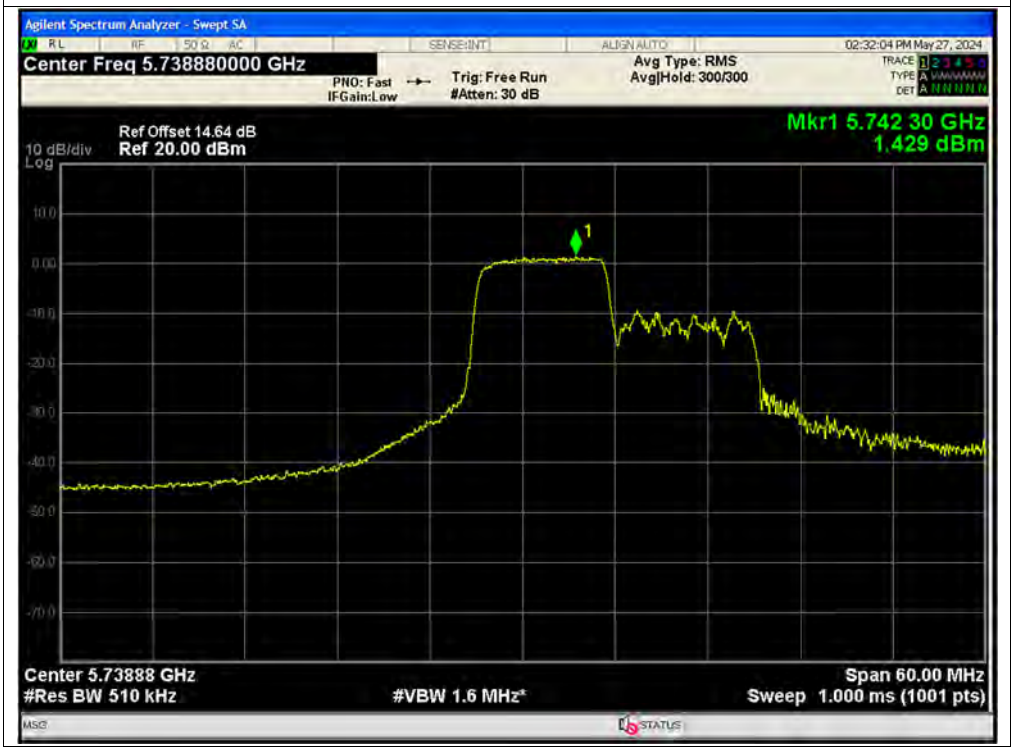

PSD NVNT ax40 106@53 5795MHz Ant2

PSD NVNT ax40 242@61 5190MHz Ant1

PSD NVNT ax40 242@61 5230MHz Ant1

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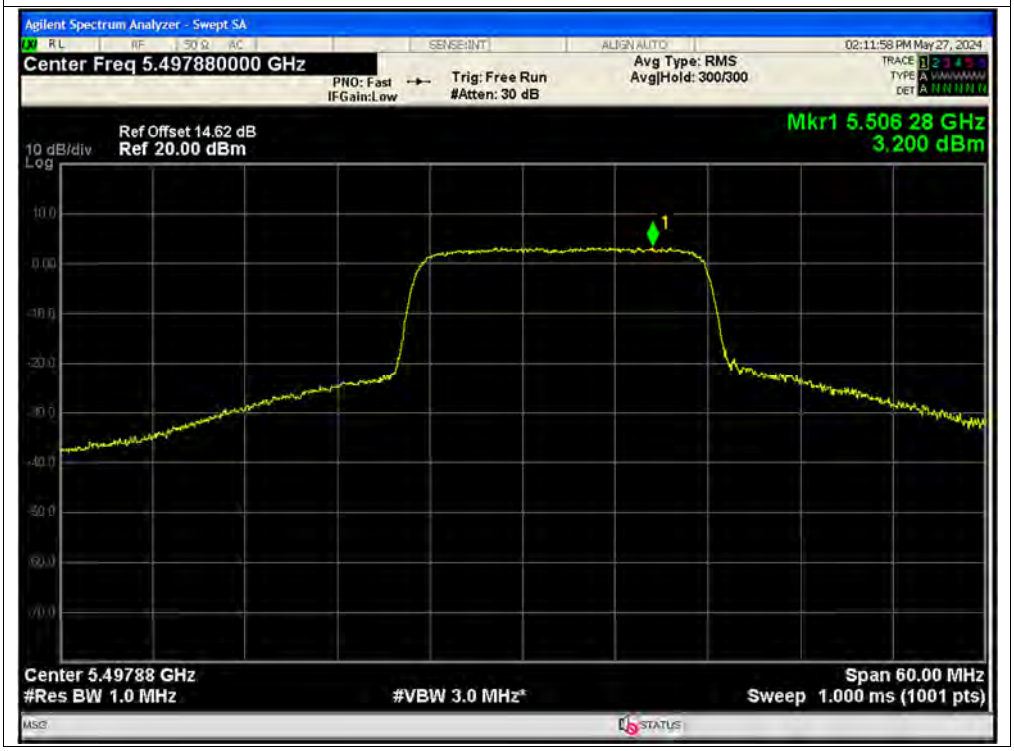
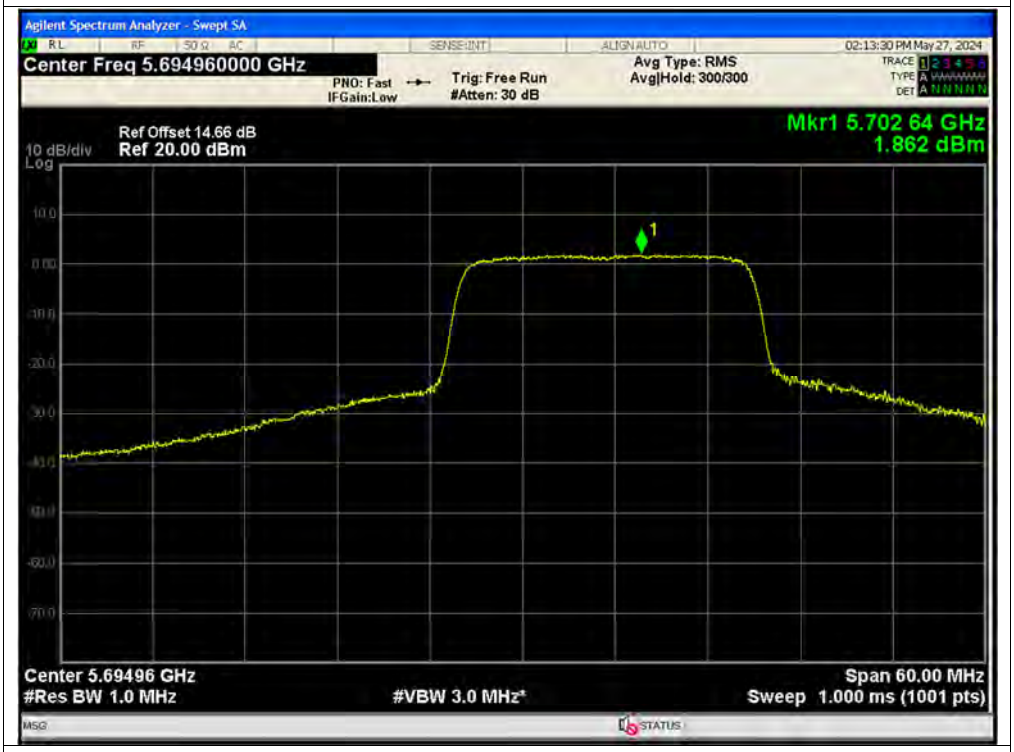
PSD NVNT ax40 242@61 5510MHz Ant1



PSD NVNT ax40 242@61 5550MHz Ant1

PSD NVNT ax40 242@61 5630MHz Ant1

PSD NVNT ax40 242@61 5710MHz Ant1



PSD NVNT ax40 242@61 5755MHz Ant1

PSD NVNT ax40 242@61 5795MHz Ant1

PSD NVNT ax40 242@61 5190MHz Ant2

PSD NVNT ax40 242@61 5230MHz Ant2

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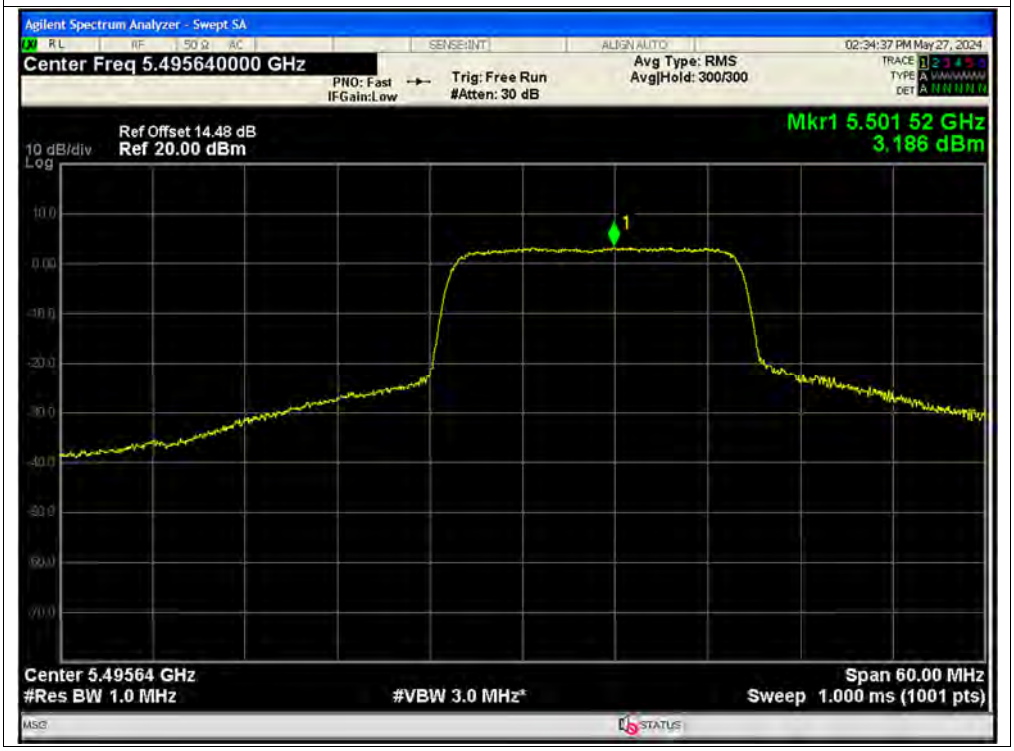
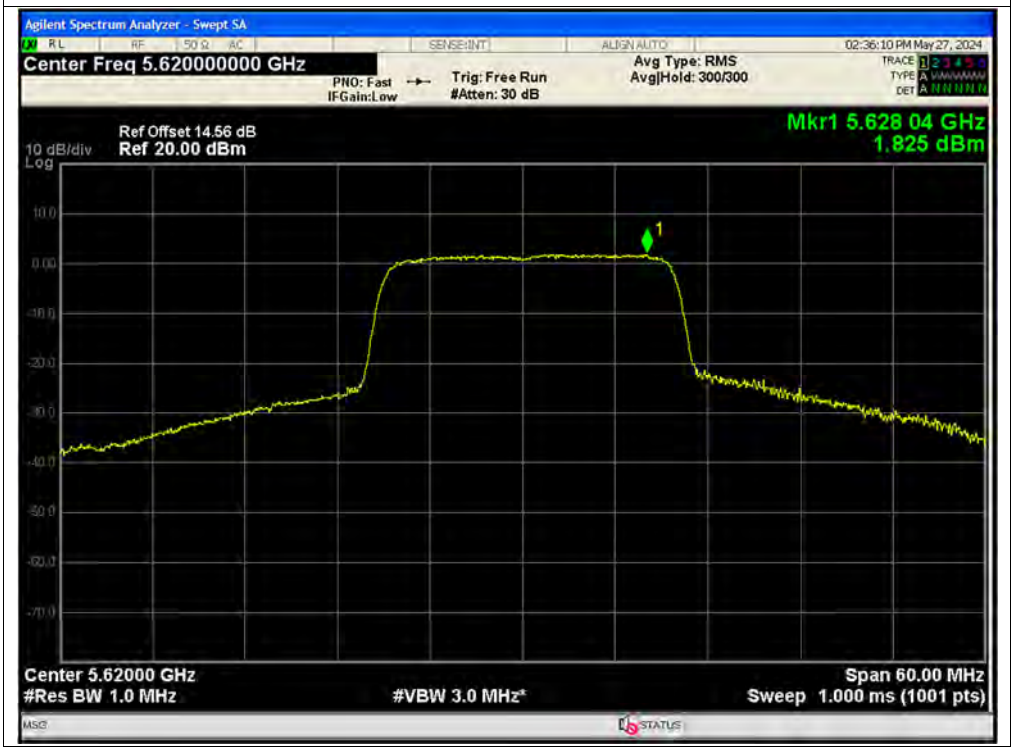
PSD NVNT ax40 242@61 5510MHz Ant2

