

■ Plots of Transient Frequency Behavior

11K0F3E

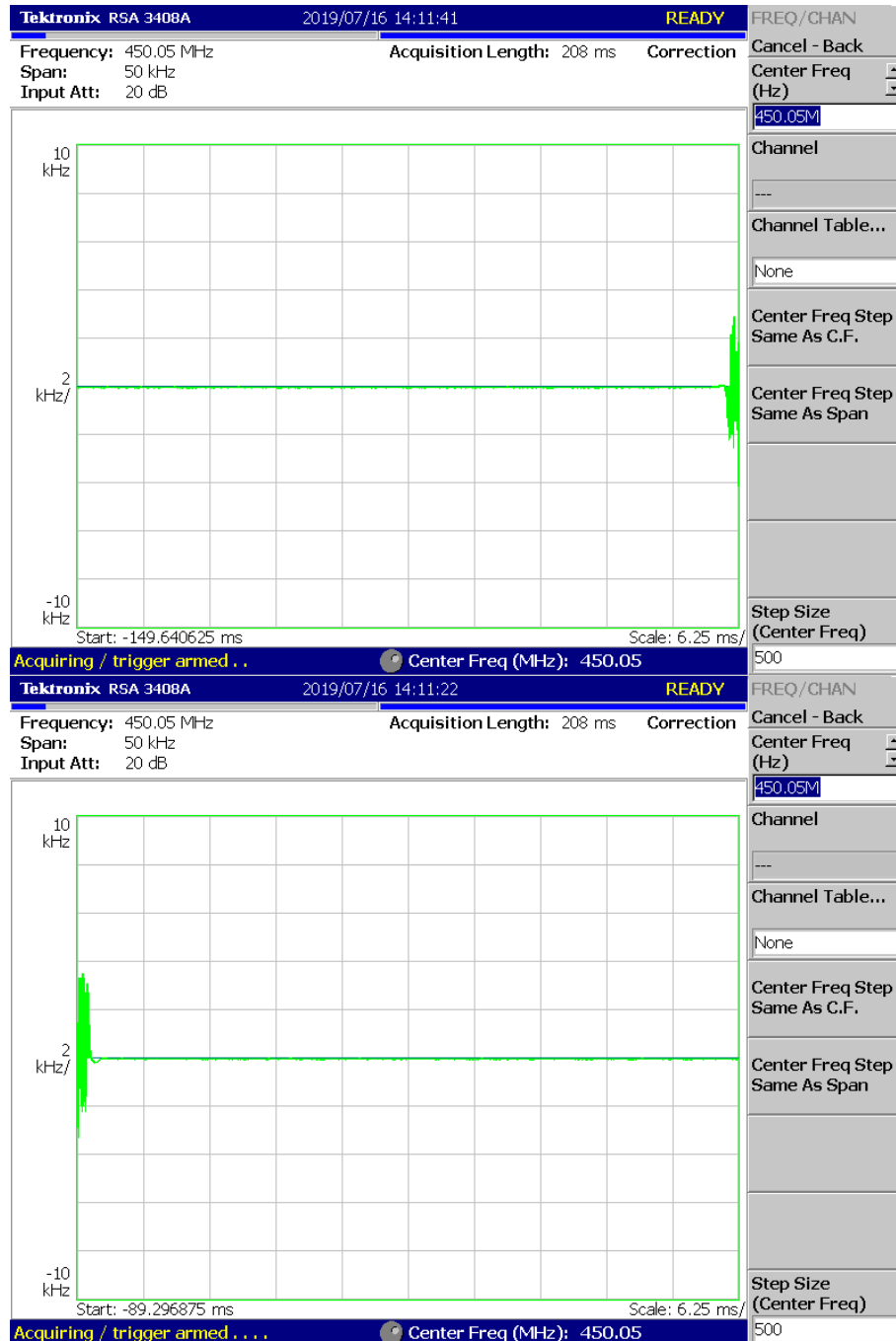
(406.15 MHz)_High



(429.95 MHz)_High



(450.05 MHz)_High



(469.95 MHz)_High



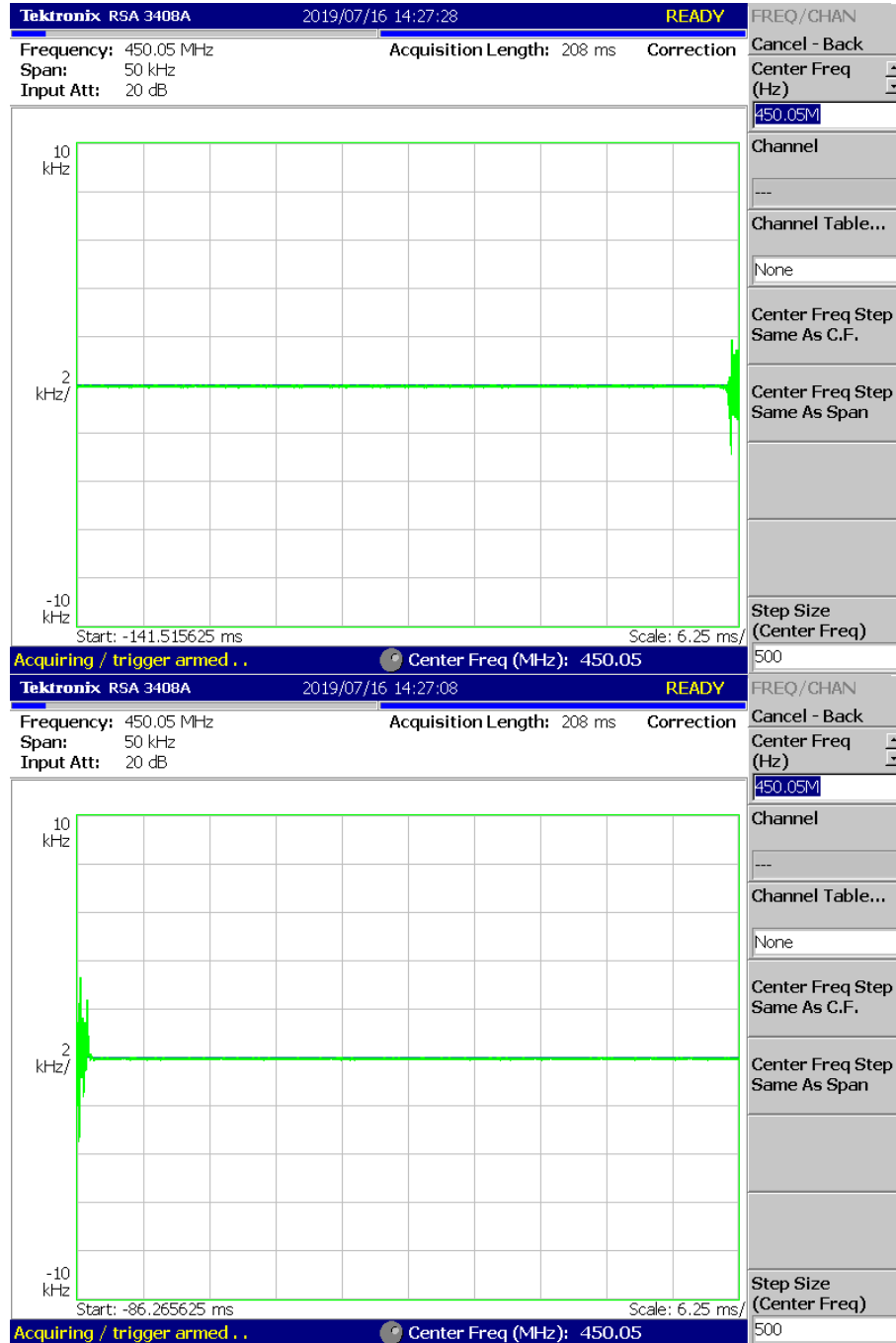
(406.15 MHz)_Low



(429.95 MHz)_Low



(450.05 MHz)_ Low

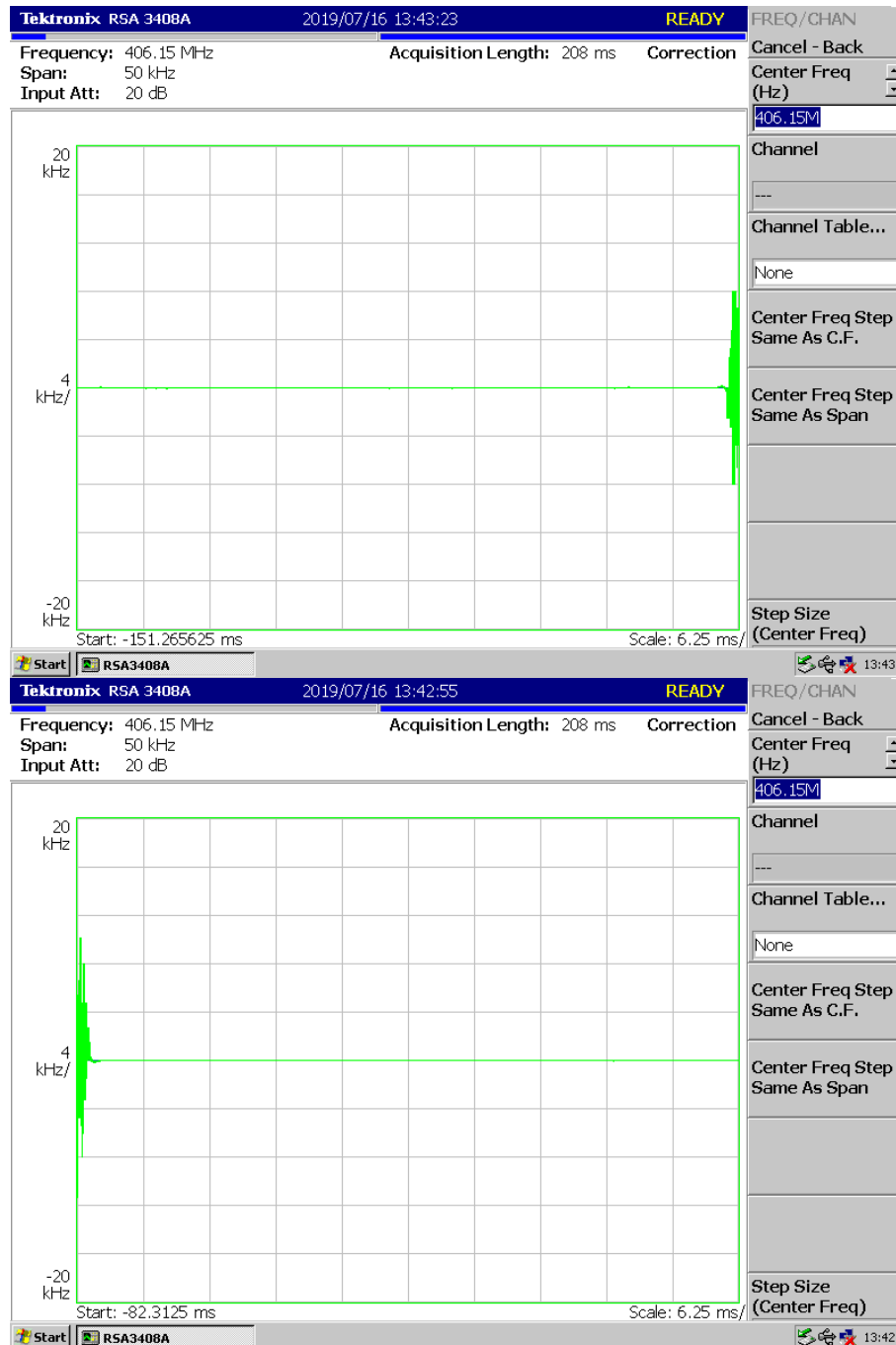


(469.95 MHz)_ Low

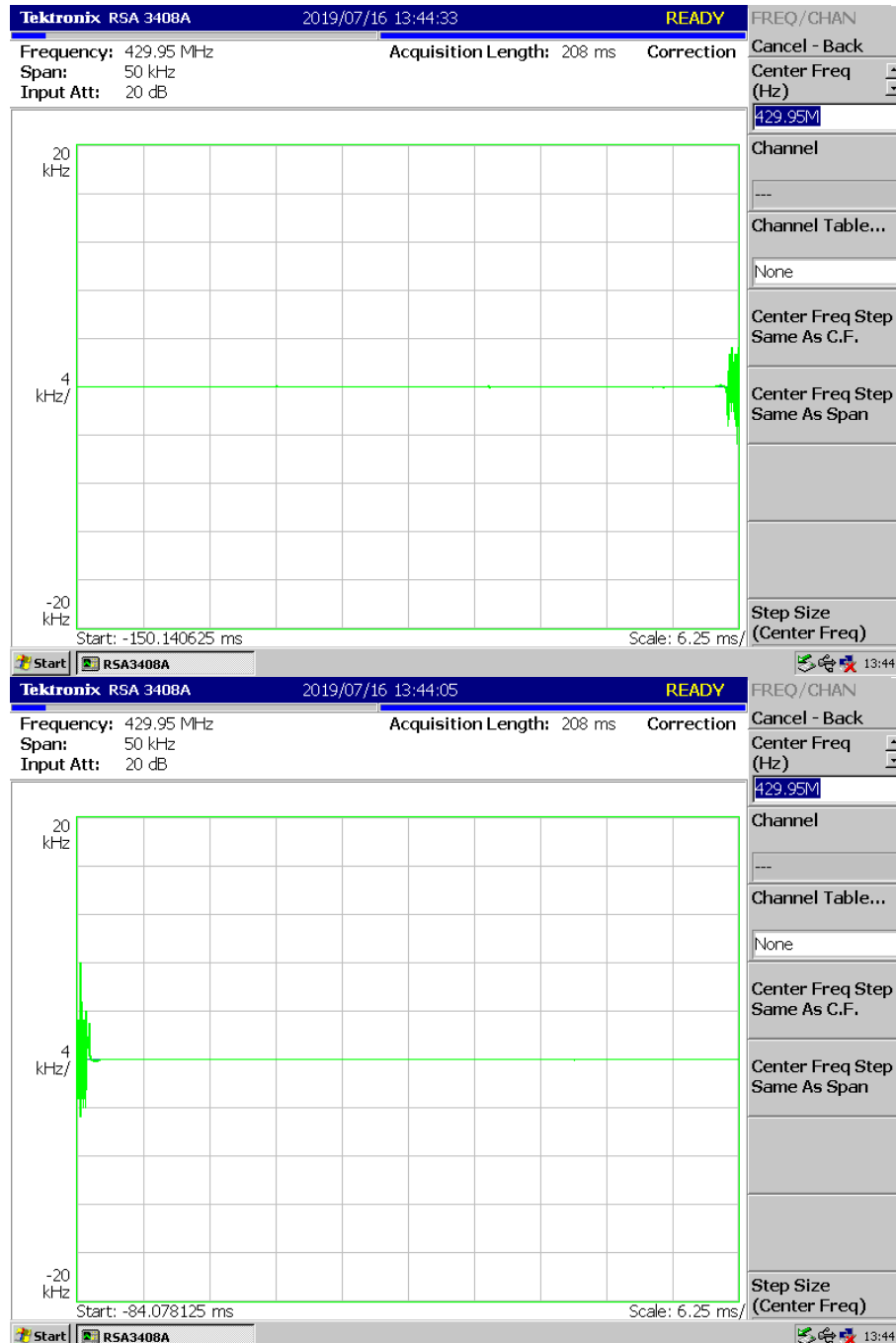


16K0F3E

(406.15 MHz)_High



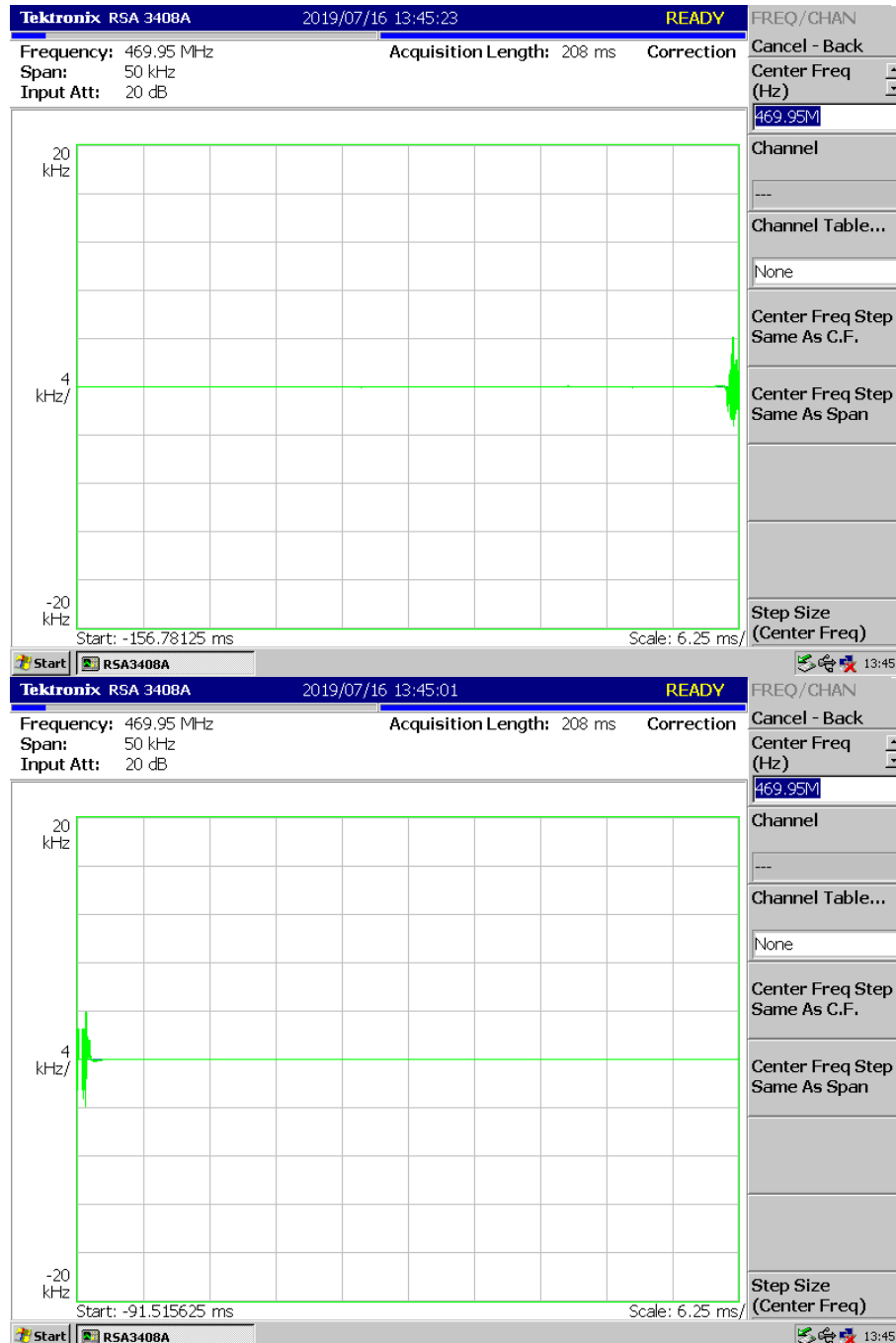
(429.95 MHz)_High



(450.05 MHz)_High



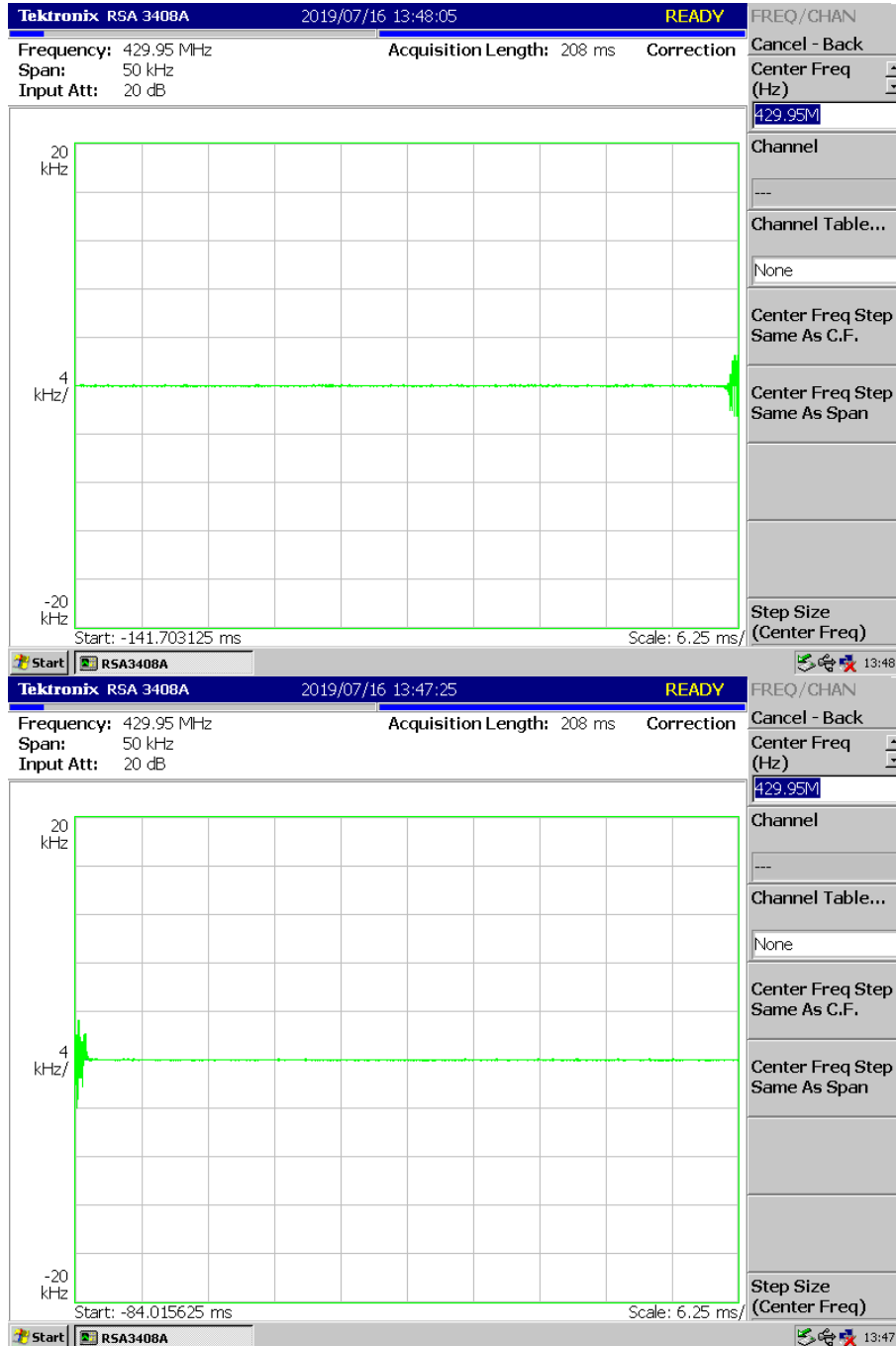
(469.95 MHz)_High



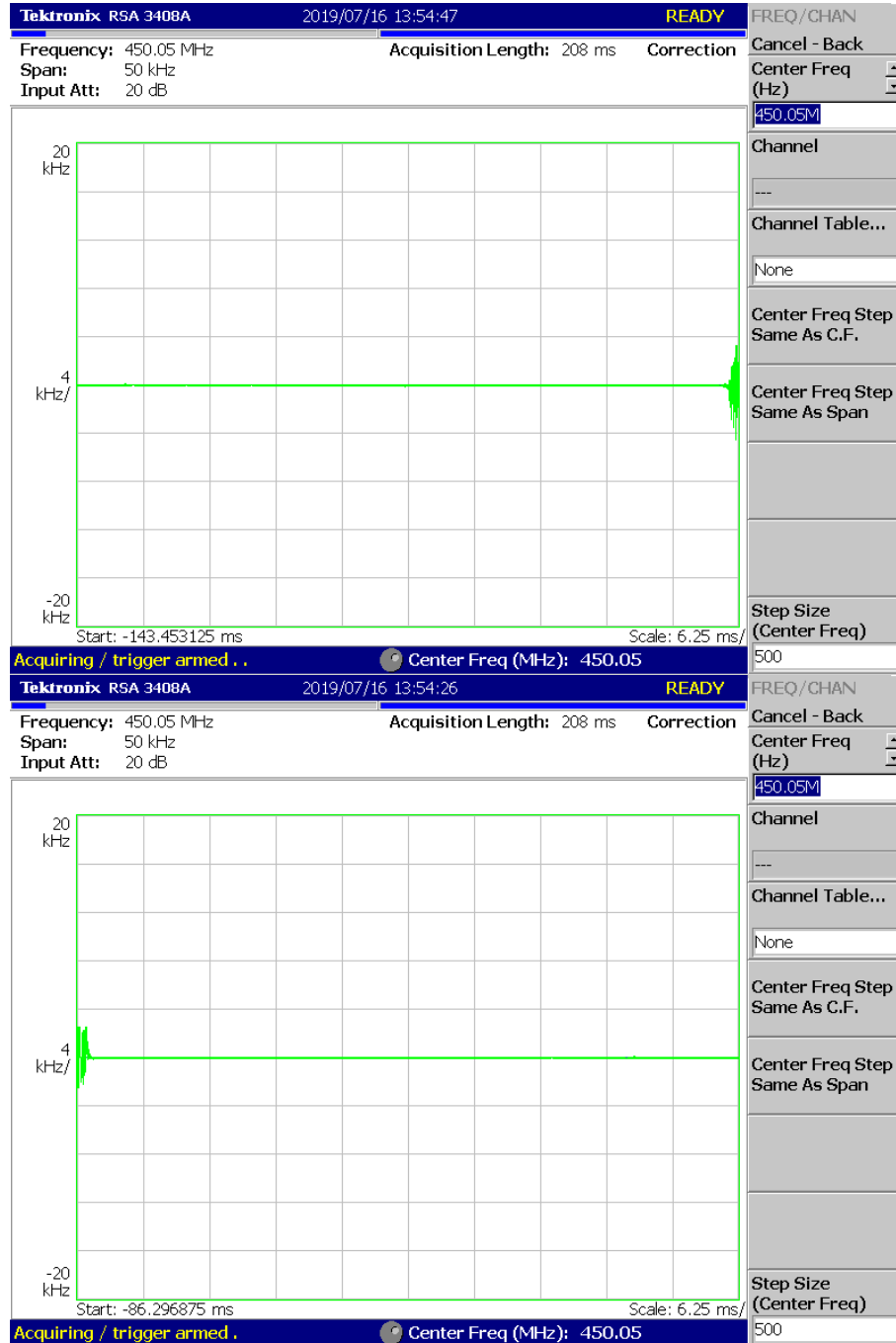