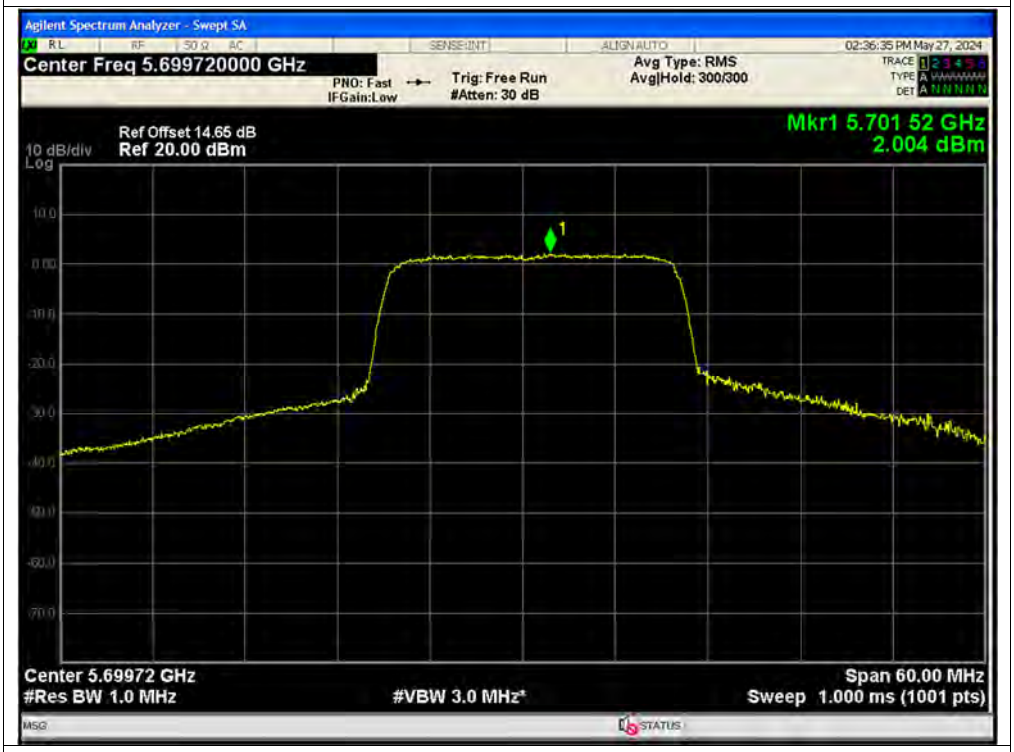


PSD NVNT ax40 242@61 5550MHz Ant2

PSD NVNT ax40 242@61 5630MHz Ant2



PSD NVNT ax40 242@61 5710MHz Ant2

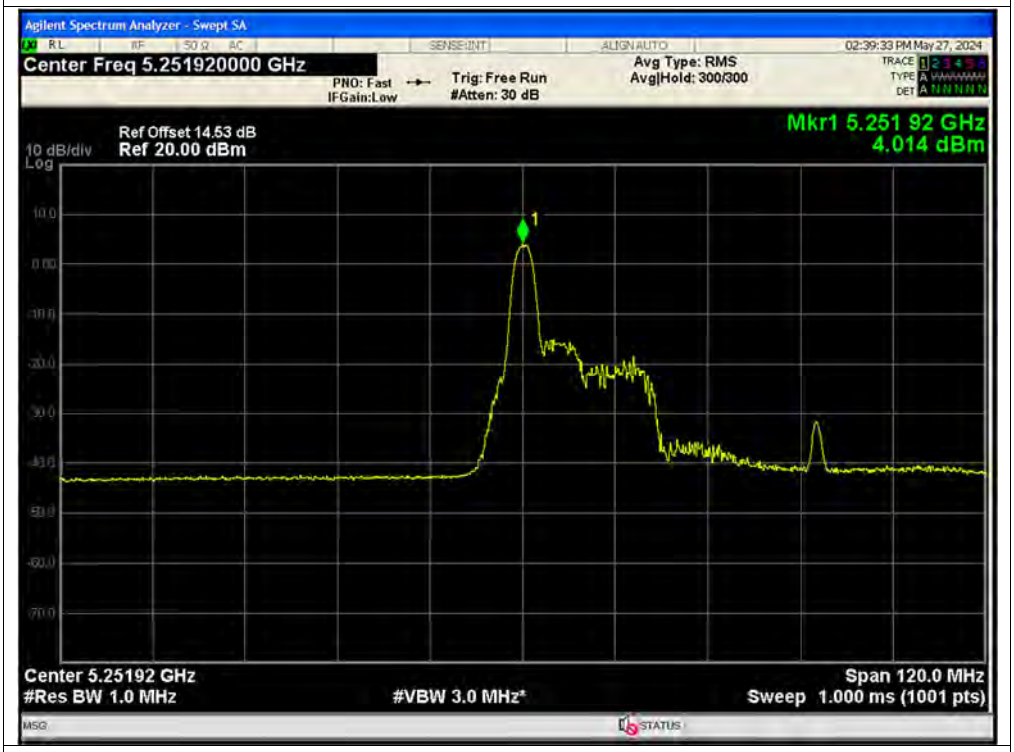


PSD NVNT ax40 242@61 5755MHz Ant2

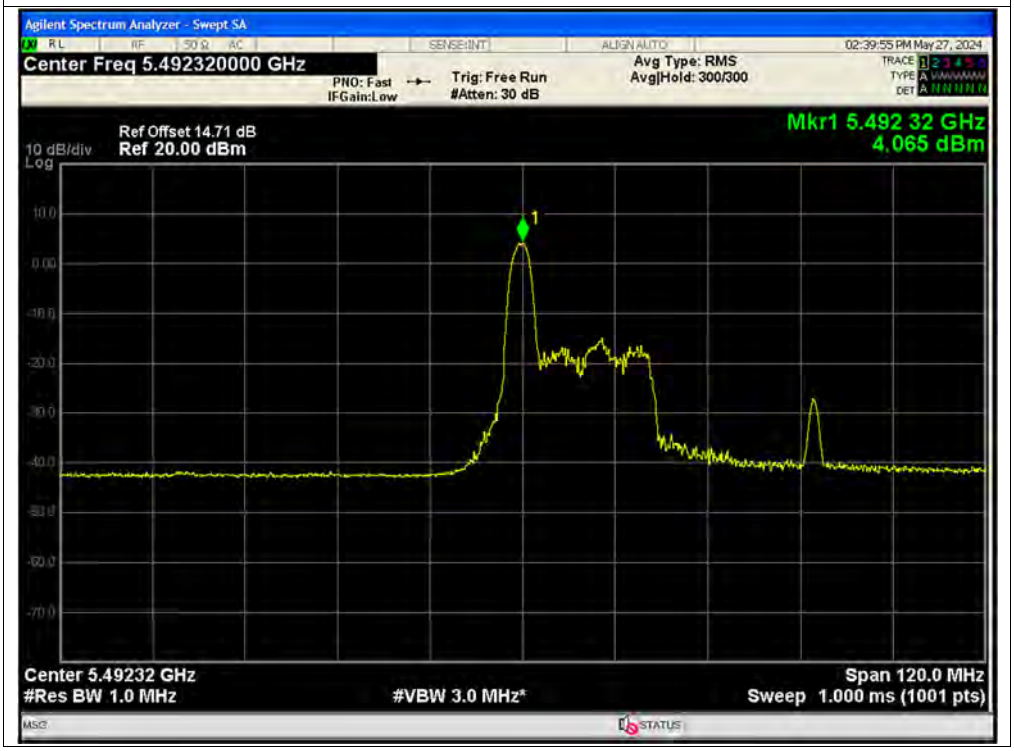
PSD NVNT ax40 242@61 5795MHz Ant2

PSD NVNT ax80 26@0 5210MHz Ant1

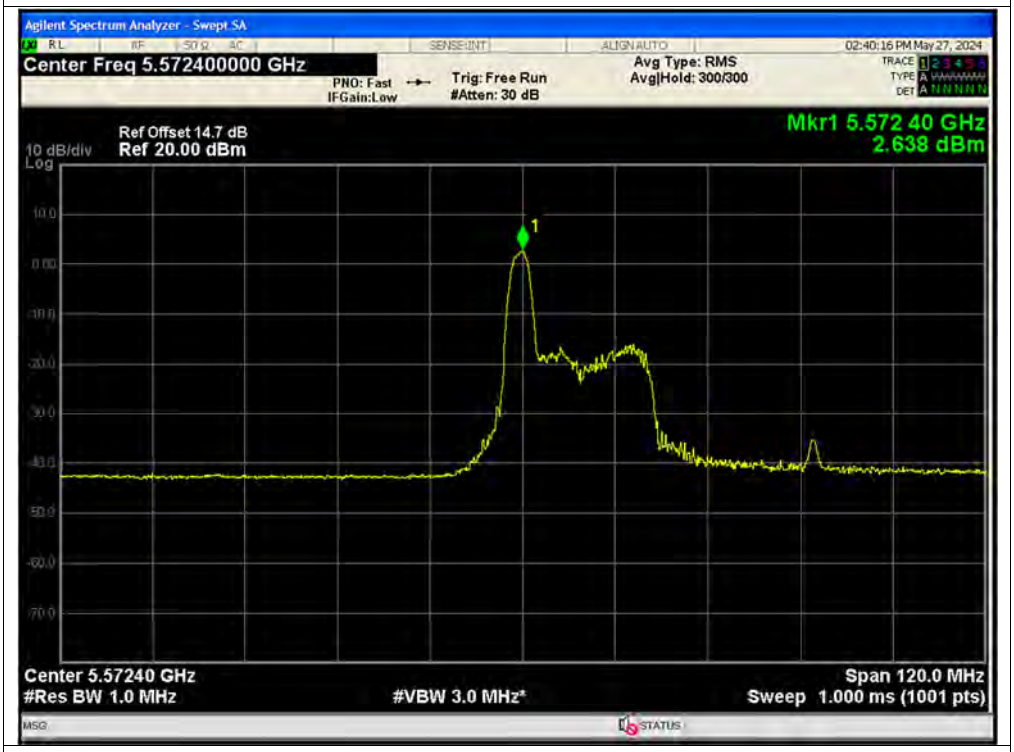
PSD NVNT ax80 26@0 5290MHz Ant1



PSD NVNT ax80 26@0 5530MHz Ant1

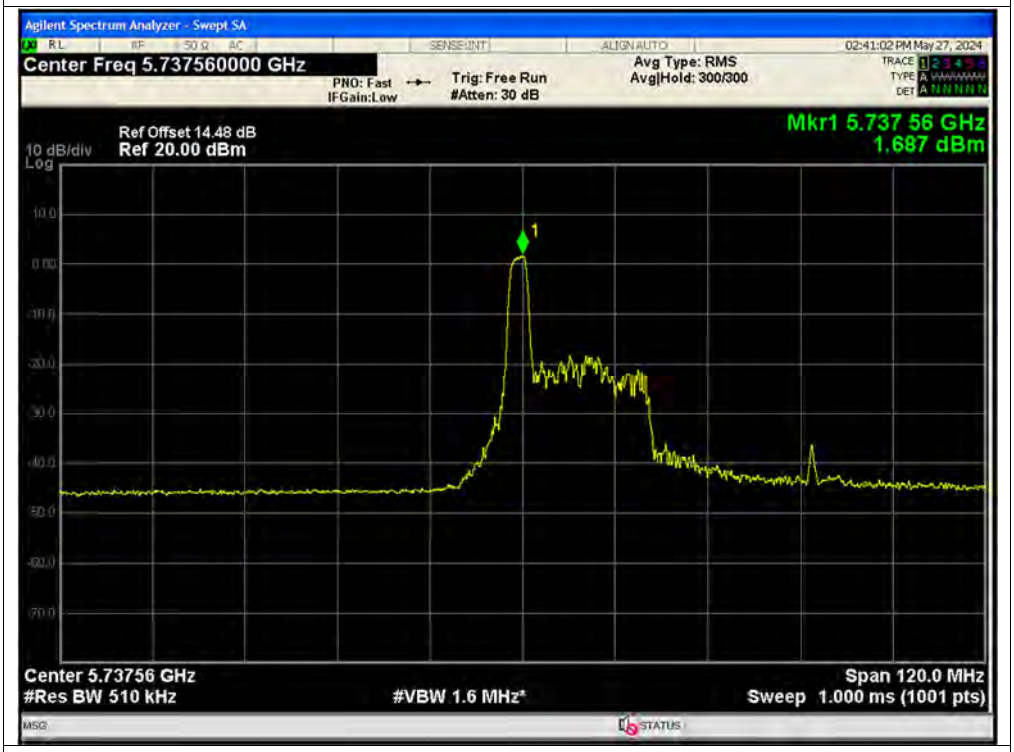


PSD NVNT ax80 26@0 5610MHz Ant1



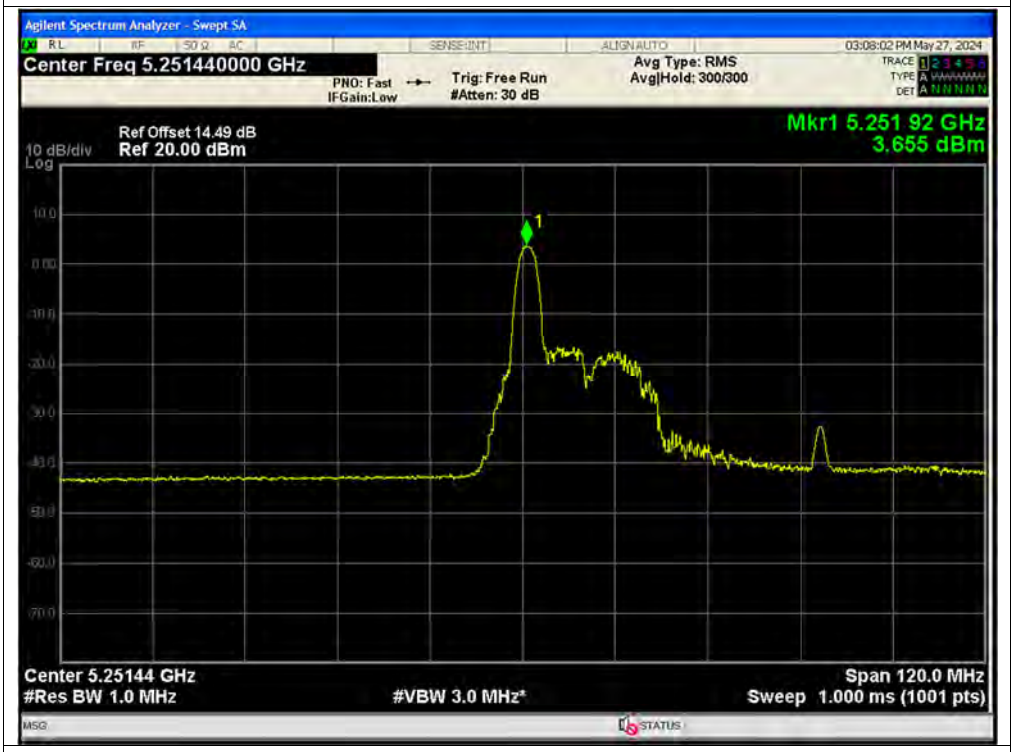
PSD NVNT ax80 26@0 5690MHz Ant1

PSD NVNT ax80 26@0 5775MHz Ant1



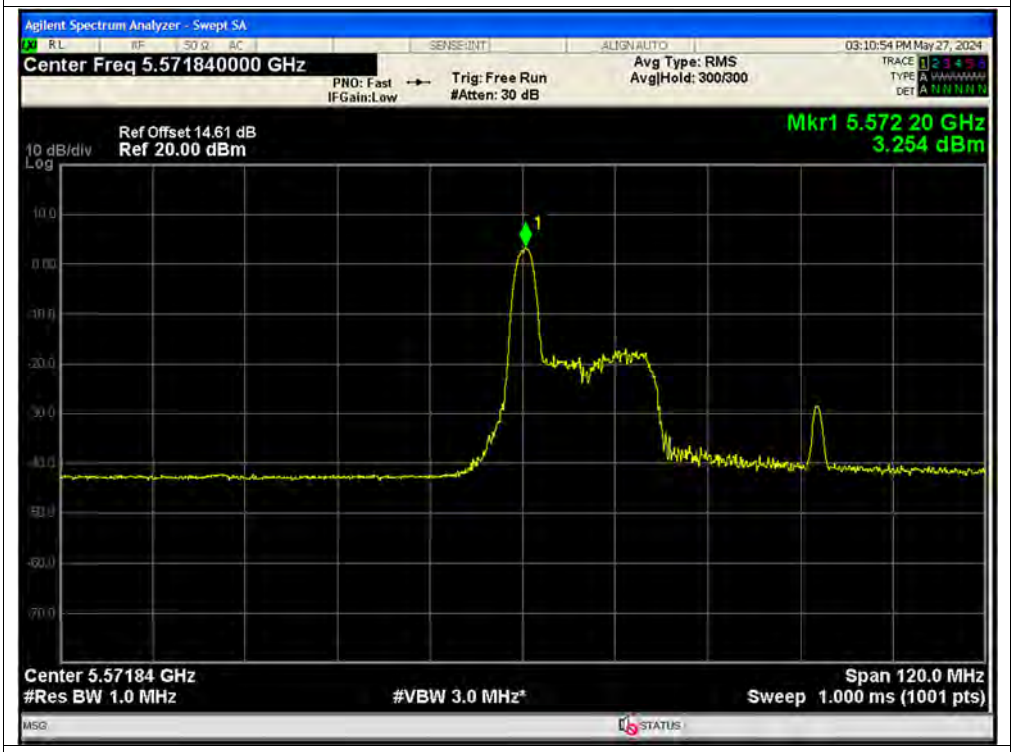
PSD NVNT ax80 26@0 5210MHz Ant2

PSD NVNT ax80 26@0 5290MHz Ant2



PSD NVNT ax80 26@0 5530MHz Ant2

PSD NVNT ax80 26@0 5610MHz Ant2

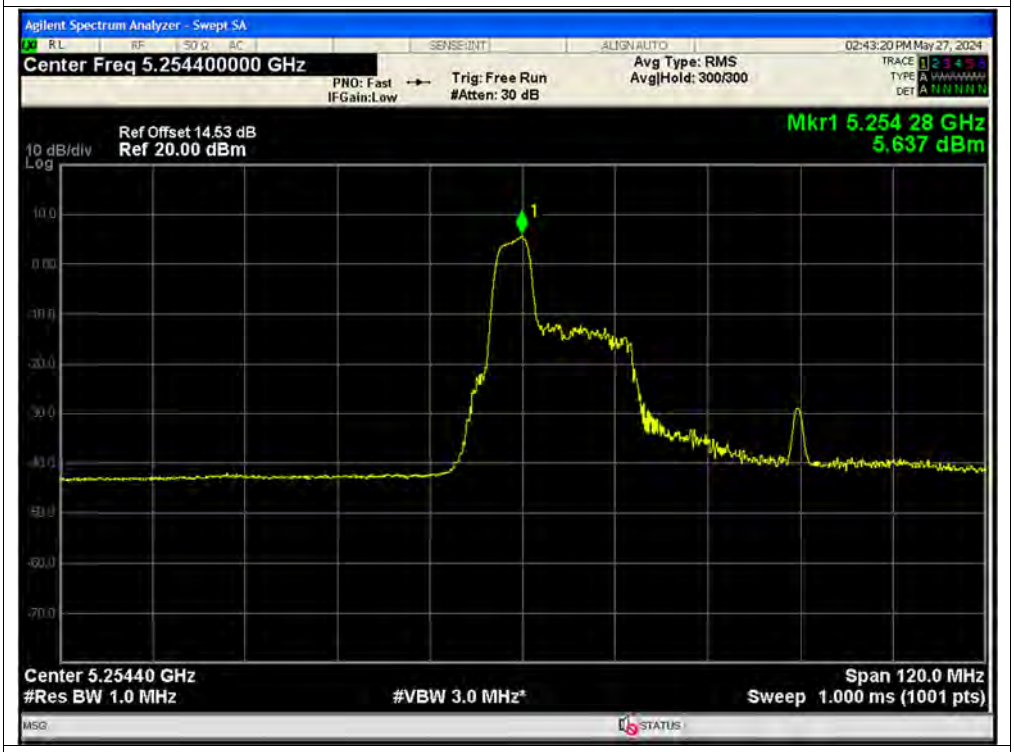


PSD NVNT ax80 26@0 5690MHz Ant2

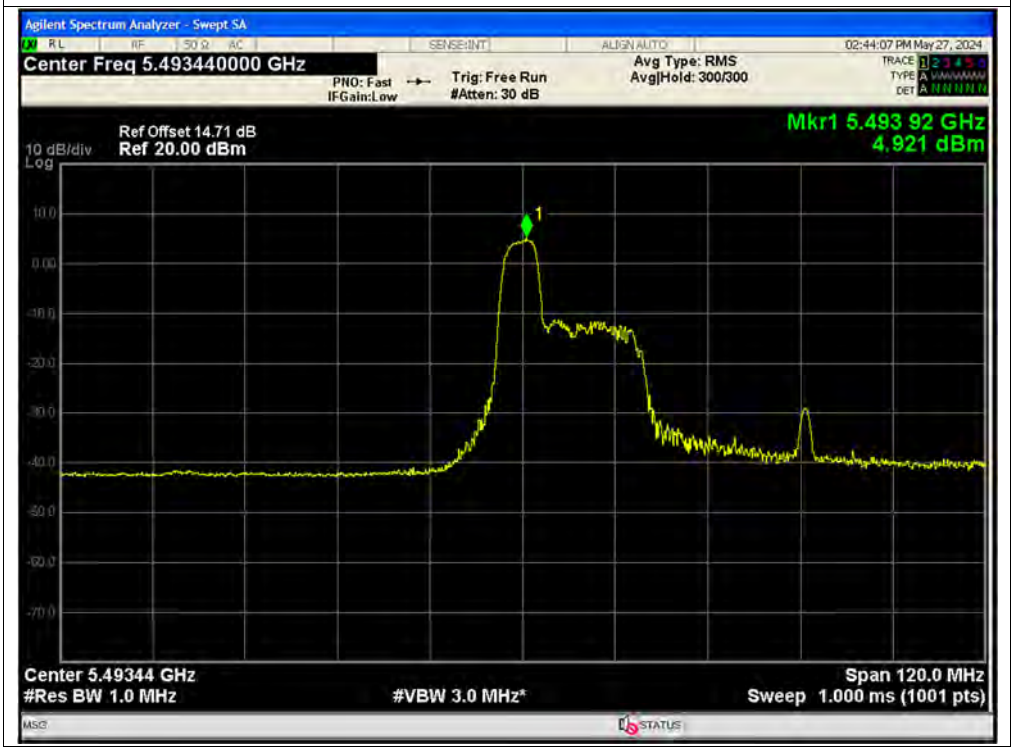
PSD NVNT ax80 26@0 5775MHz Ant2

PSD NVNT ax80 52@37 5210MHz Ant1

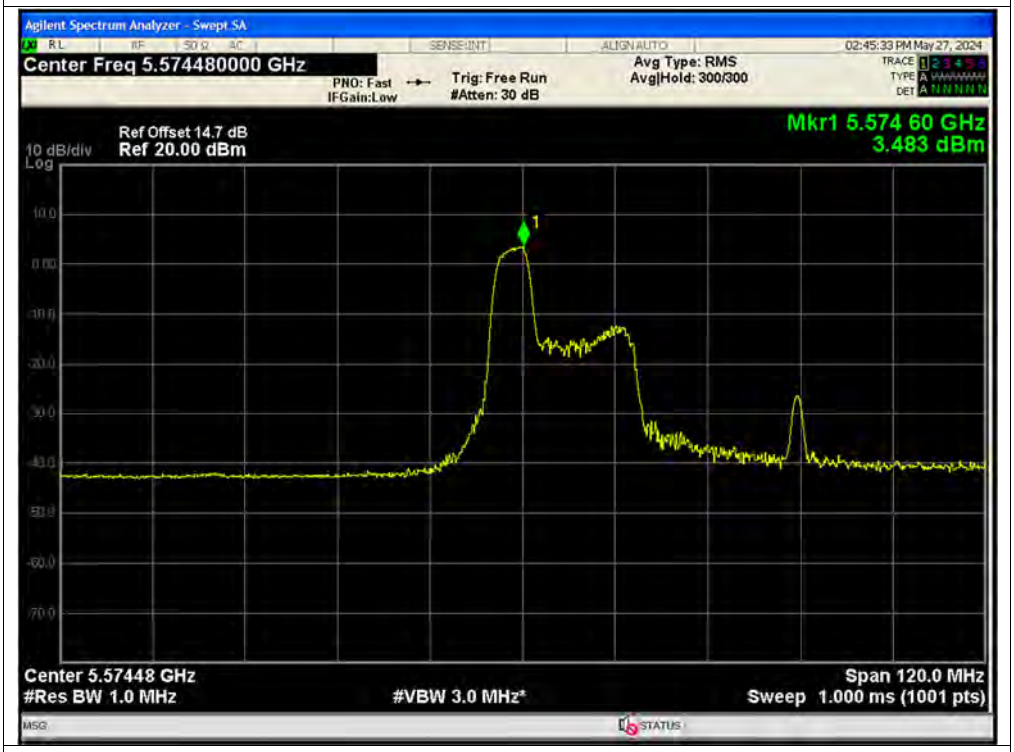
PSD NVNT ax80 52@37 5290MHz Ant1



PSD NVNT ax80 52@37 5530MHz Ant1

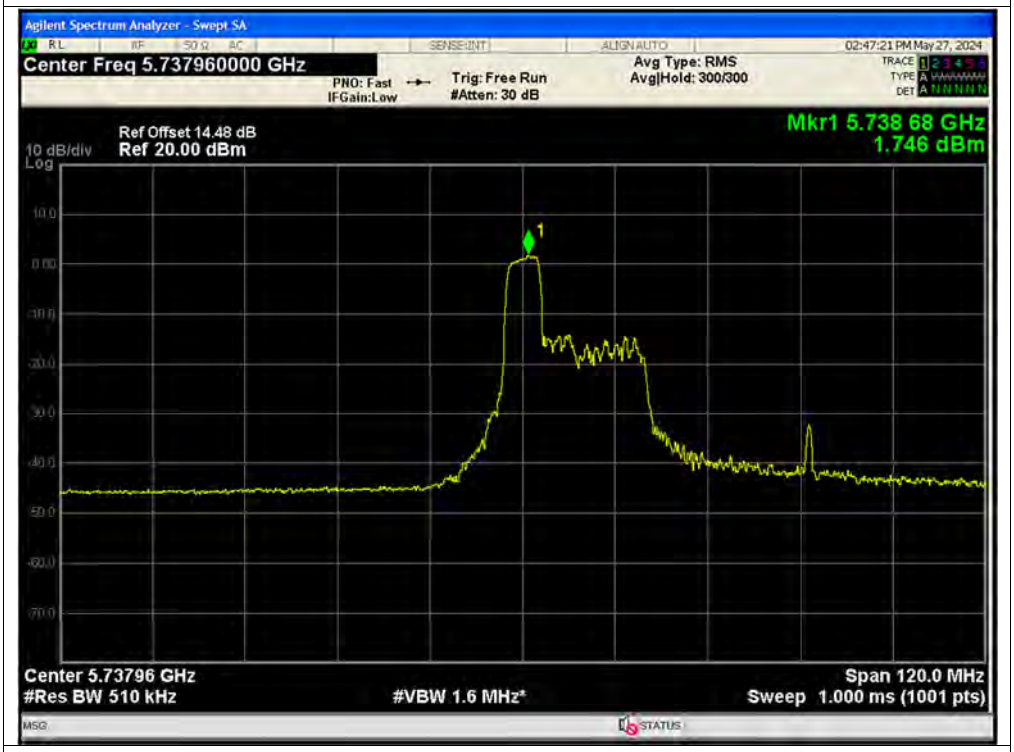


PSD NVNT ax80 52@37 5610MHz Ant1



PSD NVNT ax80 52@37 5690MHz Ant1

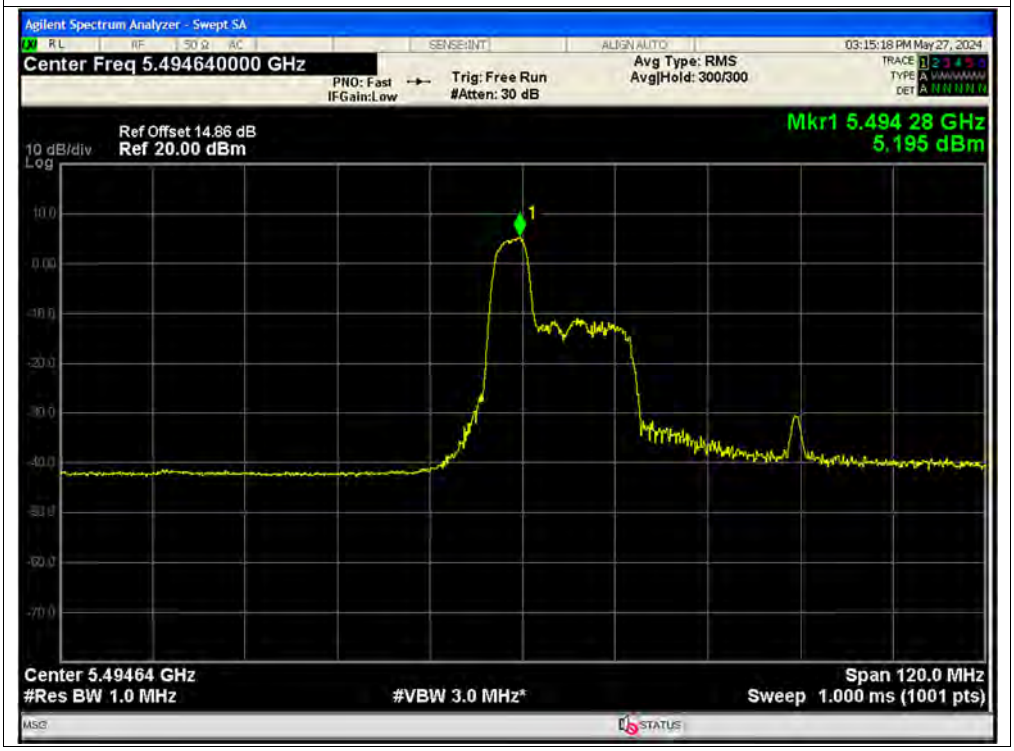
PSD NVNT ax80 52@37 5775MHz Ant1



PSD NVNT ax80 52@37 5210MHz Ant2

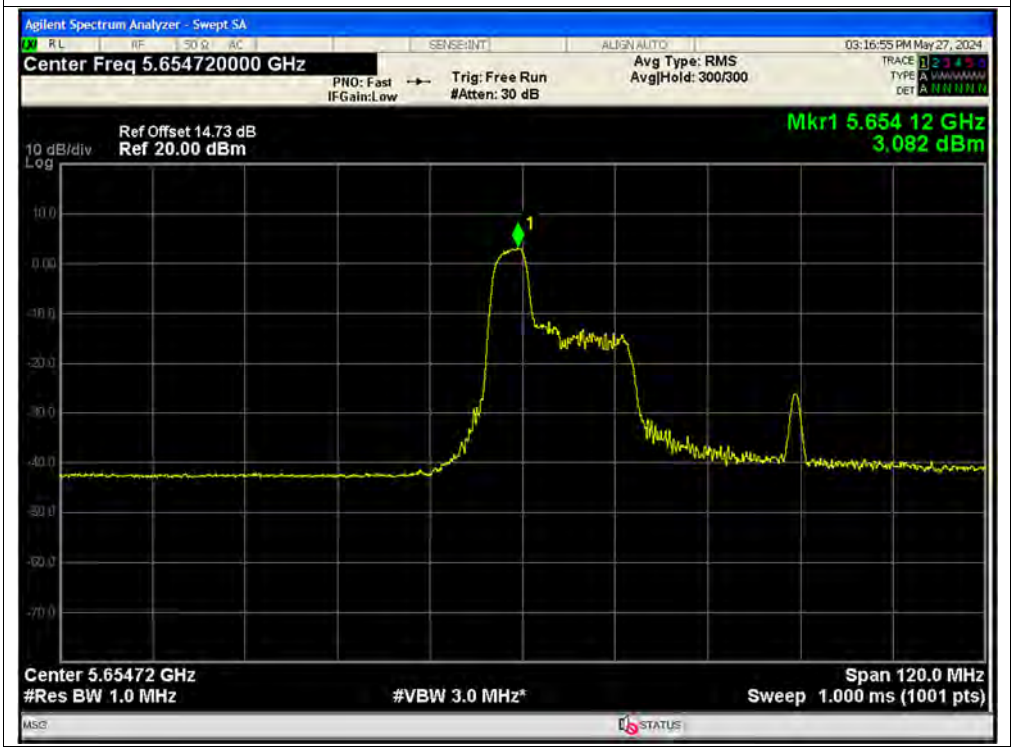
PSD NVNT ax80 52@37 5290MHz Ant2

PSD NVNT ax80 52@37 5530MHz Ant2



PSD NVNT ax80 52@37 5610MHz Ant2

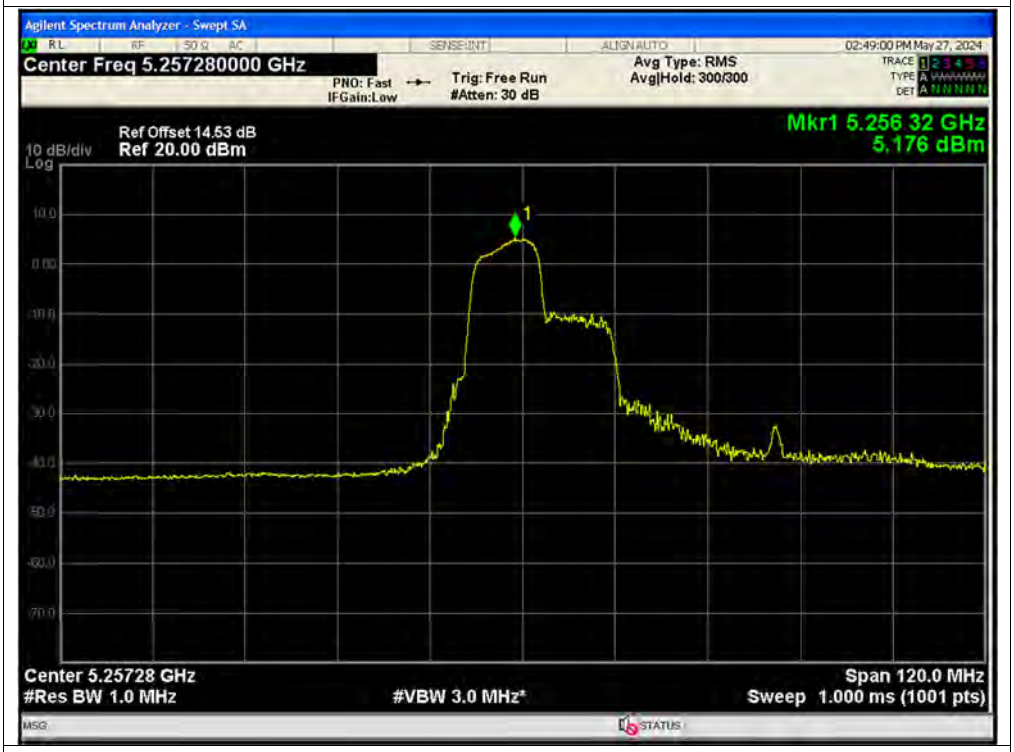
PSD NVNT ax80 52@37 5690MHz Ant2



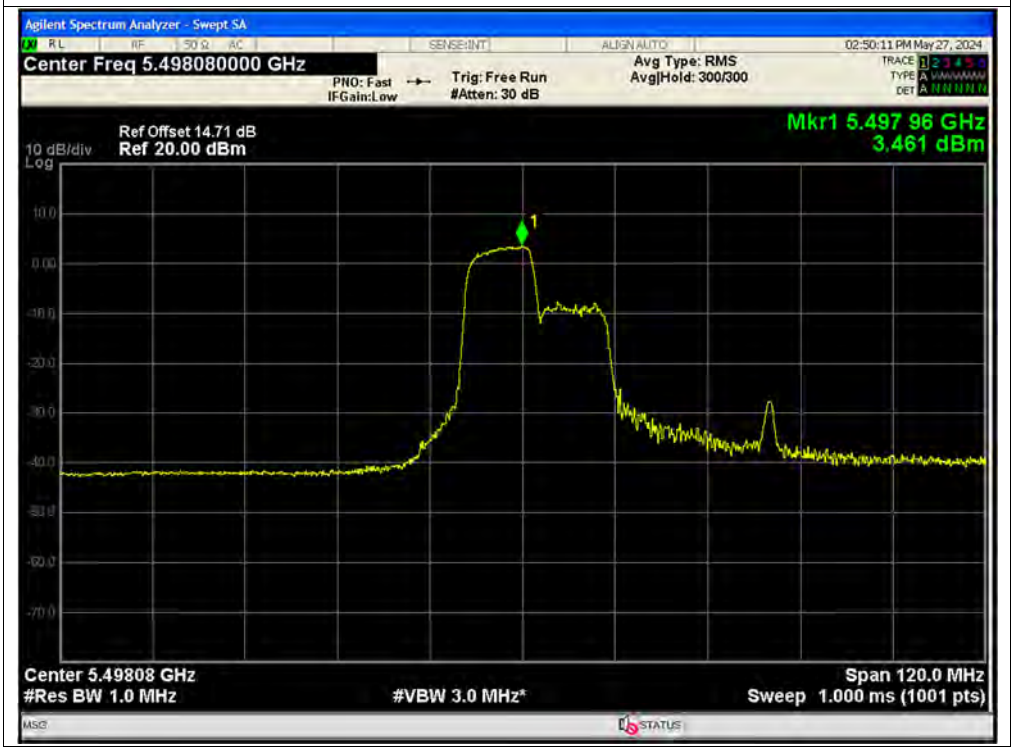
PSD NVNT ax80 52@37 5775MHz Ant2

PSD NVNT ax80 106@53 5210MHz Ant1

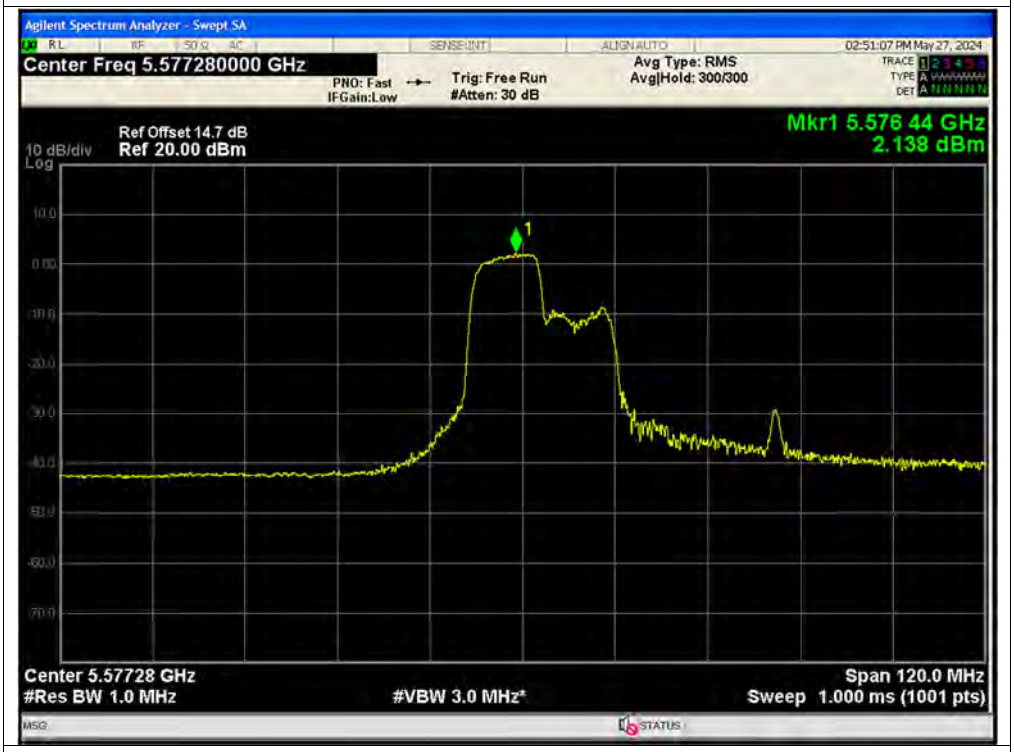
PSD NVNT ax80 106@53 5290MHz Ant1



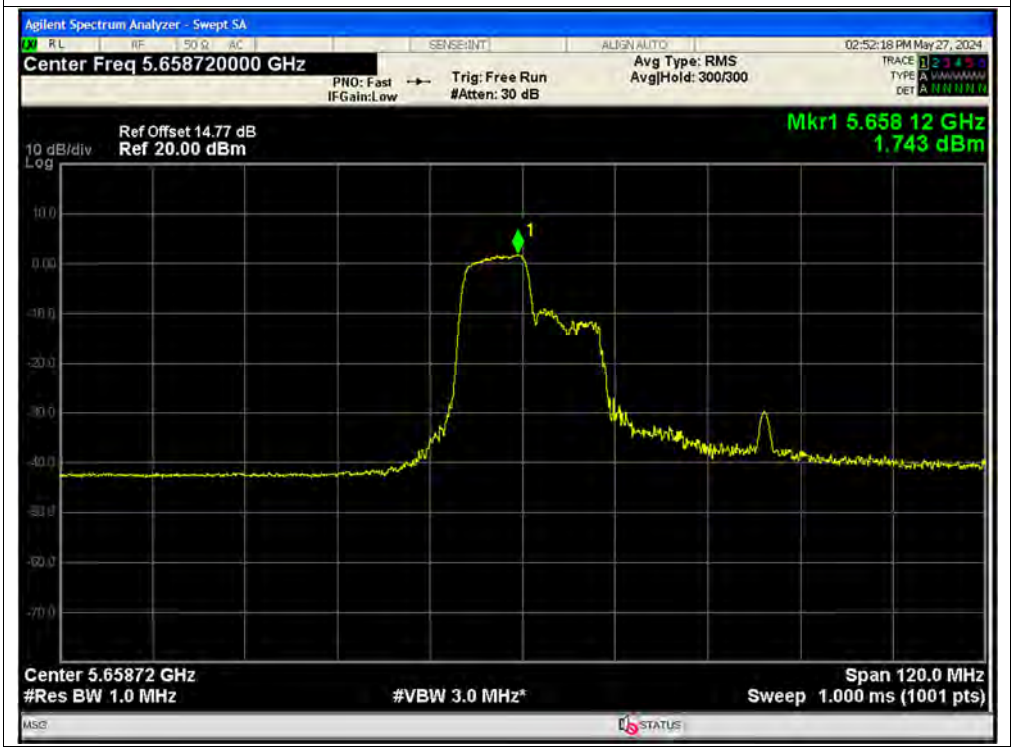
PSD NVNT ax80 106@53 5530MHz Ant1



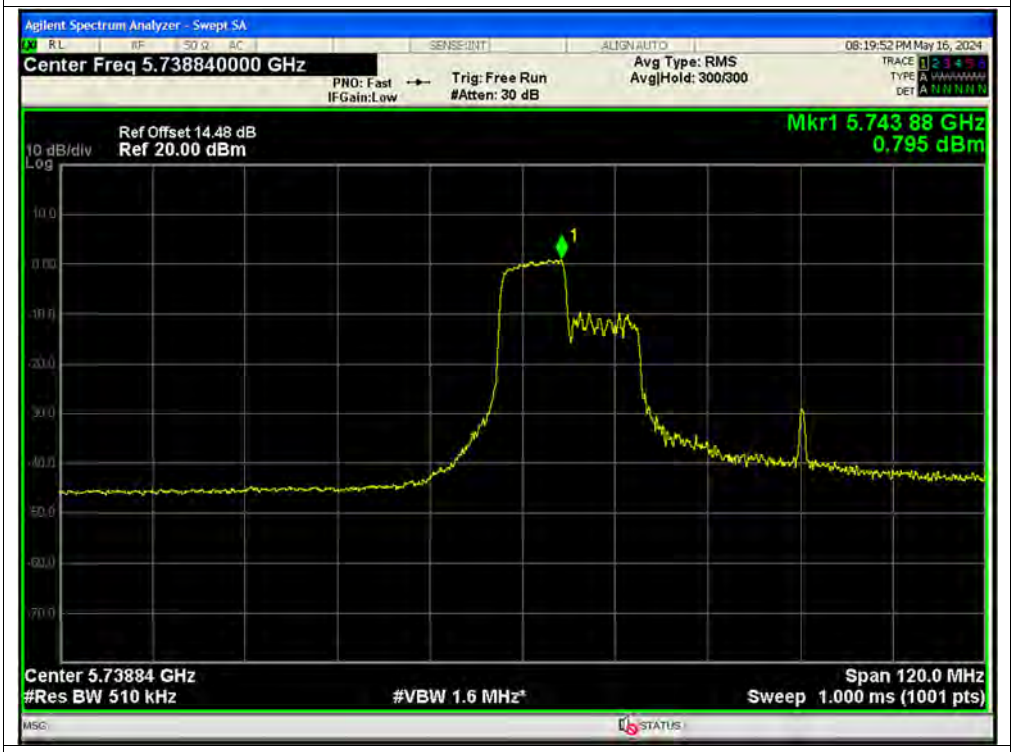
PSD NVNT ax80 106@53 5610MHz Ant1



PSD NVNT ax80 106@53 5690MHz Ant1

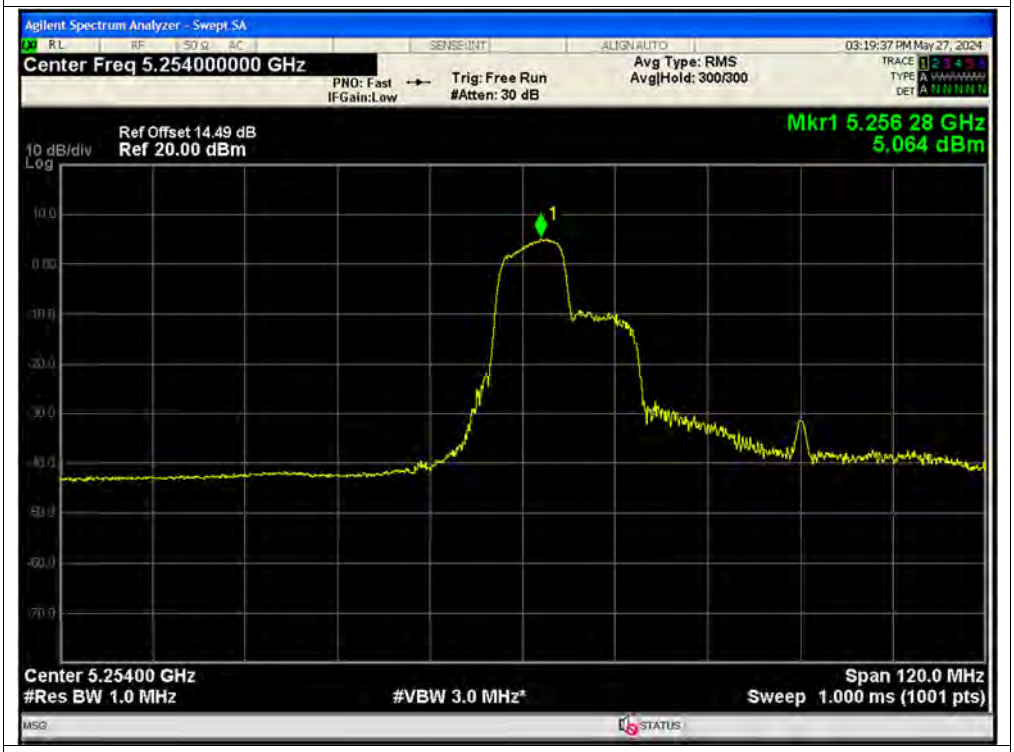


PSD NVNT ax80 106@53 5775MHz Ant1

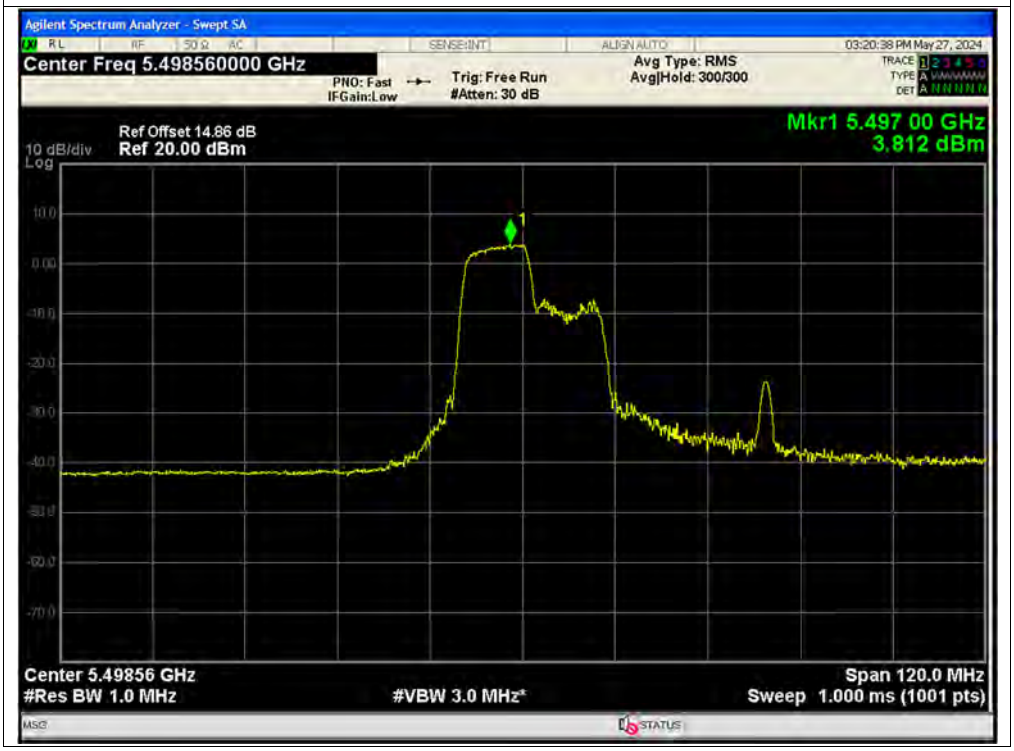


PSD NVNT ax80 106@53 5210MHz Ant2

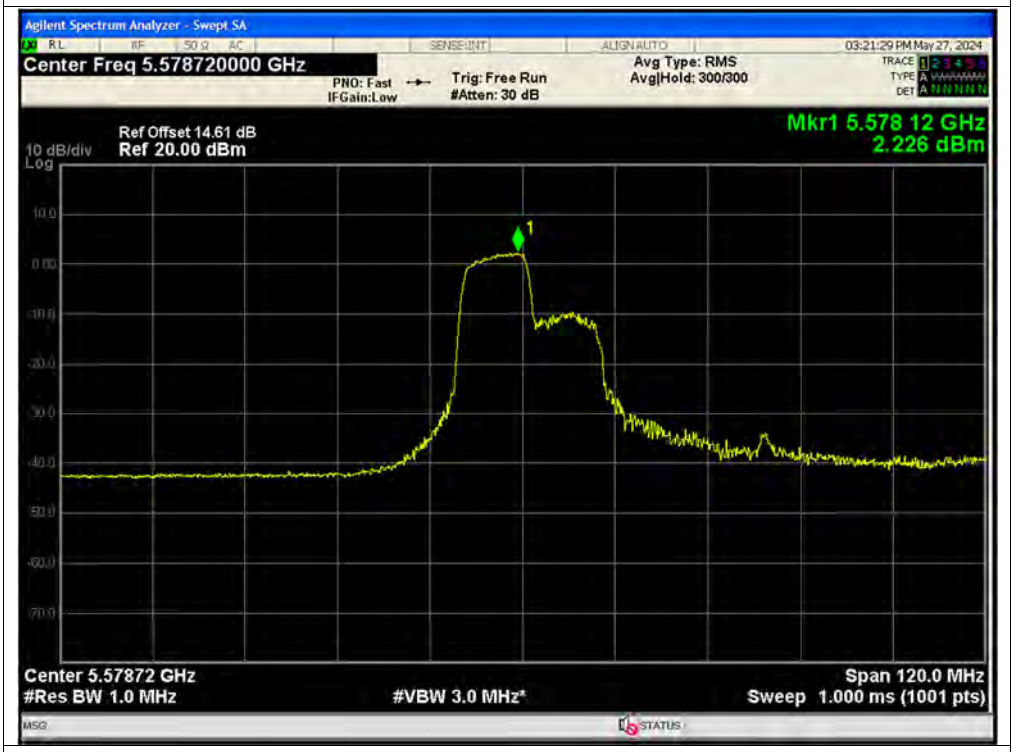
PSD NVNT ax80 106@53 5290MHz Ant2



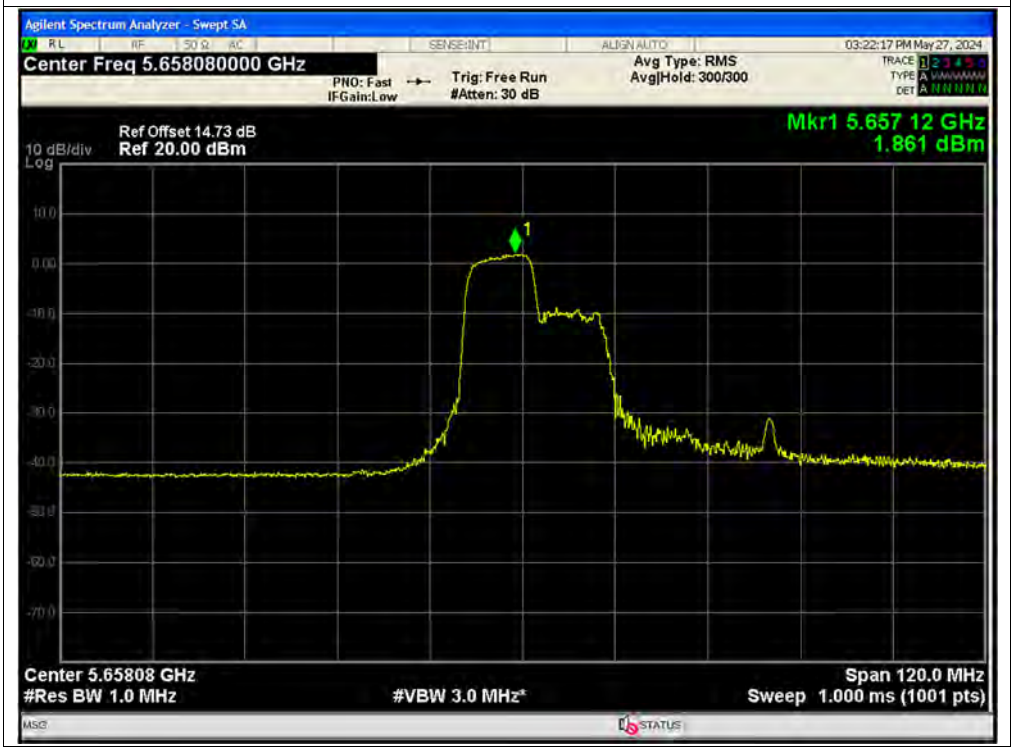
PSD NVNT ax80 106@53 5530MHz Ant2



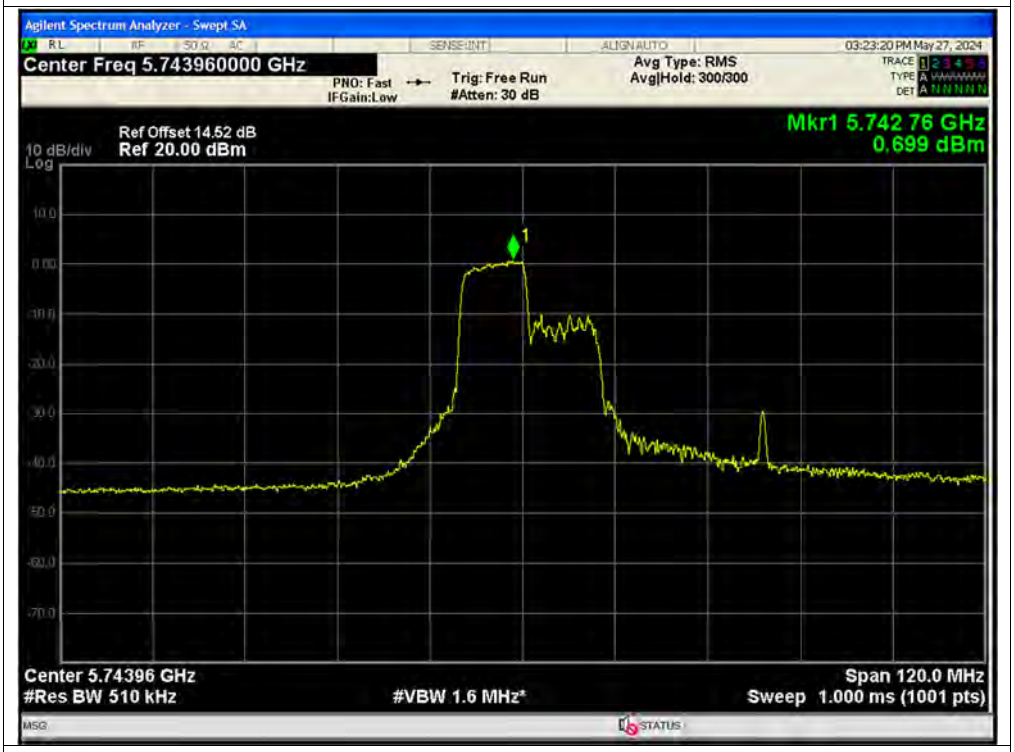
PSD NVNT ax80 106@53 5610MHz Ant2



PSD NVNT ax80 106@53 5690MHz Ant2



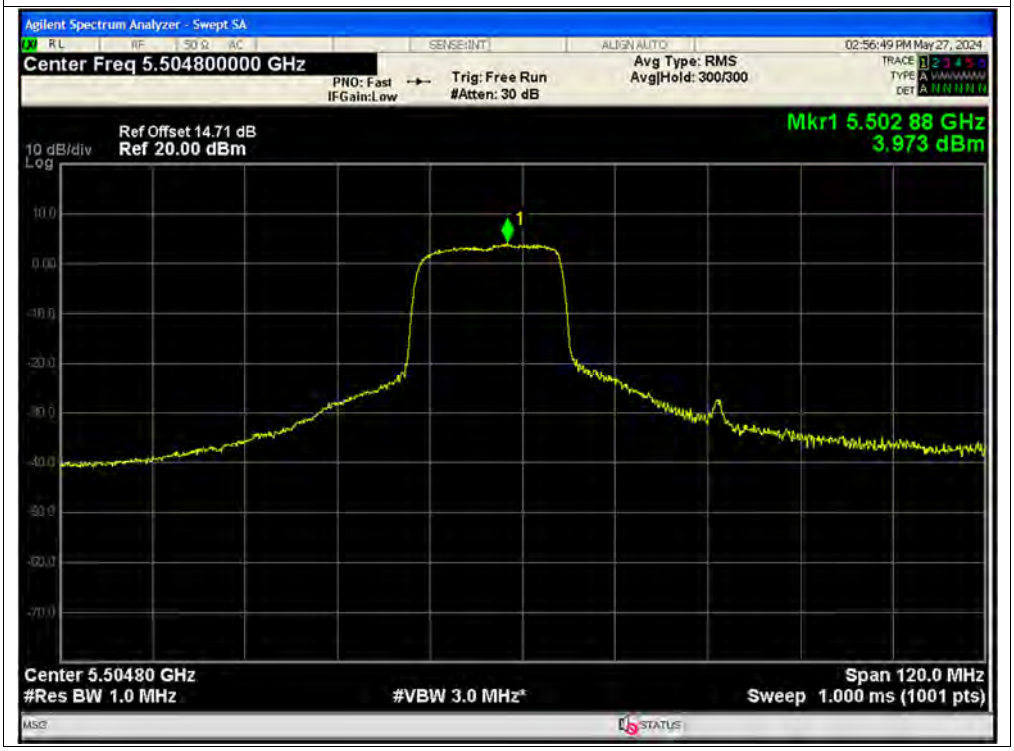
PSD NVNT ax80 106@53 5775MHz Ant2



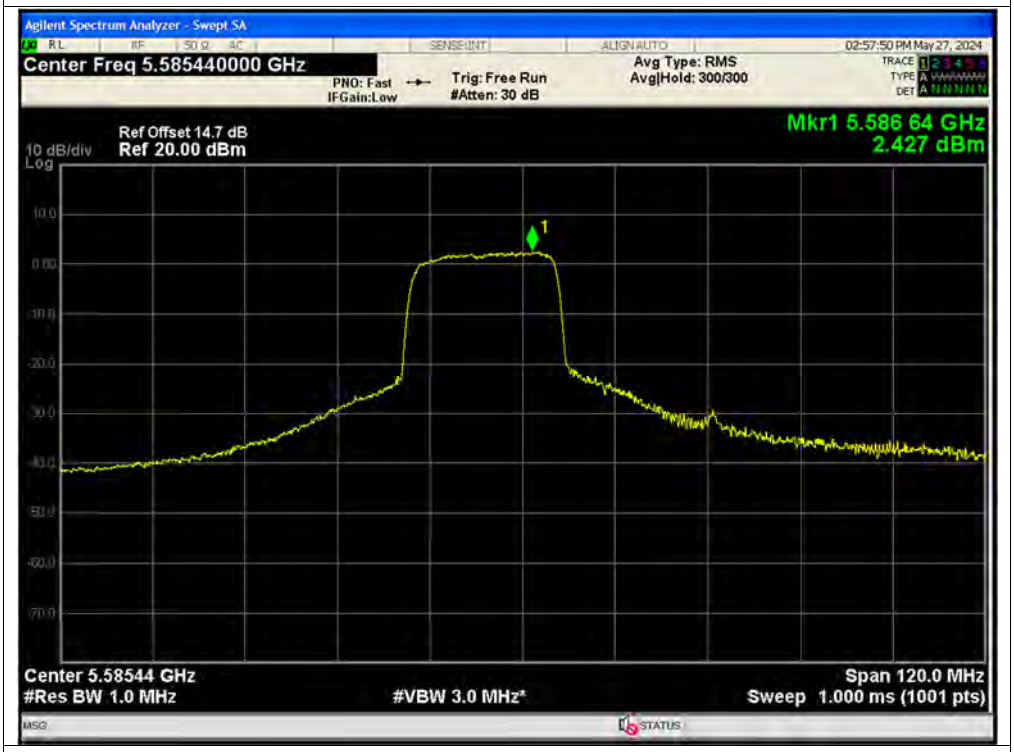
PSD NVNT ax80 242@61 5210MHz Ant1

PSD NVNT ax80 242@61 5290MHz Ant1

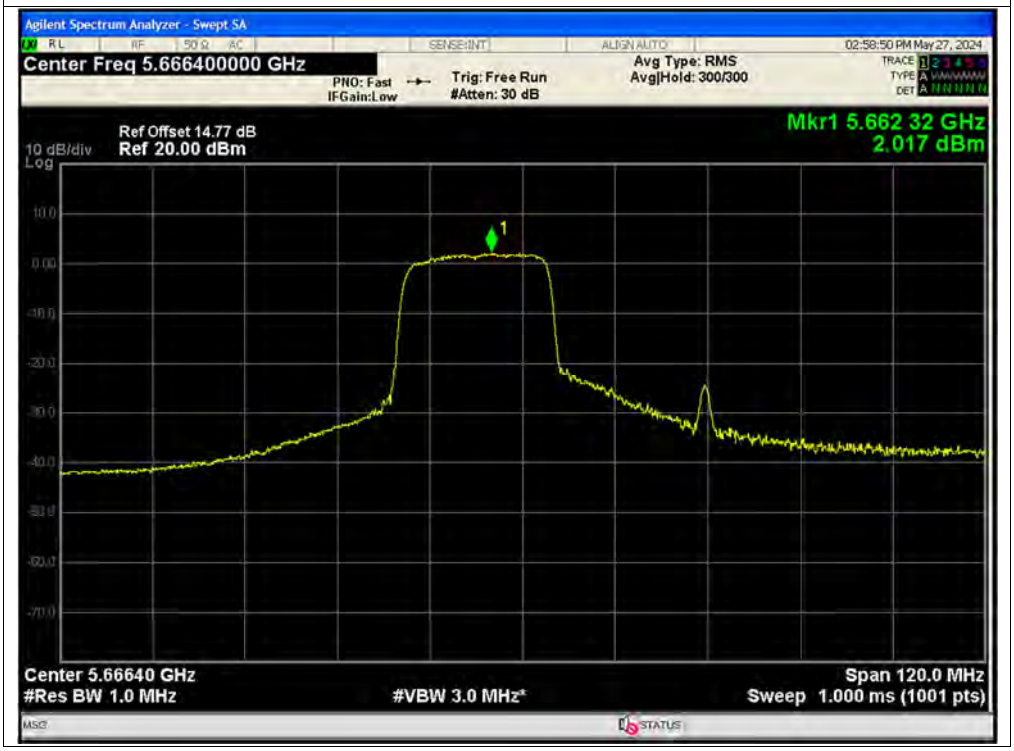
PSD NVNT ax80 242@61 5530MHz Ant1



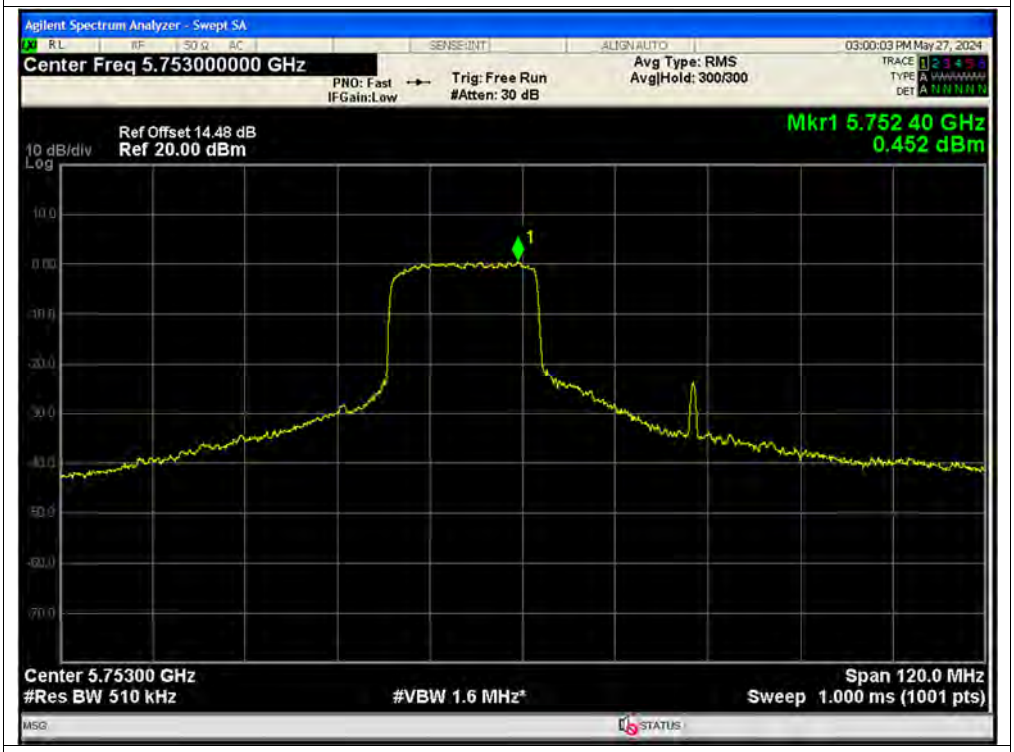
PSD NVNT ax80 242@61 5610MHz Ant1



PSD NVNT ax80 242@61 5690MHz Ant1



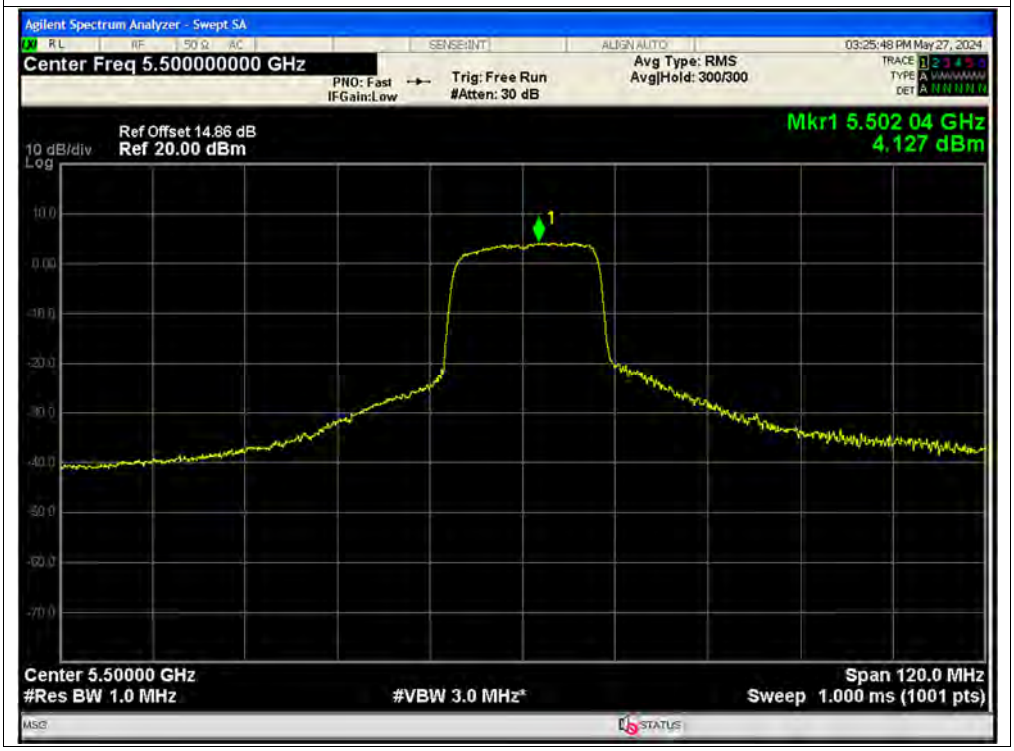