(406.15 MHz)_Low



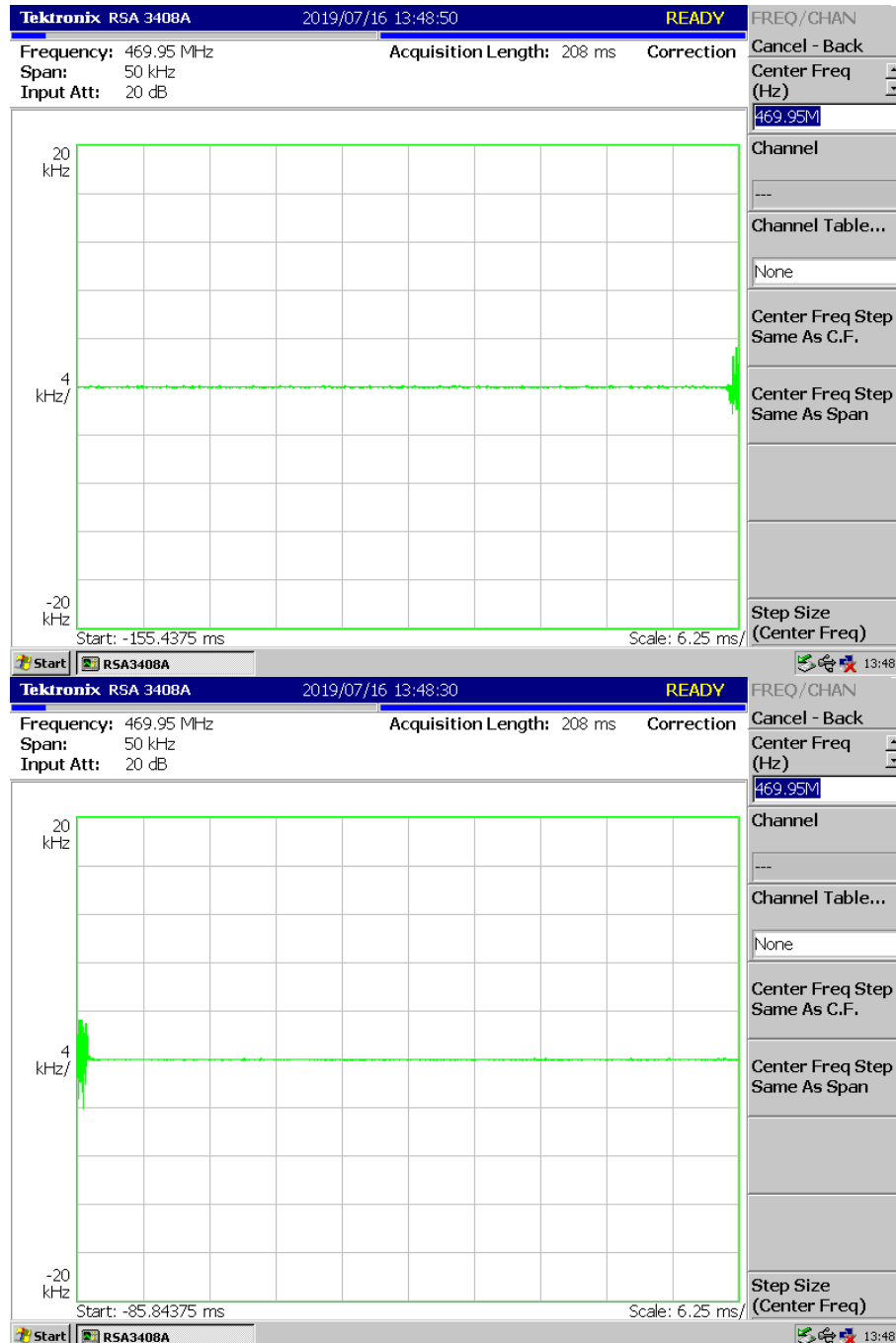
(429.95 MHz)_ Low



(450.05 MHz)_ Low

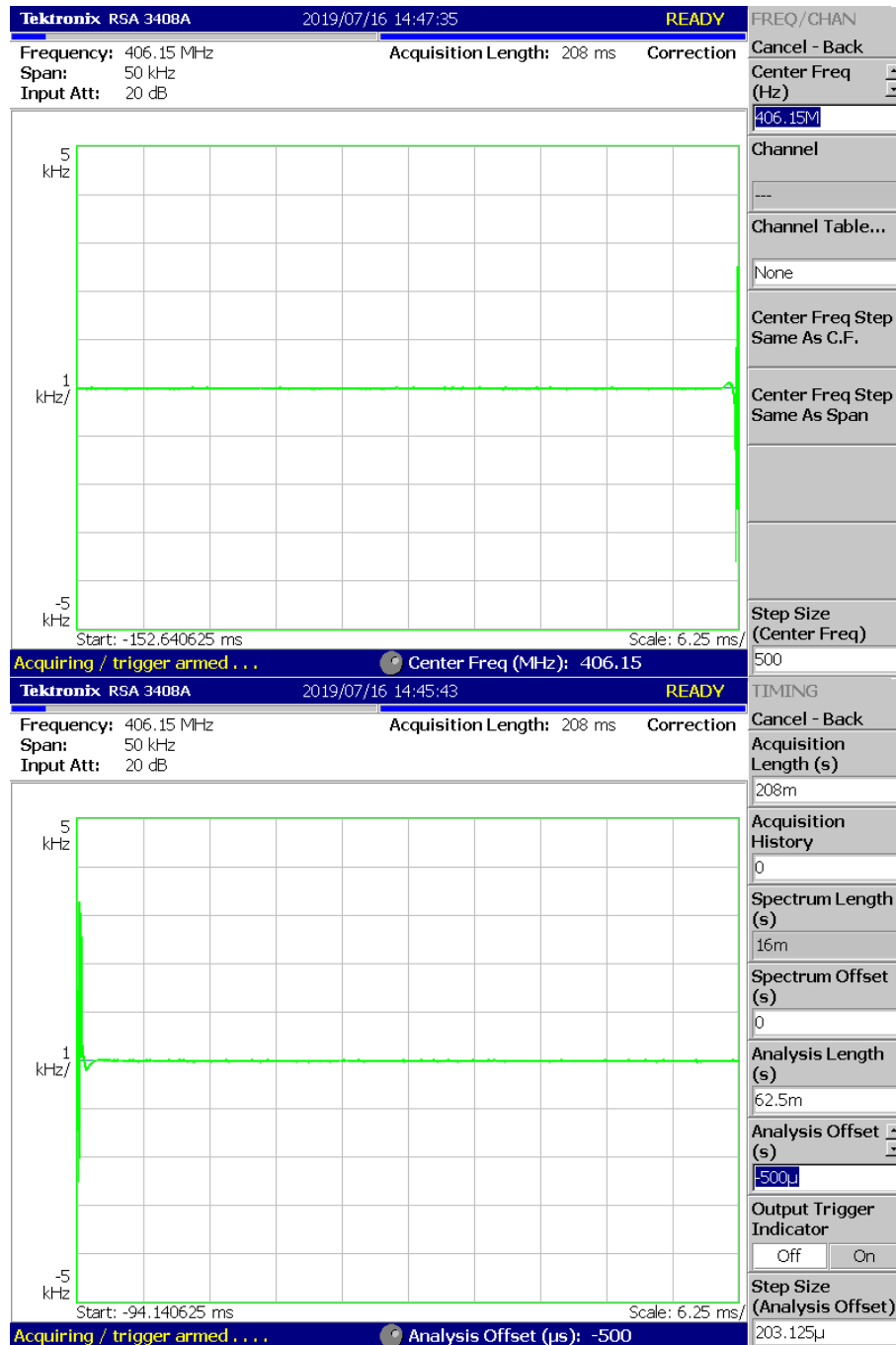


(469.95 MHz)_Low

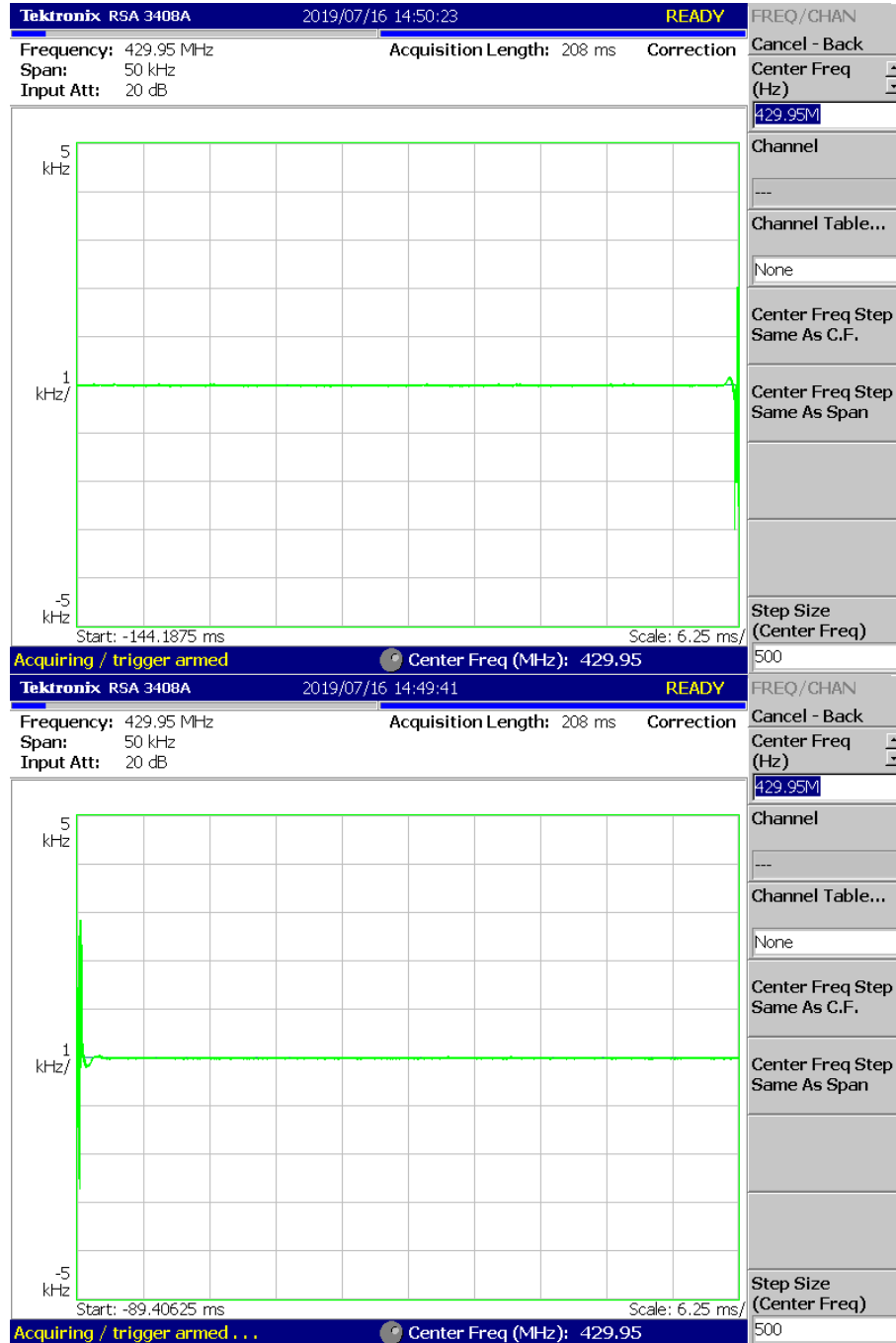


4K00F1E

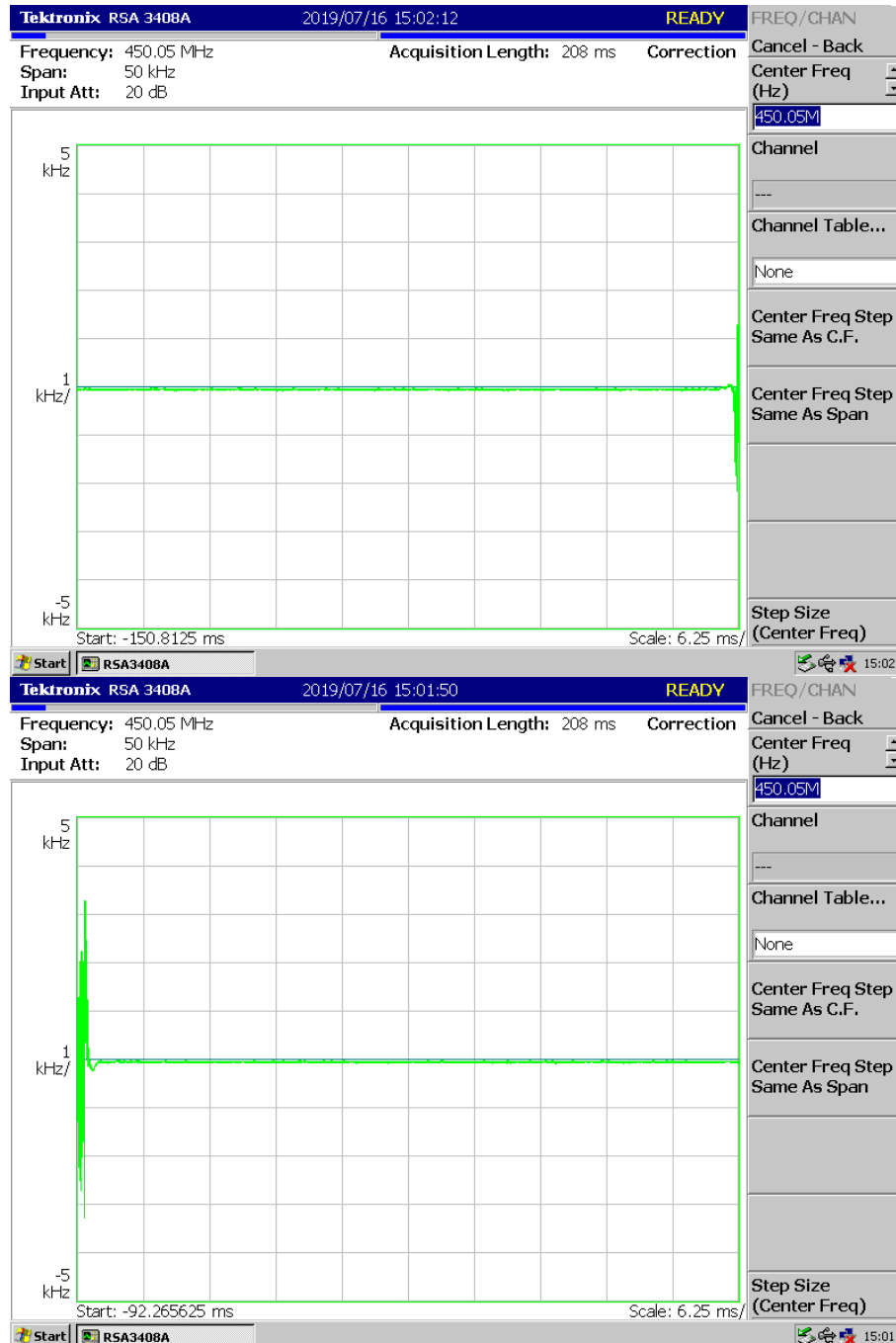
(406.15 MHz)_High



(429.95 MHz)_High



(450.05 MHz)_High



(469.95 MHz)_High



(406.15 MHz)_Low



(429.95 MHz)_ Low



(450.05 MHz)_ Low



(469.95 MHz)_ Low

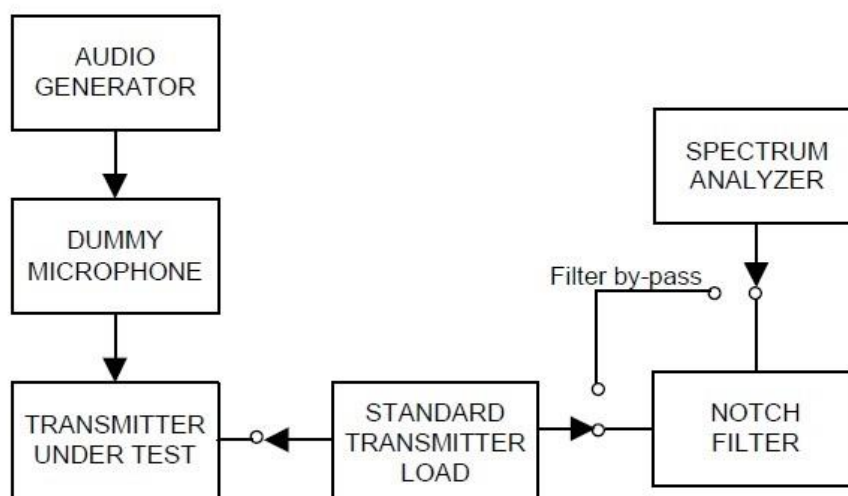


8.8 Unwanted Emissions : Conducted Spurious Emission

■ Definition