PSD NVNT ax80 242@61 5775MHz Ant1



PSD NVNT ax80 242@61 5210MHz Ant2

PSD NVNT ax80 242@61 5290MHz Ant2

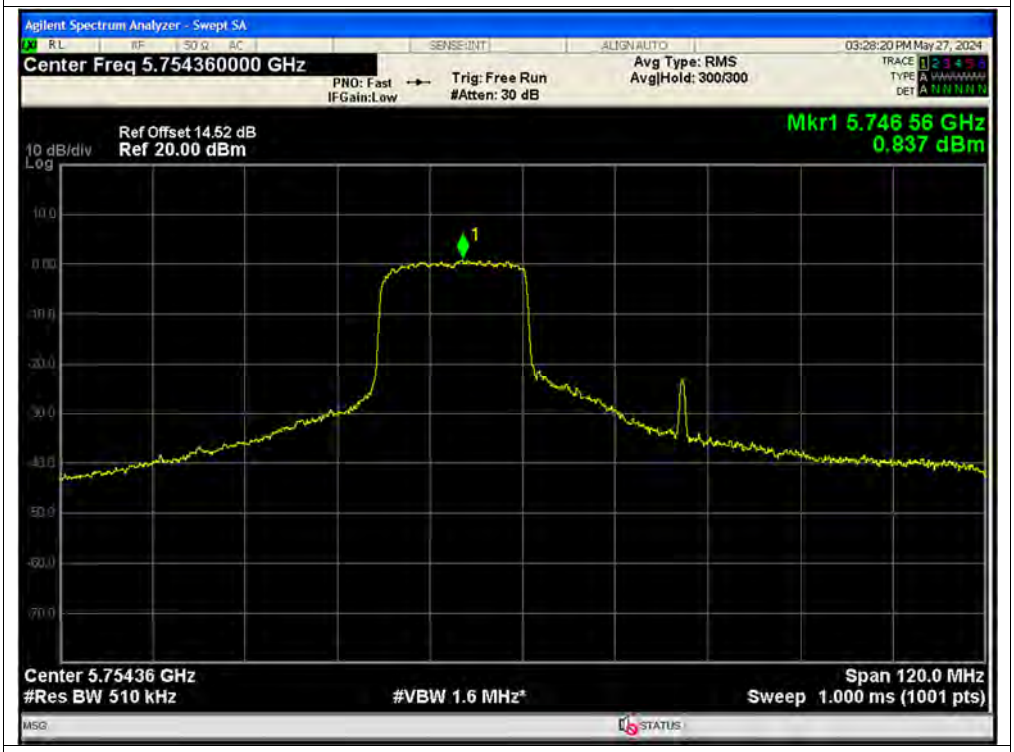
PSD NVNT ax80 242@61 5530MHz Ant2



PSD NVNT ax80 242@61 5610MHz Ant2

PSD NVNT ax80 242@61 5690MHz Ant2

PSD NVNT ax80 242@61 5775MHz Ant2



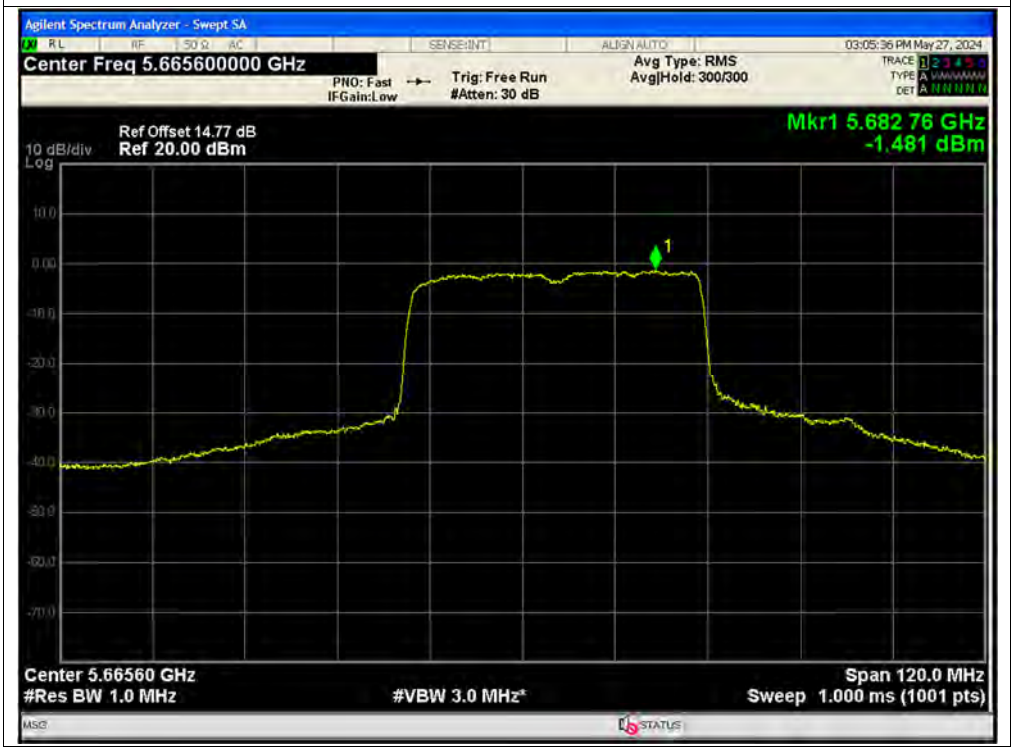
PSD NVNT ax80 484@65 5210MHz Ant1

PSD NVNT ax80 484@65 5290MHz Ant1

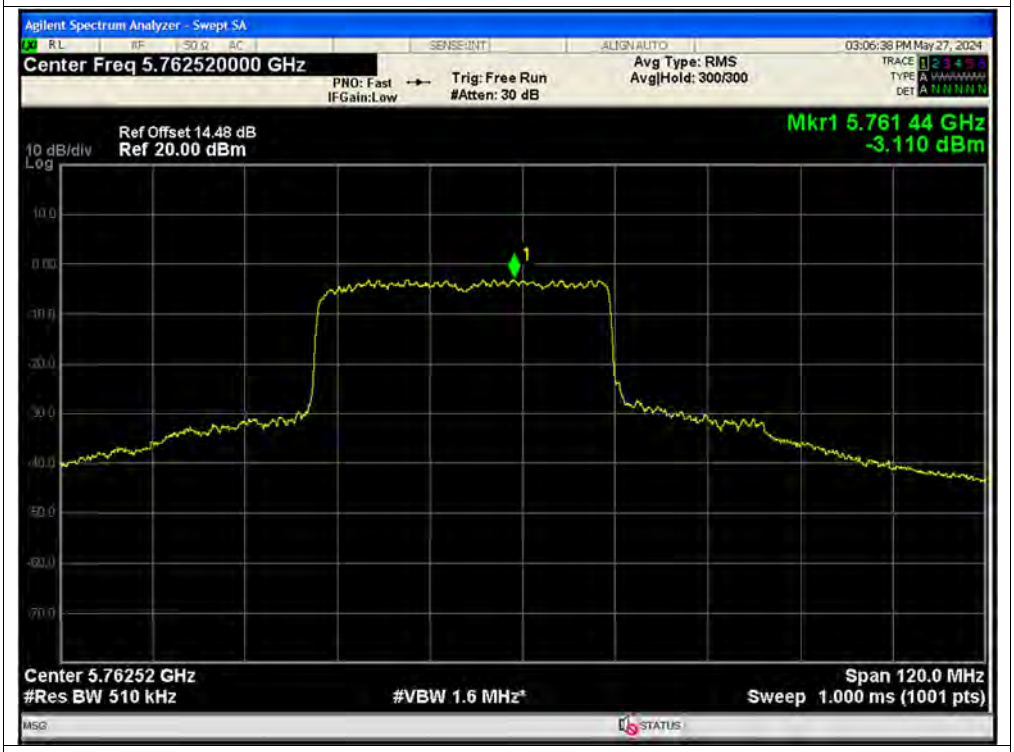
PSD NVNT ax80 484@65 5530MHz Ant1

PSD NVNT ax80 484@65 5610MHz Ant1

PSD NVNT ax80 484@65 5690MHz Ant1

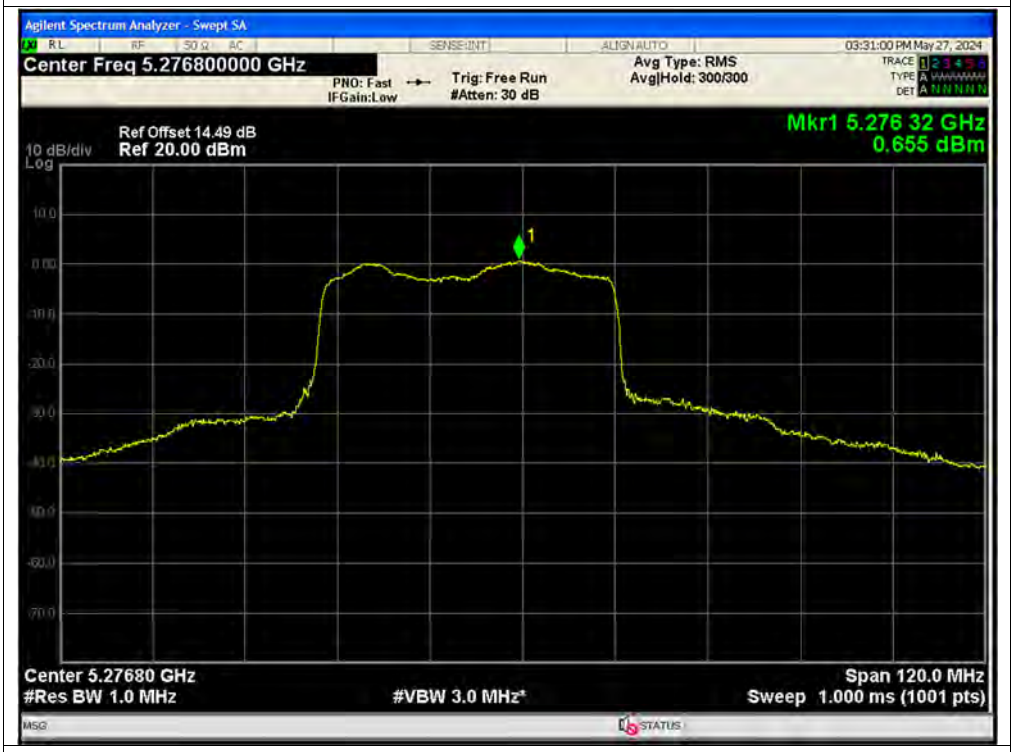


PSD NVNT ax80 484@65 5775MHz Ant1



PSD NVNT ax80 484@65 5210MHz Ant2

PSD NVNT ax80 484@65 5290MHz Ant2



PSD NVNT ax80 484@65 5530MHz Ant2

PSD NVNT ax80 484@65 5610MHz Ant2

PSD NVNT ax80 484@65 5690MHz Ant2

PSD NVNT ax80 484@65 5775MHz Ant2

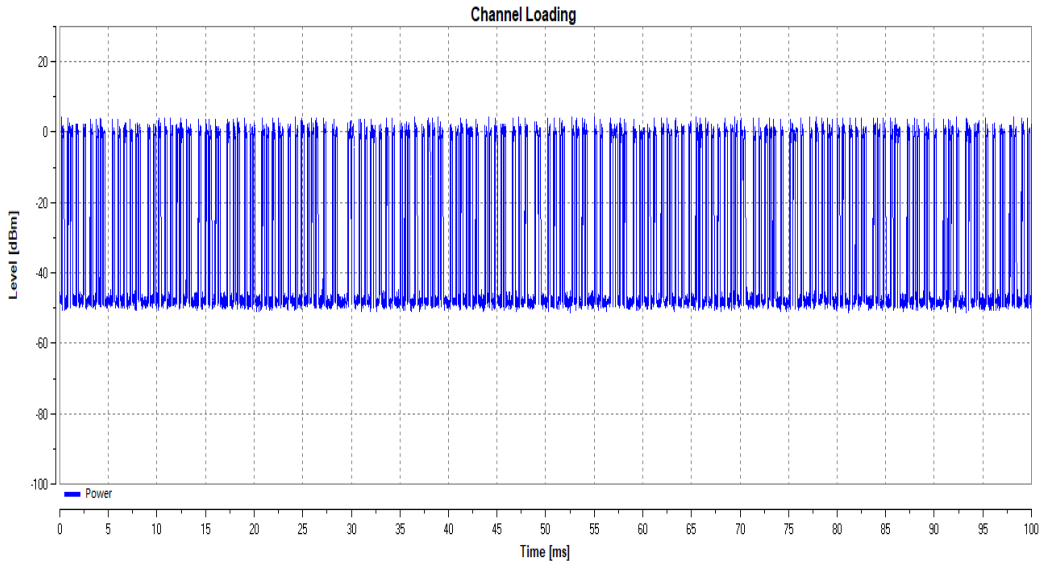
A.5. Frequency Stability

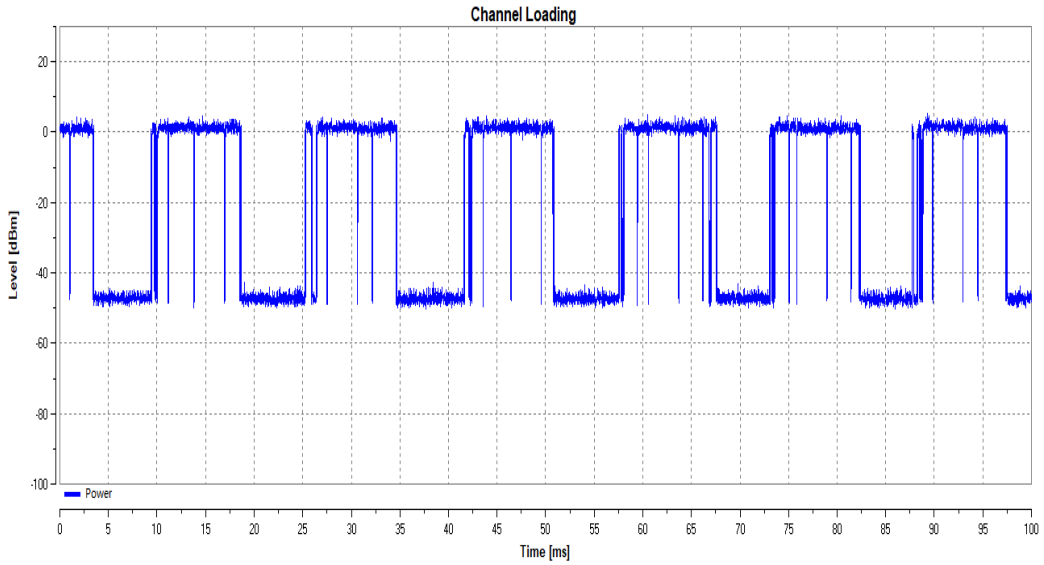
Condition	Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
20C 3.5V	Carrier	5180	Ant1	5180.012	12000	2.32	25	Pass
20C 5.5V	Carrier	5180	Ant1	5180.011	11000	2.12	25	Pass
0C 5V	Carrier	5180	Ant1	5180.011	11000	2.12	25	Pass
10C 5V	Carrier	5180	Ant1	5180.011	11000	2.12	25	Pass
20C 5V	Carrier	5180	Ant1	5180.011	11000	2.12	25	Pass
30C 5V	Carrier	5180	Ant1	5180.01	10000	1.93	25	Pass
40C 5V	Carrier	5180	Ant1	5180.01	10000	1.93	25	Pass
20C 3.5V	Carrier	5260	Ant1	5260.017	17000	3.23	25	Pass
20C 5.5V	Carrier	5260	Ant1	5260.016	16000	3.04	25	Pass
0C 5V	Carrier	5260	Ant1	5260.015	15000	2.85	25	Pass
10C 5V	Carrier	5260	Ant1	5260.015	15000	2.85	25	Pass
20C 5V	Carrier	5260	Ant1	5260.014	14000	2.66	25	Pass
30C 5V	Carrier	5260	Ant1	5260.014	14000	2.66	25	Pass
40C 5V	Carrier	5260	Ant1	5260.013	13000	2.47	25	Pass
20C 3.5V	Carrier	5500	Ant1	5500.017	17000	3.09	25	Pass
20C 5.5V	Carrier	5500	Ant1	5500.016	16000	2.91	25	Pass
0C 5V	Carrier	5500	Ant1	5500.015	15000	2.73	25	Pass
10C 5V	Carrier	5500	Ant1	5500.014	14000	2.55	25	Pass
20C 5V	Carrier	5500	Ant1	5500.014	14000	2.55	25	Pass
30C 5V	Carrier	5500	Ant1	5500.013	13000	2.36	25	Pass
40C 5V	Carrier	5500	Ant1	5500.013	13000	2.36	25	Pass
20C 3.5V	Carrier	5745	Ant1	5745.016	16000	2.79	25	Pass
20C 5.5V	Carrier	5745	Ant1	5745.015	15000	2.61	25	Pass
0C 5V	Carrier	5745	Ant1	5745.014	14000	2.44	25	Pass
10C 5V	Carrier	5745	Ant1	5745.014	14000	2.44	25	Pass
20C 5V	Carrier	5745	Ant1	5745.013	13000	2.26	25	Pass
30C 5V	Carrier	5745	Ant1	5745.013	13000	2.26	25	Pass
40C 5V	Carrier	5745	Ant1	5745.012	12000	2.09	25	Pass

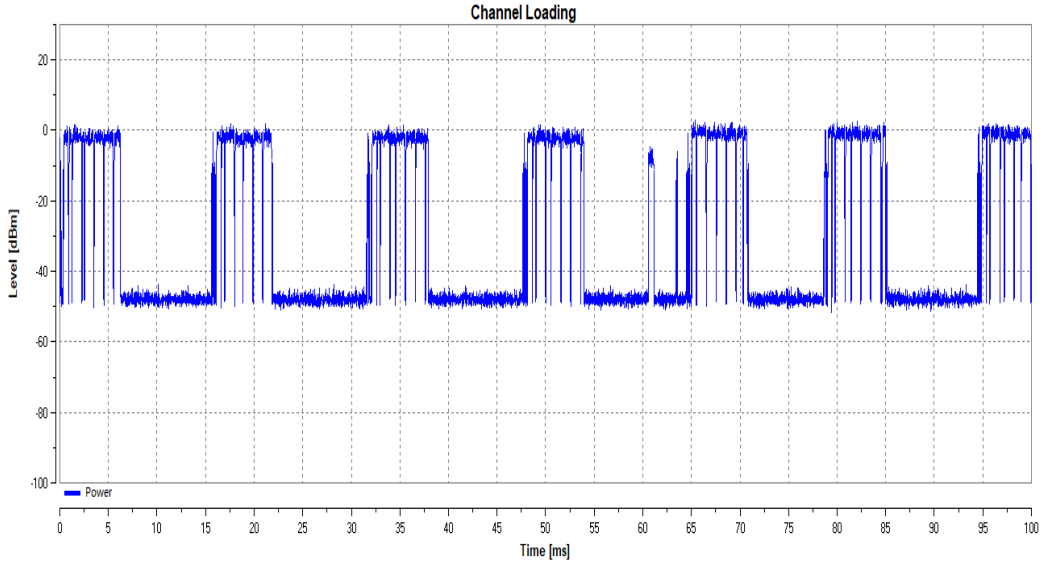
A.6. Dynamic Frequency Selection

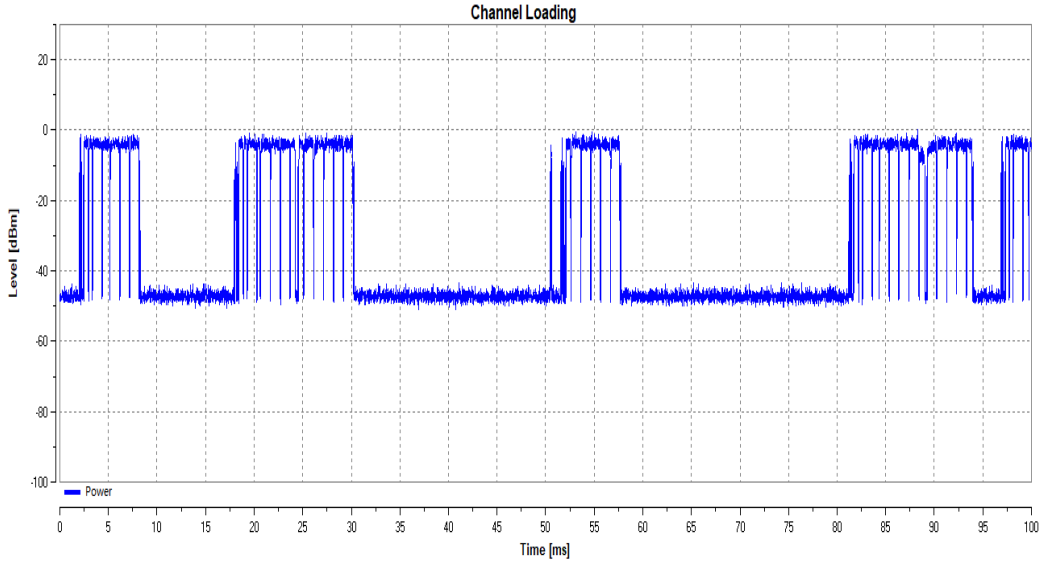
Payload

Test Mode	Channel	Result	Limit [%]	Verdict
11AC20SISO	5320	37.76	30	PASS
	5500	56.38	30	PASS
11AC80SISO	5290	40.08	30	PASS
	5530	37.1	30	PASS