Conducted spurious emissions are emissions at the antenna terminals on a frequency or frequencies that are outside a band sufficient to ensure transmission of information of required quality for the class of communication desired.

■ TEST CONFIGURATION



■ TEST PROCEDURE

According to 2.2.13 in TIA-603-E Standard.

- e) Connect the equipment as illustrated, with the notch filter by-passed.
- f) Set the center frequency of the spectrum analyzer to the assigned transmitter frequency, key the transmitter, and set the level of the carrier to the full scale reference line.
- g) Modulate the transmitter with a 2500 Hz sine wave at an input level 16 dB greater than that necessary to produce 50% of rated system deviation. The input level shall be established at the frequency of maximum response of the audio modulation circuit.
- h) Adjust the spectrum analyzer for the following settings:
 - 1) Resolution Bandwidth = 10 kHz for spurious emissions below 1 GHz, and 1 MHz for spurious emissions above 1 GHz.
 - 2) Video Bandwidth ≥ 3 times the resolution bandwidth.
 - 3) Sweep Speed ≤ 2000 Hz per second.
 - 4) Detector Mode = mean or average power.
- e) Adjust the center frequency of the spectrum analyzer for incremental coverage of the range from:
 - 1) The lowest radio frequency generated in the equipment to the carrier frequency minus the test bandwidth (see 1.3.4.4).

- 2) The carrier frequency plus the test bandwidth to a frequency less than 2 times the carrier frequency.
- f) Record the frequencies and levels of spurious emissions from step e).
- g) Unkey the transmitter. Replace the transmitter under test with the signal generator and adjust the signal level to reproduce the frequencies and levels of every spurious emission recorded in step f). Record the signal generator levels in dBm.
- h) Insert the notch filter.
- i) Adjust the spectrum analyzer for the following settings:
 - 1) Resolution Bandwidth = 10 kHz for spurious emissions below 1 GHz, and 1 MHz for spurious emissions above 1 GHz.
 - 2) Video Bandwidth ≥ 3 times the resolution bandwidth.
 - 3) Sweep Speed ≤ 2000 Hz per second.
 - 4) Detector Mode = mean or average power.
- j) Key the transmitter. Adjust the center frequency of the spectrum analyzer for incremental coverage of the range from a frequency equal to 2 times the carrier frequency and to the tenth harmonic of the carrier frequency.

TEST RESULTS

Type of Emission	Power	Test Frequency (MHz)	Measured Frequency (MHz)	Result (dBm)	Limit (dBm)	Margin (dB)
16K0F3E	High Power	406.15	0.010	-33.912	-13.000	20.912
			0.160	-37.698	-13.000	24.698
			994.858	-41.011	-13.000	28.011
			6199.110	-30.852	-13.000	17.852
		429.95	0.009	-35.191	-13.000	22.191
			0.150	-36.355	-13.000	23.355
			367.691	-40.201	-13.000	27.201
			6563.628	-30.787	-13.000	17.787
		450.05	0.013	-35.448	-13.000	22.448
			0.150	-34.894	-13.000	21.894
			900.177	-38.810	-13.000	25.810
			7172.059	-31.909	-13.000	18.909
		469.95	0.009	-32.832	-13.000	19.832
			0.150	-34.818	-13.000	21.818
			939.951	-37.477	-13.000	24.477
			6319.716	-30.922	-13.000	17.922