11AC20SISO_5320


11AC20SISO_5500


11AC80SISO_5290


11AC80SISO_5530


Detection Thresholds

Test Mode	Channel	Radar Type	Result	Limit[dbm]	Verdict
11AC20SISO	5320	Reference	-61.99	-55.64	PASS
	5500	Reference	-62.69	-54.22	PASS
11AC80SISO	5290	Reference	-62.59	-55.72	PASS
	5530	Reference	-62.92	-55.72	PASS

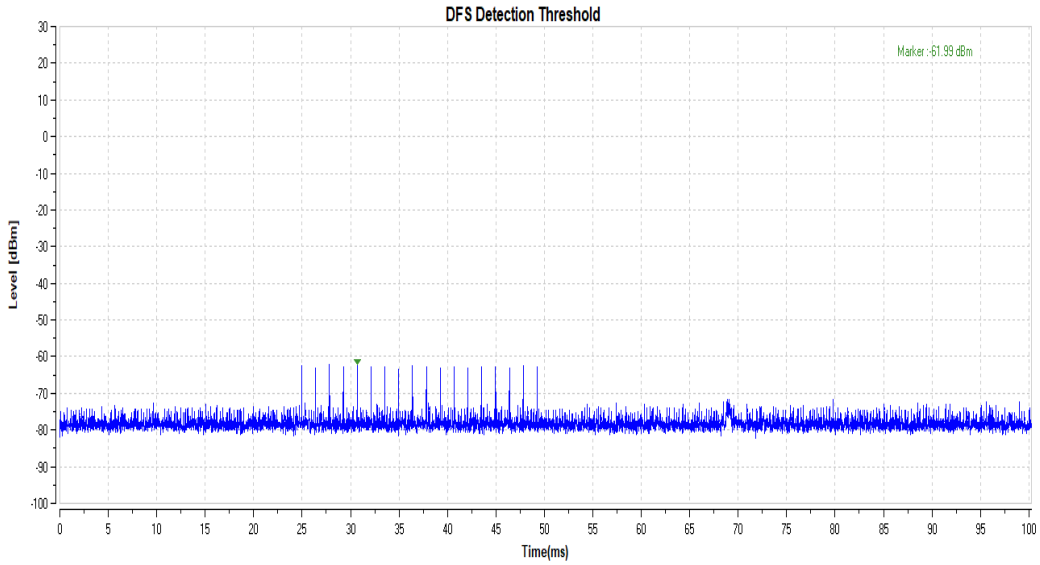
Spectrum analyzer settings:

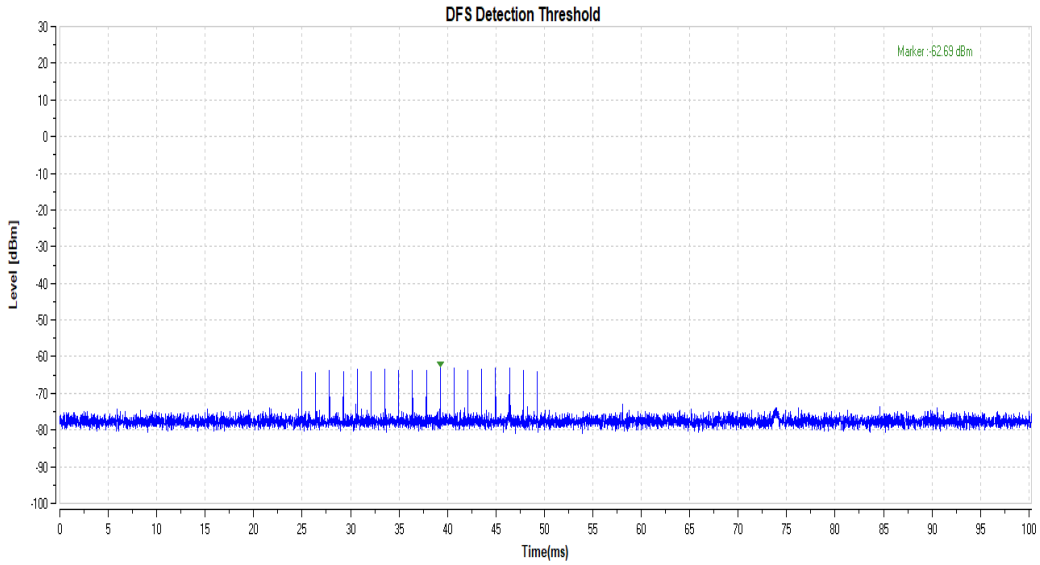
Span: Zero

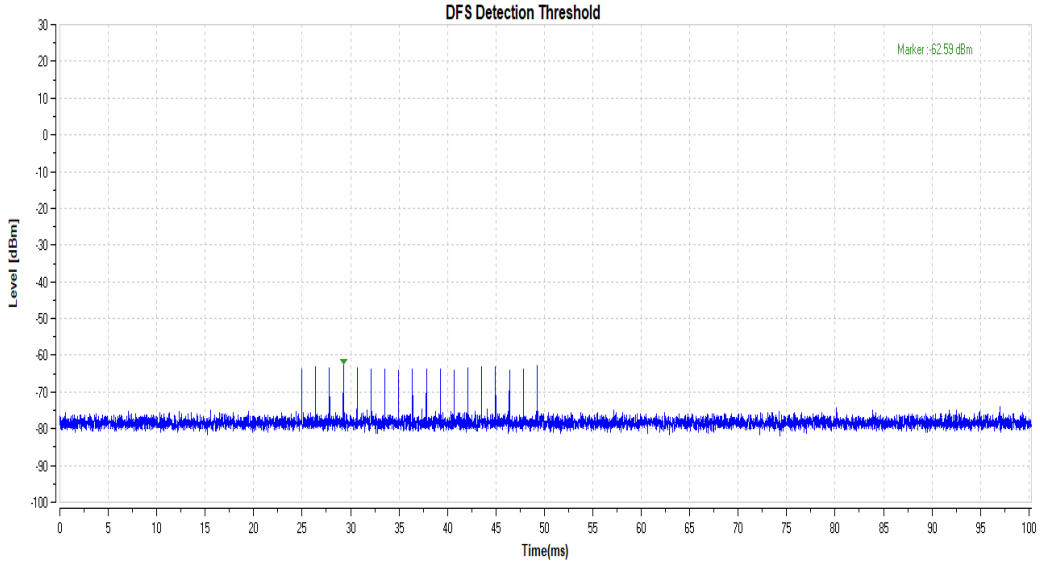
Detector Type: Peak

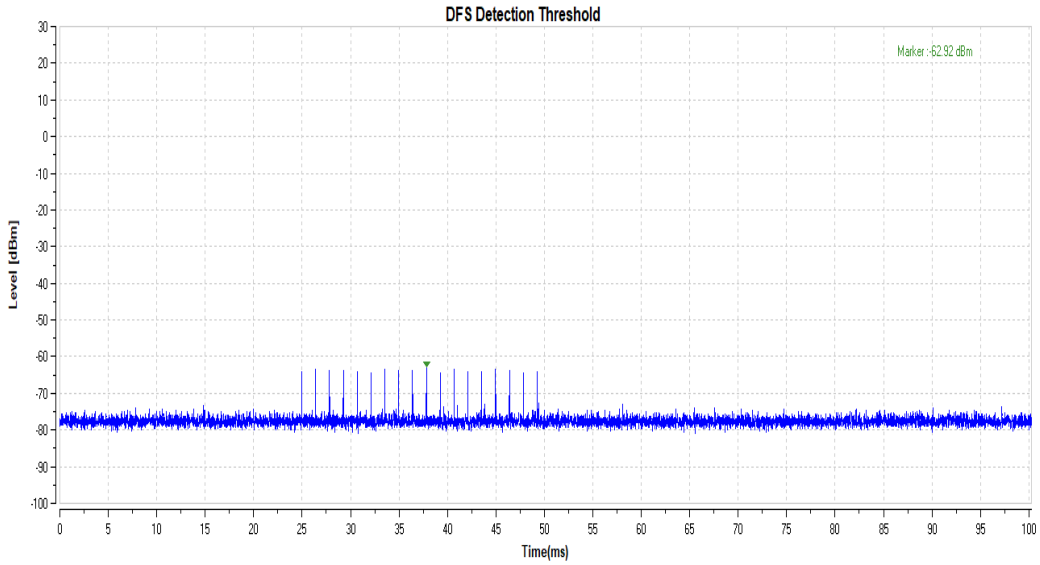
RBW: 3MHz

VBW: 3MHz

11AC20SISO_5320_Reference


11AC20SISO_5500_Reference


11AC80SISO_5290_Reference


11AC80SISO_5530_Reference


Channel Move Time and Channel Closing Transmission Time

Test Mode	Channel	CCT[ms]	Limit[ms]	CMT[ms]	Limit[ms]	Verdict
11AC20SISO	5320	22.08	260	809.6	10000	PASS
	5500	40.64	260	879.5	10000	PASS
11AC80SISO	5290	22.4	260	814.8	10000	PASS
	5530	31.36	260	858.4	10000	PASS

Spectrum analyzer settings:

Span: Zero

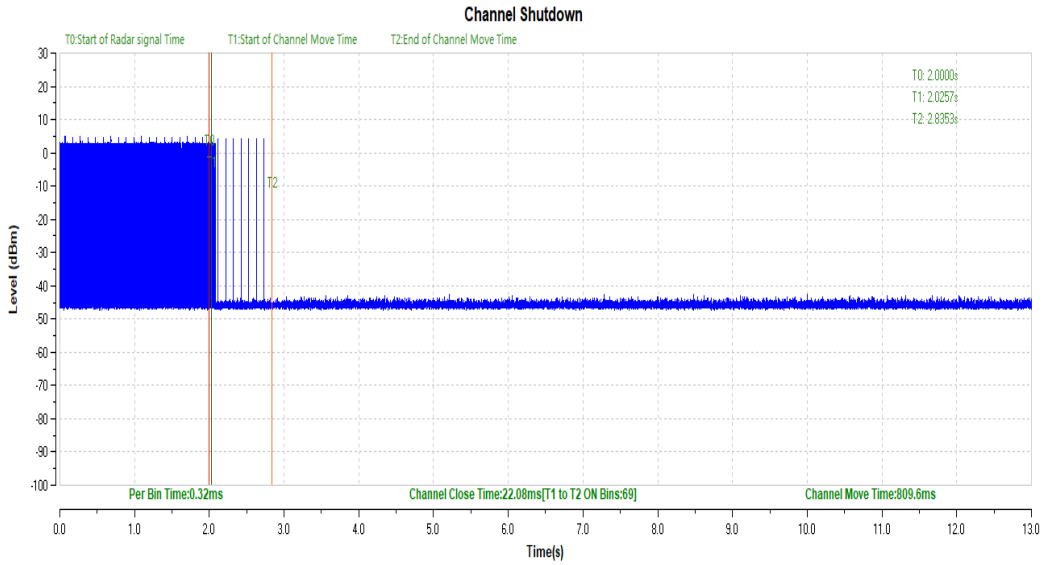
Detector type: Peak

RBW: 3MHz

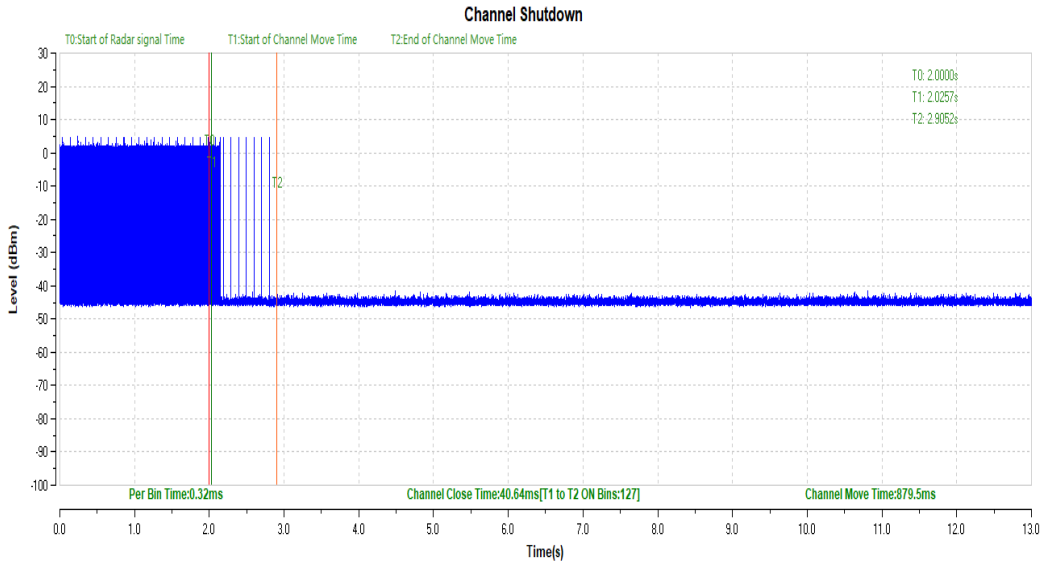
VBW: 3MHz

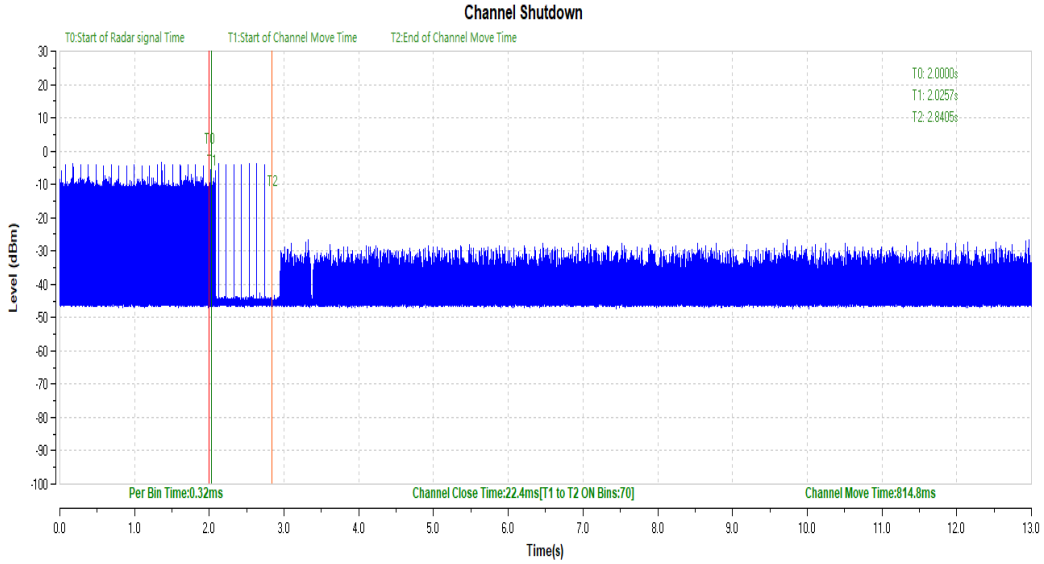
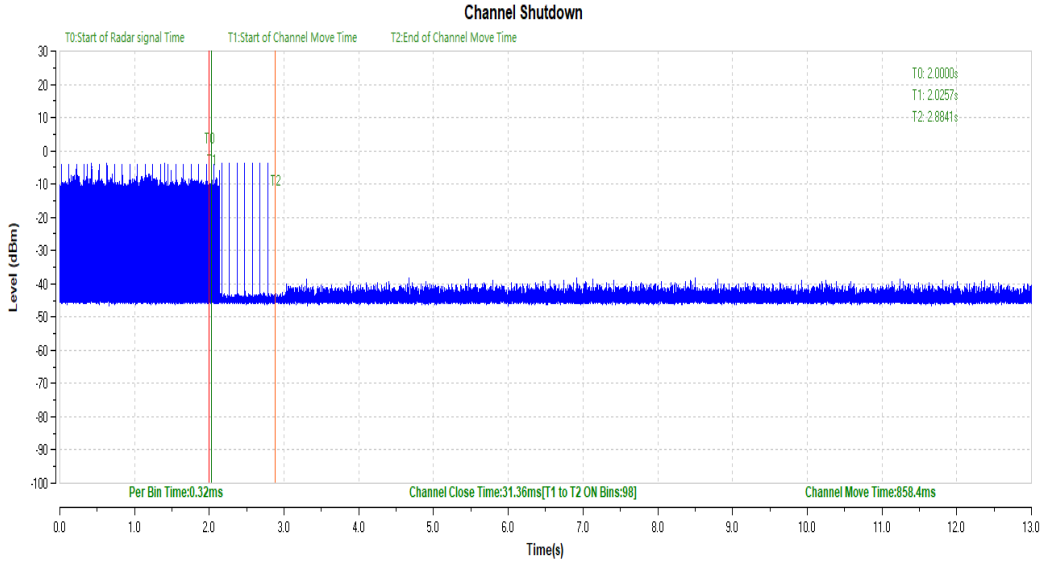
Sweep time: 20s

11AC20SISO_5320



11AC20SISO_5500



11AC80SISO_5290

11AC80SISO_5530


Note：The signal above the noise floor after the radar signal ends is the signal which leaked from other channels that have been moved following the Master device.

Non-Occupancy Period

Test Mode	Frequency (MHz)	Result	Verdict
11AC20SISO	5320	See test Graph	Pass
	5500	See test Graph	Pass

Spectrum analyzer settings:

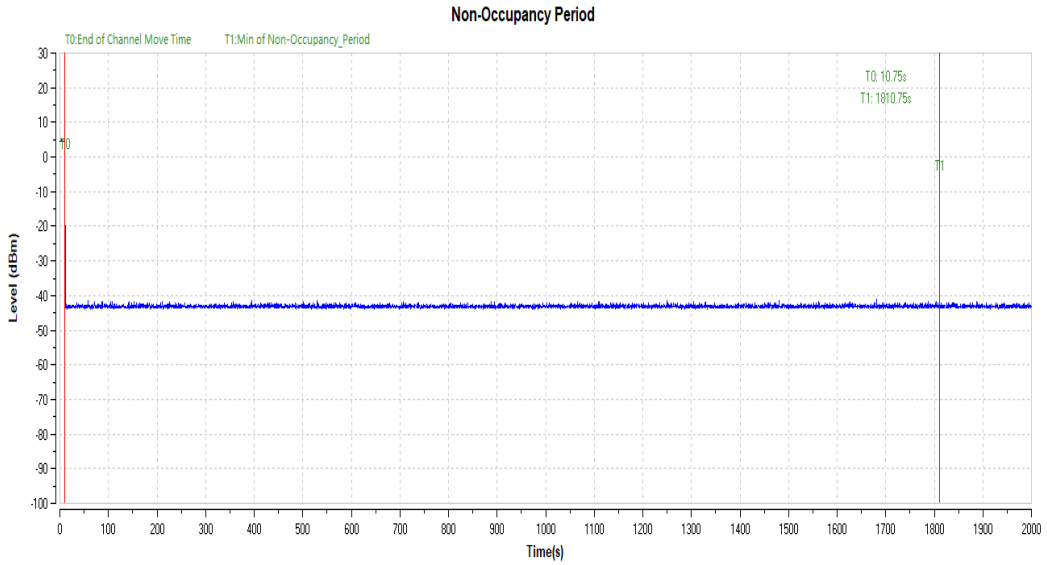
Span: Zero

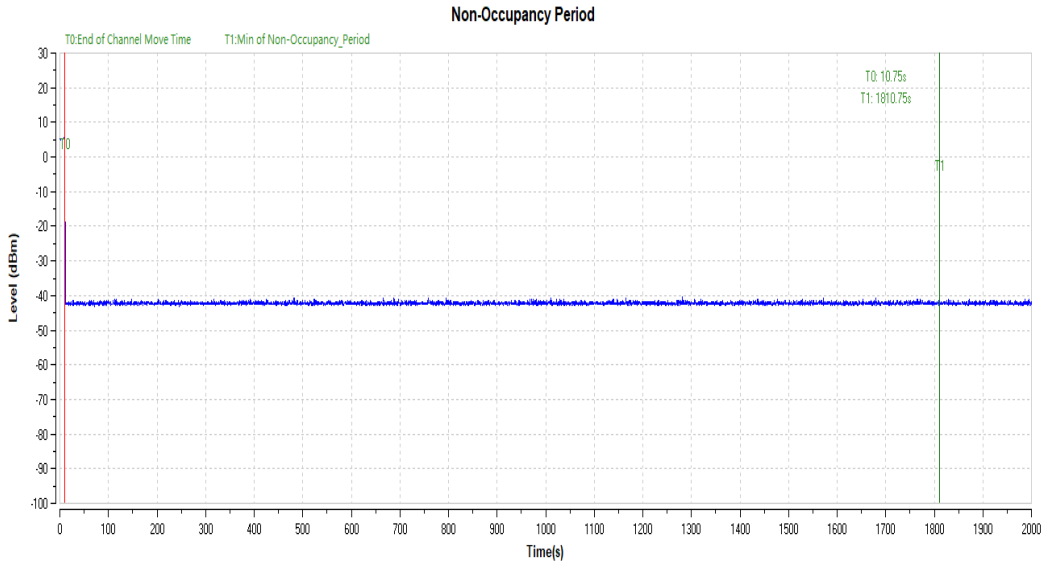
Detector type: Peak

RBW: 3MHz

VBW: 3MHz

Sweep time: 1850s

11AC20SISO_5320


11AC20SISO_5500


A.7. Conducted Emission

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Set RBW=9kHz, VBW=30kHz. Refer to recorded points and plots below.

Note: Both of the test voltage AC 120V/60Hz and AC 230V/50Hz were considered and tested respectively, only the results of the worst case AC 120V/60Hz were recorded in this report.

A. Test Setup:

Test Mode: EUT + RJ45 Cable + PC + WIFI TX

Test voltage: AC 120V/60Hz

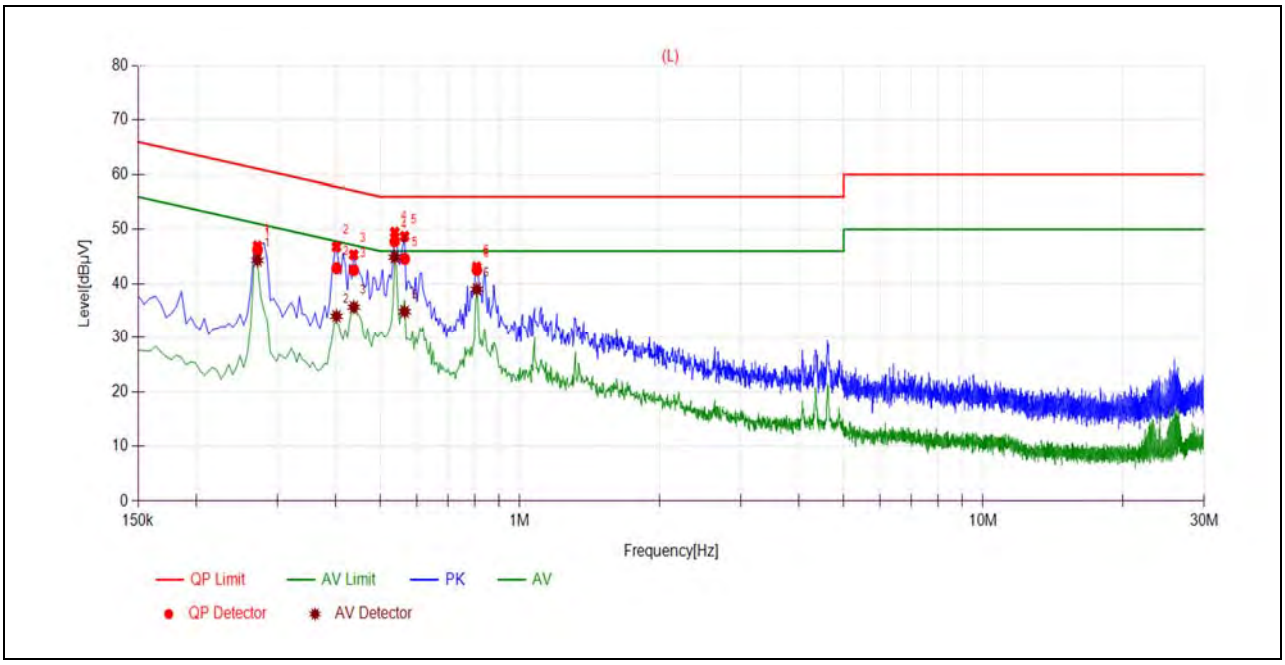
The measurement results are obtained as below:

$E\ [dB\mu V] = U_R + L_{Cable\ loss}\ [dB] + A_{Factor}$

U_R: Receiver Reading

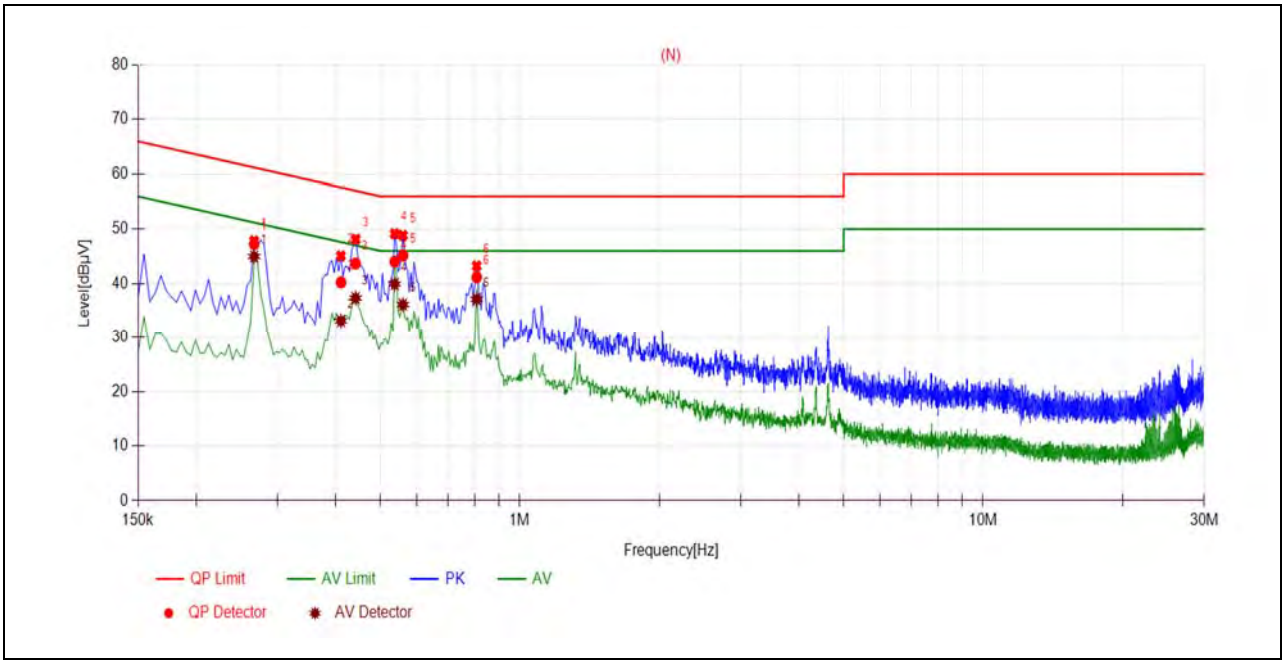
A_{Factor}: Voltage division factor of LISN

B. Test Plot:



(L Phase)

No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.2716	46.25	44.32	61.07	51.07	Line	PASS
2	0.4022	42.87	34.01	57.81	47.81		PASS
3	0.4383	42.51	35.70	57.09	47.09		PASS
4	0.5368	47.80	44.90	56.00	46.00		PASS
5	0.5645	44.57	34.85	56.00	46.00		PASS
6	0.8078	42.53	38.97	56.00	46.00		PASS



(N Phase)

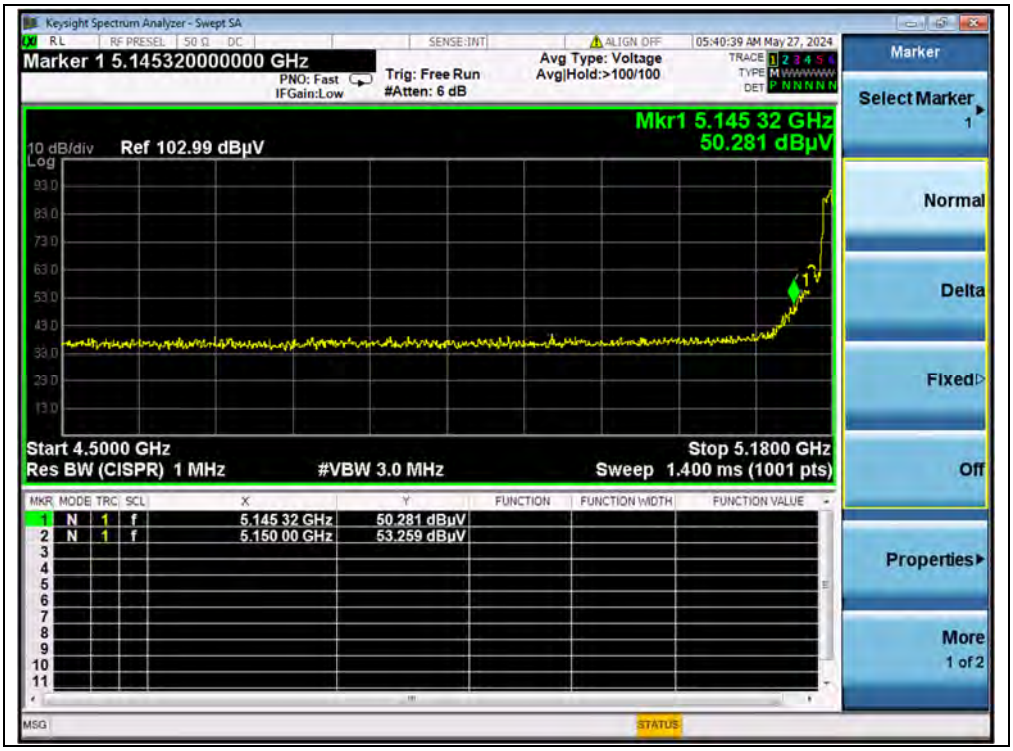
No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.2671	47.25	44.99	61.21	51.21	Neutral	PASS
2	0.4112	40.23	33.14	57.62	47.62		PASS
3	0.4421	43.70	37.36	57.02	47.02		PASS
4	0.5370	44.04	39.92	56.00	46.00		PASS
5	0.5596	45.17	36.15	56.00	46.00		PASS
6	0.8069	41.18	37.13	56.00	46.00		PASS

A.8. Restricted Frequency Bands

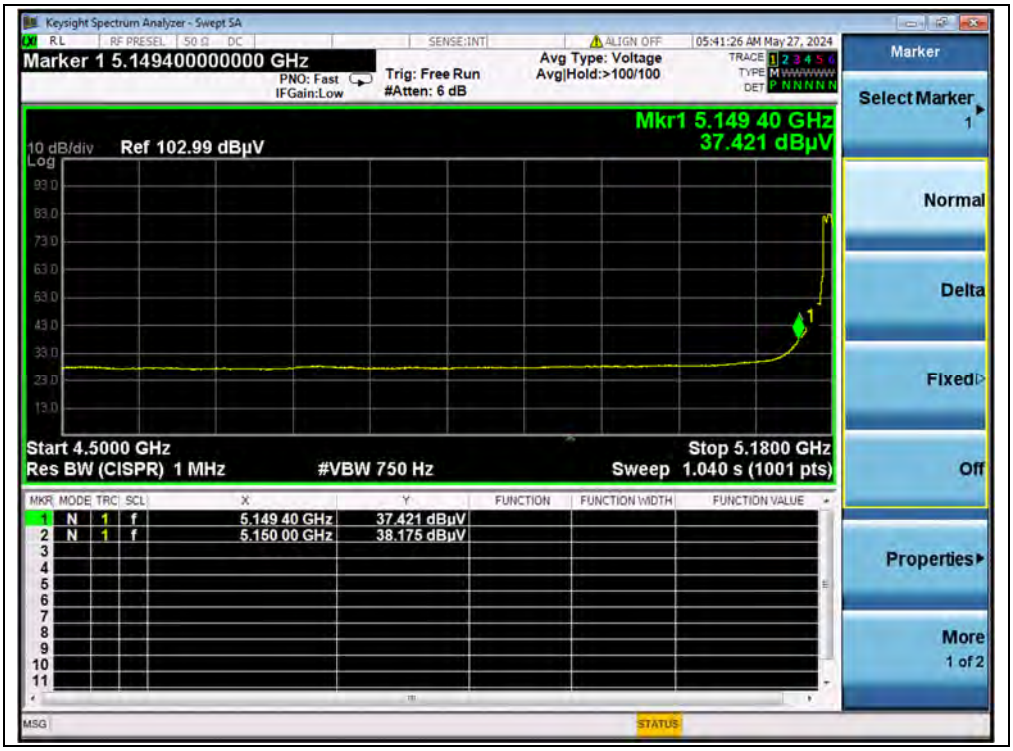
The lowest and highest channels are tested to verify the Restricted Frequency Bands.
The measurement results are obtained as below:
E [dBμV/m] =U_R + A_T + A_{Factor} [dB]; A_T =$L_{Cable\ loss}$ [dB]-G_{preamp} [dB]
A_T: Total correction Factor except Antenna
U_R: Receiver Reading
G_{preamp}: Preamplifier Gain
A_{Factor}: Antenna Factor at 3m
Note 1: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (horizontal) was recorded in this test report.
Note 2: Restricted Frequency Bands were performed in X, Y, Z axis direction, and only the worst axis (X axis) test condition was recorded in this test report.
Note 3: All test modes and bandwidth were considered and evaluated respectively by performing full test, only the worst data were recorded for each bandwidth.

802.11a Mode

Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBμV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
36	5150.00	PK	53.26	-21.29	32.20	64.17	74	PASS
36	5150.00	AV	38.18	-21.29	32.20	49.09	54	PASS
64	5350.66	PK	50.72	-20.66	32.20	62.26	74	PASS
64	5350.66	AV	37.88	-20.66	32.20	49.42	54	PASS
100	5469.20	PK	52.51	-20.24	32.20	64.47	68.23	PASS
100	5460.00	AV	34.18	-20.24	32.20	46.14	54	PASS
144	5725.80	PK	51.30	-20.24	32.20	63.26	68.23	PASS
149	5725.00	PK	55.28	-21.11	32.20	66.37	122.23	PASS
165	5850.00	PK	50.44	-21.11	32.20	61.53	122.23	PASS

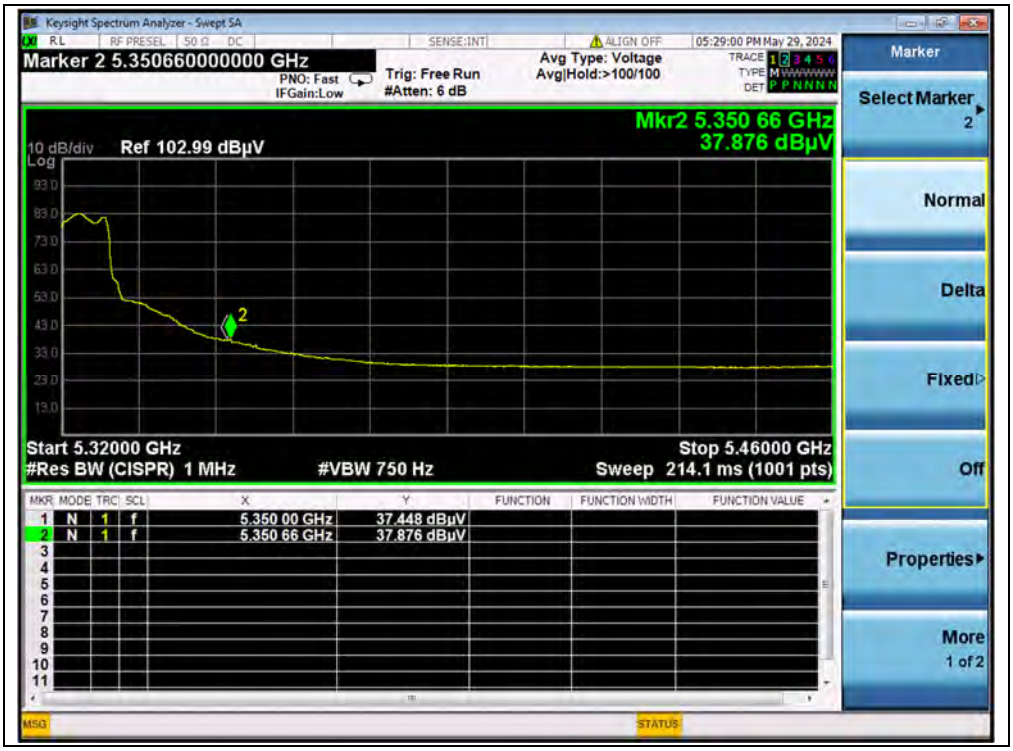


(PEAK, Channel 36, 802.11a)

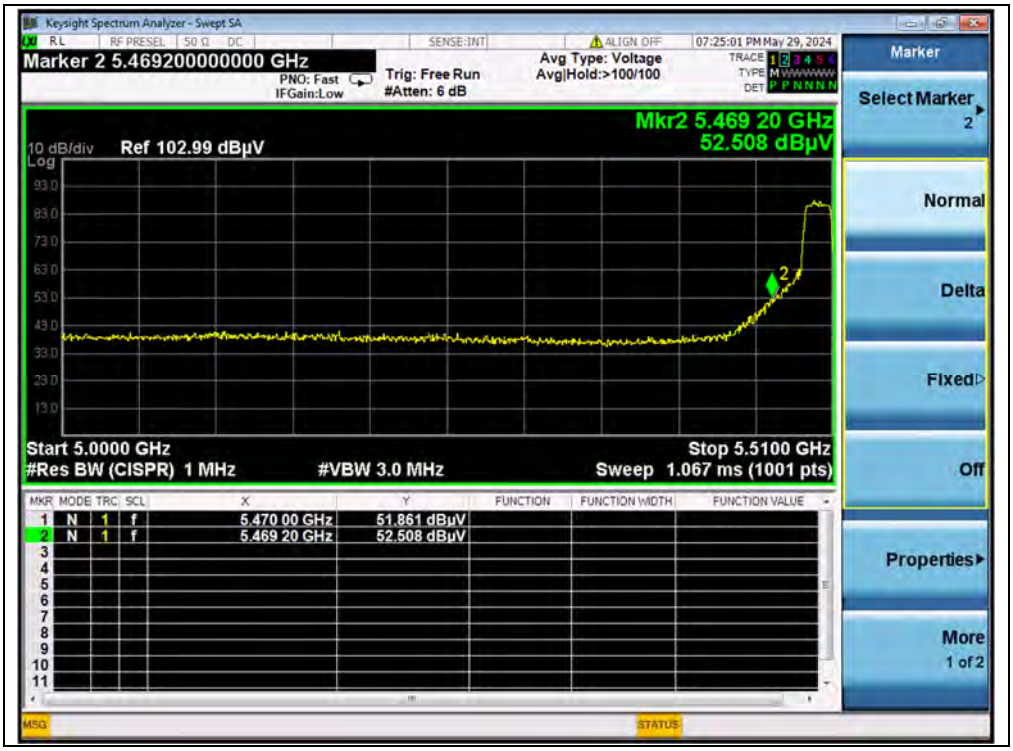


(AVERAGE, Channel 36, 802.11a)

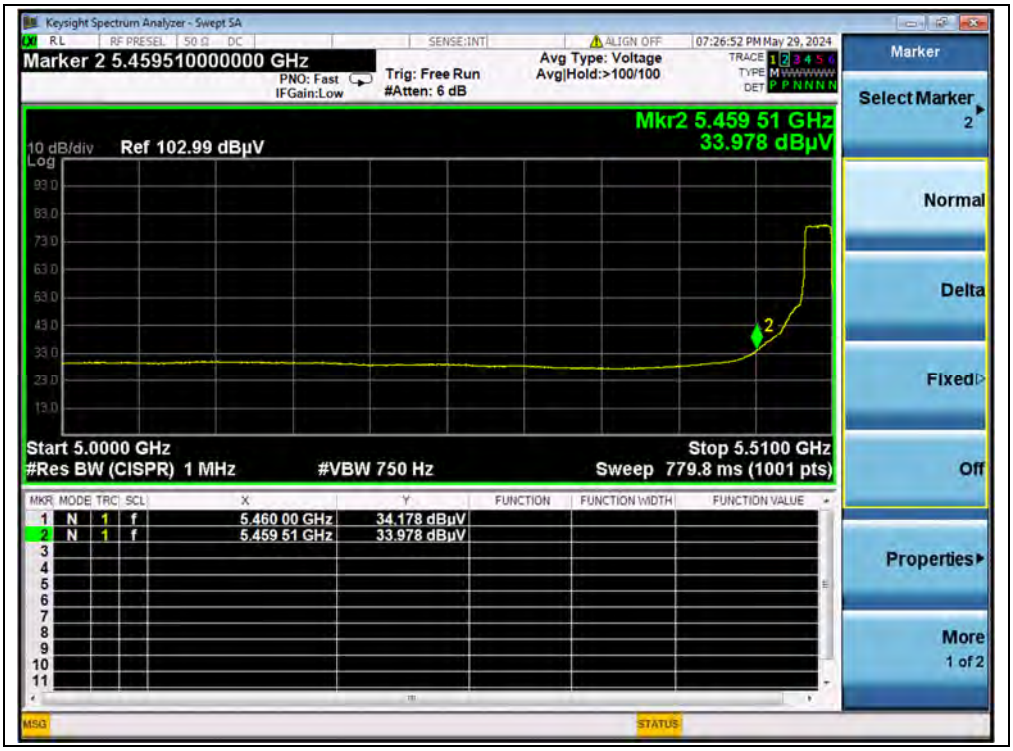
(PEAK, Channel 64, 802.11a)



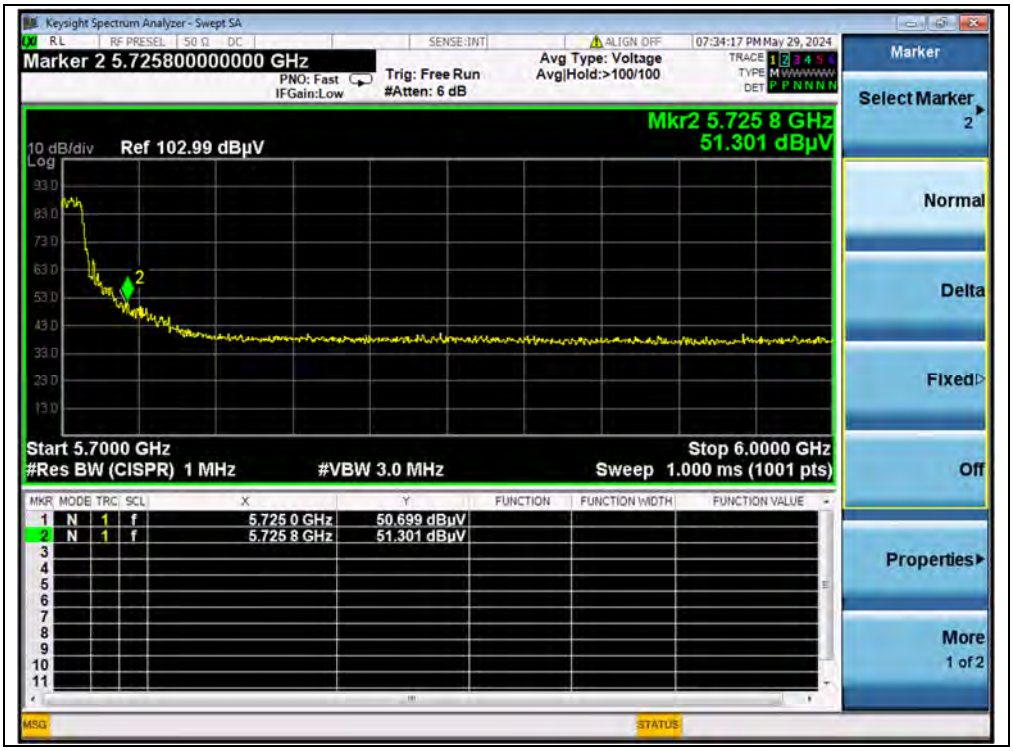
(AVERAGE, Channel 64, 802.11a)



(PEAK, Channel 100, 802.11a)



(AVERAGE, Channel 100, 802.11a)



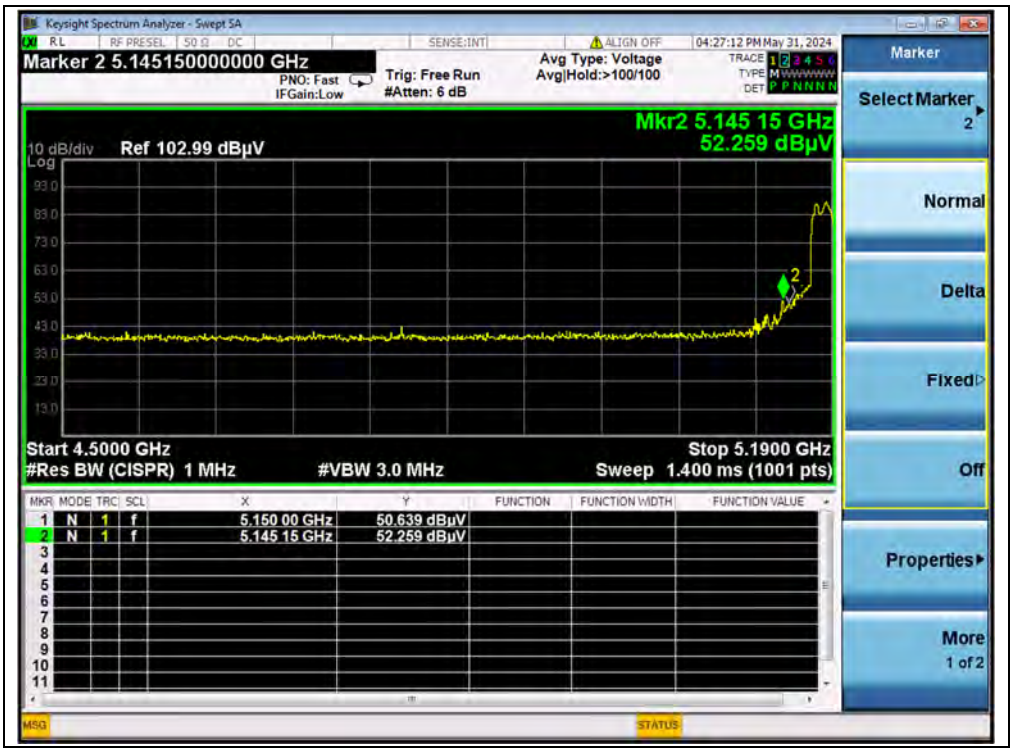
(PEAK, Channel 144, 802.11a)

(PEAK, Channel 149, 802.11a)

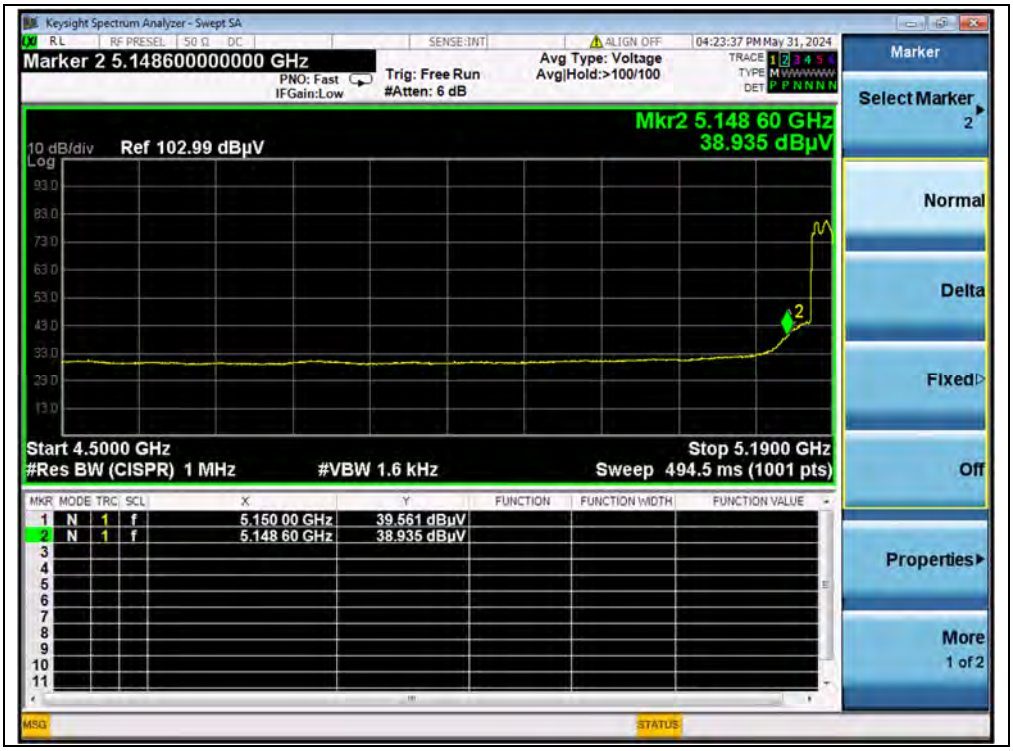
(PEAK, Channel 165, 802.11a)

802.11n (HT40) Mode

Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBμV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
38	5145.15	PK	52.26	-21.29	32.20	63.17	74	PASS
38	5150.00	AV	39.56	-21.29	32.20	50.47	54	PASS
62	5350.20	PK	49.29	-20.66	32.20	60.83	74	PASS
62	5350.35	AV	37.55	-20.66	32.20	49.09	54	PASS
102	5466.65	PK	50.09	-20.24	32.20	62.05	68.23	PASS
102	5458.98	AV	35.73	-20.24	32.20	47.69	54	PASS
142	5727.12	PK	43.32	-20.24	32.20	55.28	68.23	PASS
151	5725.00	PK	56.56	-21.11	32.20	67.65	122.23	PASS
159	5850.00	PK	47.23	-21.11	32.20	58.32	122.23	PASS

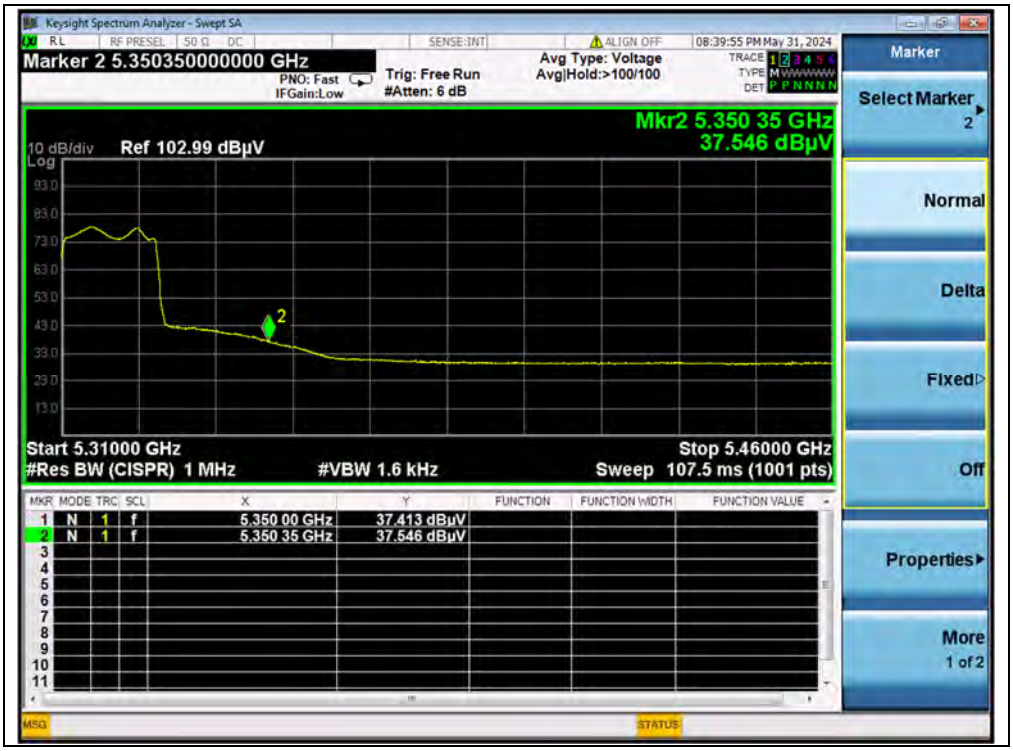


(PEAK, Channel 38, 802.11n (HT40))

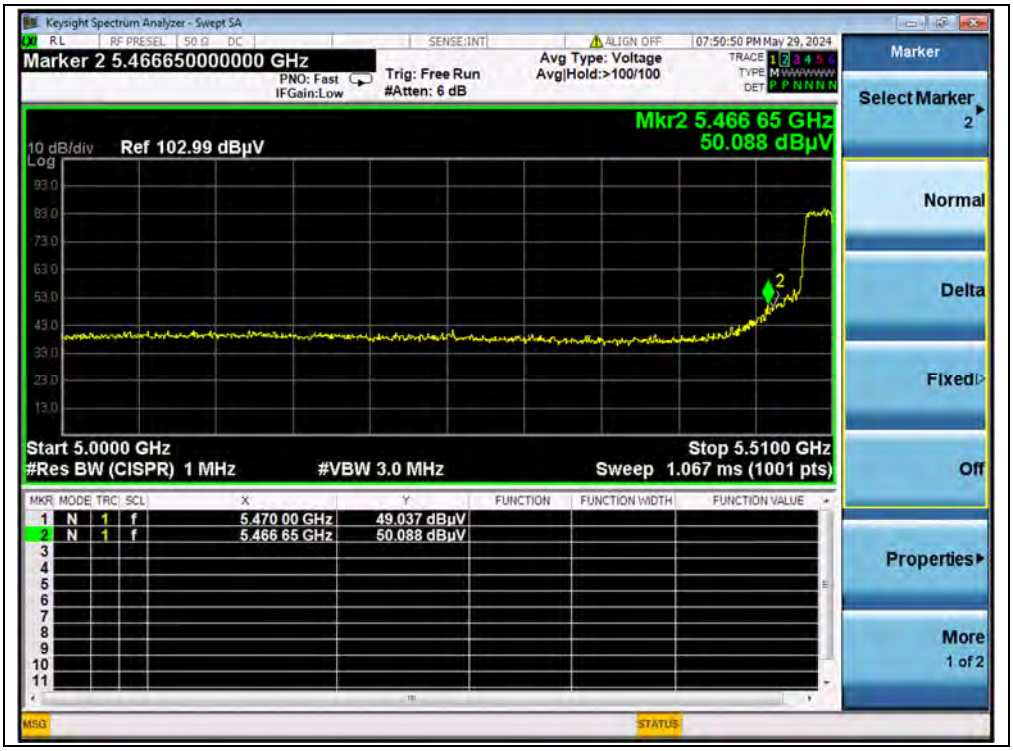


(AVERAGE, Channel 38, 802.11n (HT40))

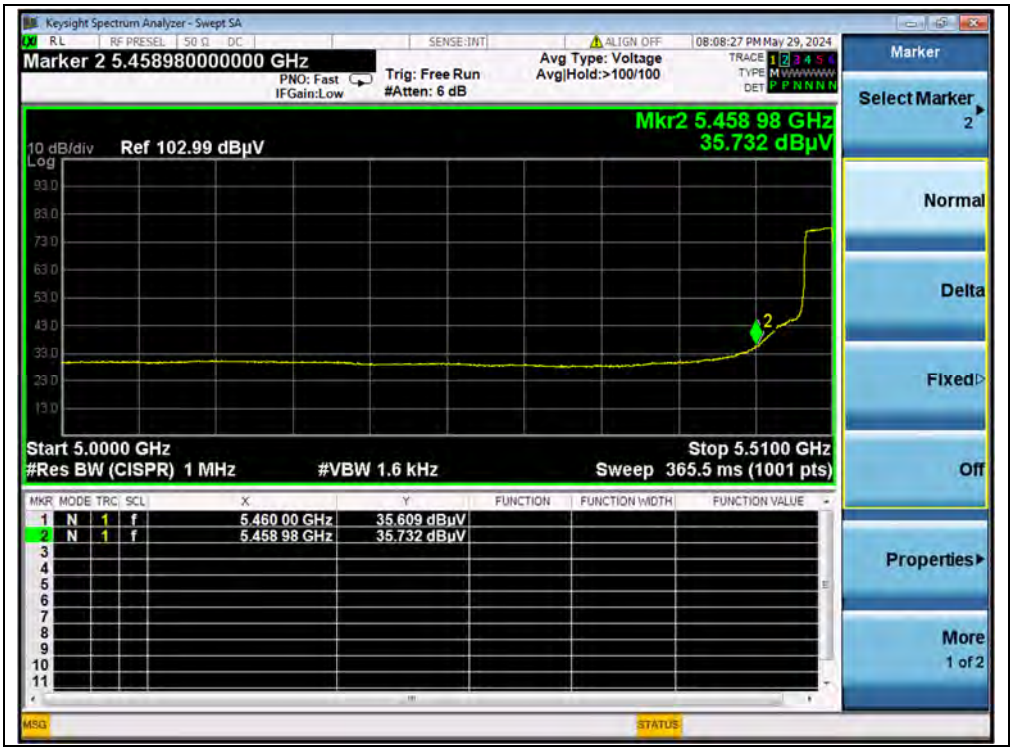
(PEAK, Channel 62, 802.11n (HT40))



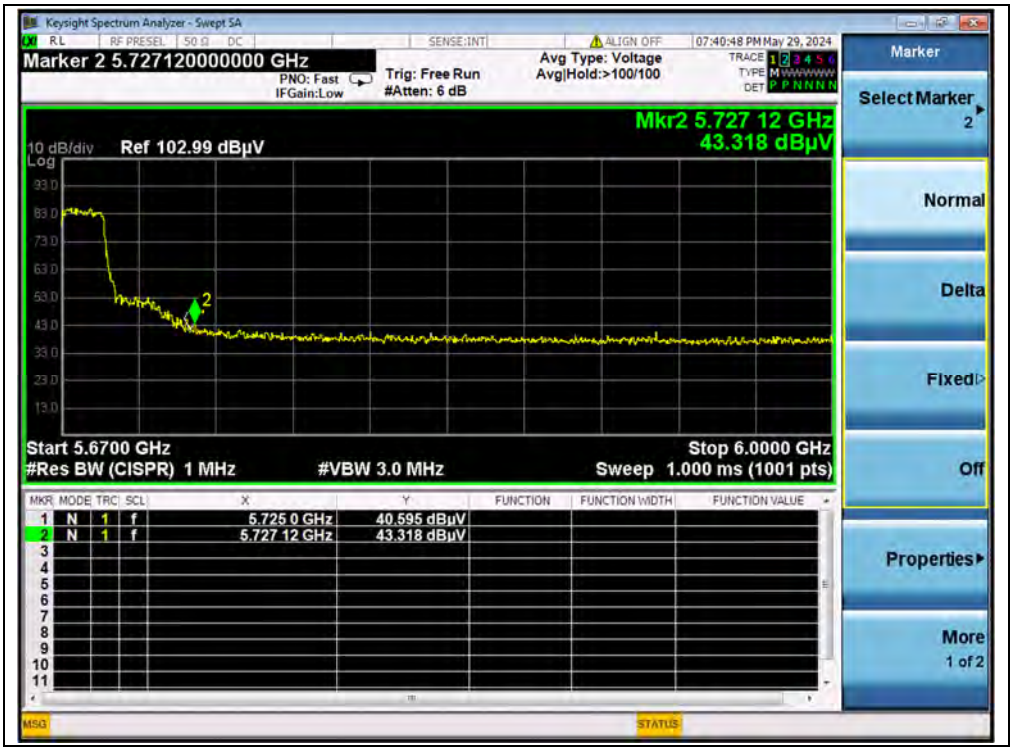
(AVERAGE, Channel 62, 802.11n (HT40))



(PEAK, Channel 102, 802.11n (HT40))



(AVERAGE, Channel 102, 802.11n (HT40))



(PEAK, Channel 142, 802.11n (HT40))

(PEAK, Channel 151, 802.11n (HT40))

(PEAK, Channel 159, 802.11n (HT40))