Type of Emission	Power	Test Frequency (MHz)	Measured Frequency (MHz)	Result (dBm)	Limit (dBm)	Margin (dB)
11K0F3E	High Power	406.15	0.010	-33.609	-20.000	13.609
			0.150	-36.270	-20.000	16.270
			204.714	-40.684	-20.000	20.684
			2648.882	-31.553	-20.000	11.553
		429.95	0.011	-32.452	-20.000	12.452
			0.155	-35.013	-20.000	15.013
			939.757	-40.383	-20.000	20.383
			5814.791	-30.454	-20.000	10.454
		450.05	0.013	-36.779	-20.000	16.779
			0.195	-36.023	-20.000	16.023
			900.080	-40.871	-20.000	20.871
			6917.796	-31.148	-20.000	11.148
		469.95	0.011	-33.607	-20.000	13.607
			0.150	-35.752	-20.000	15.752
			939.854	-37.725	-20.000	17.725
			6611.331	-31.438	-20.000	11.438

Type of Emission	Power	Test Frequency (MHz)	Measured Frequency (MHz)	Result (dBm)	Limit (dBm)	Margin (dB)
8K30F1E, 8K30F1D, 8K30F7W	High Power	406.15	0.010	-34.462	-20.000	14.462
			0.160	-34.979	-20.000	14.979
			922.198	-40.217	-20.000	20.217
			3688.434	-30.117	-20.000	10.117
		429.95	0.013	-34.607	-20.000	14.607
			0.150	-34.542	-20.000	14.542
			791.332	-40.864	-20.000	20.864
			3707.785	-29.879	-20.000	9.879
		450.05	0.012	-33.453	-20.000	13.453
			0.150	-33.162	-20.000	13.162
			935.295	-40.865	-20.000	20.865
			3656.483	-31.587	-20.000	11.587
		469.95	0.011	-32.332	-20.000	12.332
			0.150	-35.323	-20.000	15.323
			939.951	-38.238	-20.000	18.238
			3697.435	-30.865	-20.000	10.865

Type of Emission	Power	Test Frequency (MHz)	Measured Frequency (MHz)	Result (dBm)	Limit (dBm)	Margin (dB)
7K60FXD, 7K60FXE	High Power	406.15	0.011	-35.774	-20.000	15.774
			0.160	-34.844	-20.000	14.844
			906.192	-40.412	-20.000	20.412
			6897.545	-31.597	-20.000	11.597
		429.95	0.011	-33.613	-20.000	13.613
			0.150	-34.175	-20.000	14.175
			909.878	-39.688	-20.000	19.688
			5876.894	-31.359	-20.000	11.359
		450.05	0.009	-33.119	-20.000	13.119
			0.155	-36.329	-20.000	16.329
			900.080	-39.848	-20.000	19.848
			3701.035	-30.759	-20.000	10.759
		469.95	0.014	-36.031	-20.000	16.031
			0.150	-35.393	-20.000	15.393
			939.951	-37.592	-20.000	17.592
			3054.803	-31.198	-20.000	11.198

Type of Emission	Power	Test Frequency (MHz)	Measured Frequency (MHz)	Result (dBm)	Limit (dBm)	Margin (dB)
4K00F1E, 4K00F1D, 4K00F7W	High Power	406.15	0.009	-33.467	-25.000	8.467
			0.165	-35.240	-25.000	10.240
			918.124	-41.375	-25.000	16.375
			6292.715	-30.602	-25.000	5.602
		429.95	0.009	-33.433	-25.000	8.433
			0.155	-35.074	-25.000	10.074
			857.008	-41.145	-25.000	16.145
			6348.517	-31.634	-25.000	6.634
		450.05	0.010	-31.643	-25.000	6.643
			0.155	-34.038	-25.000	9.038
			900.177	-40.225	-25.000	15.225
			5610.931	-31.707	-25.000	6.707
		469.95	0.012	-33.874	-25.000	8.874
			0.150	-35.502	-25.000	10.502
			939.951	-38.914	-25.000	13.914
			6974.949	-31.813	-25.000	6.813

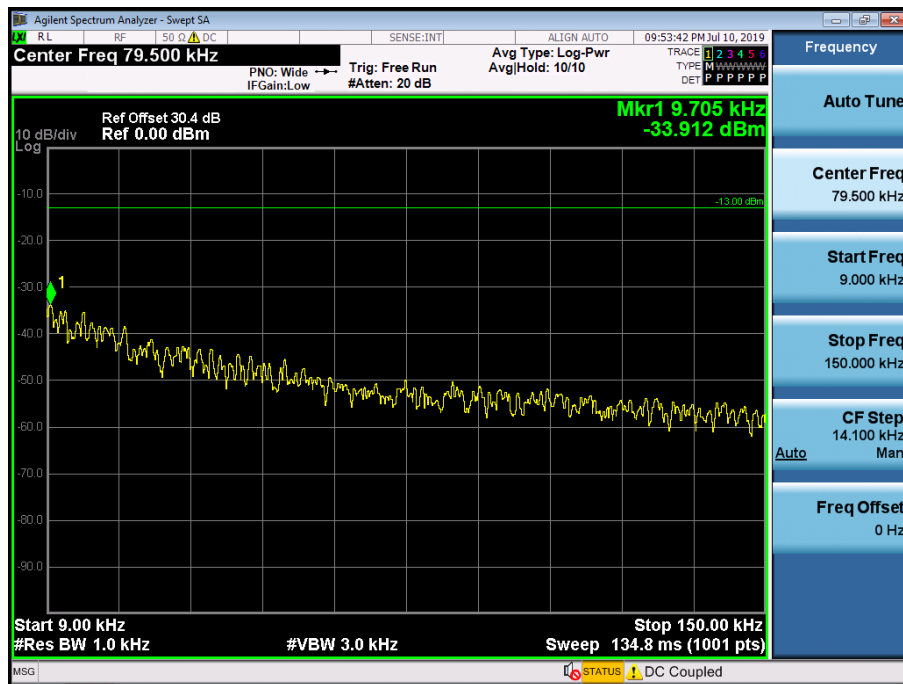
Type of Emission	Power	Test Frequency (MHz)	Measured Frequency (MHz)	Result (dBm)	Limit (dBm)	Margin (dB)
4K00F2D	High Power	406.15	0.017	-63.215	-25.000	38.215
			28.120	-54.868	-25.000	29.868
			812.286	-41.218	-25.000	16.218
			3672.234	-32.155	-25.000	7.155
		429.95	0.029	-64.505	-25.000	39.505
			7.621	-54.395	-25.000	29.395
			859.918	-41.544	-25.000	16.544
			7028.951	-32.999	-25.000	7.999
		450.05	0.010	-63.439	-25.000	38.439
			15.148	-54.202	-25.000	29.202
			900.080	-41.433	-25.000	16.433
			3610.131	-33.040	-25.000	8.040
		469.95	0.011	-63.954	-25.000	38.954
			27.825	-55.029	-25.000	30.029
			954.308	-43.678	-25.000	18.678
			3645.682	-31.835	-25.000	6.835

Plots of Unwanted Emissions : Conducted Spurious Emission

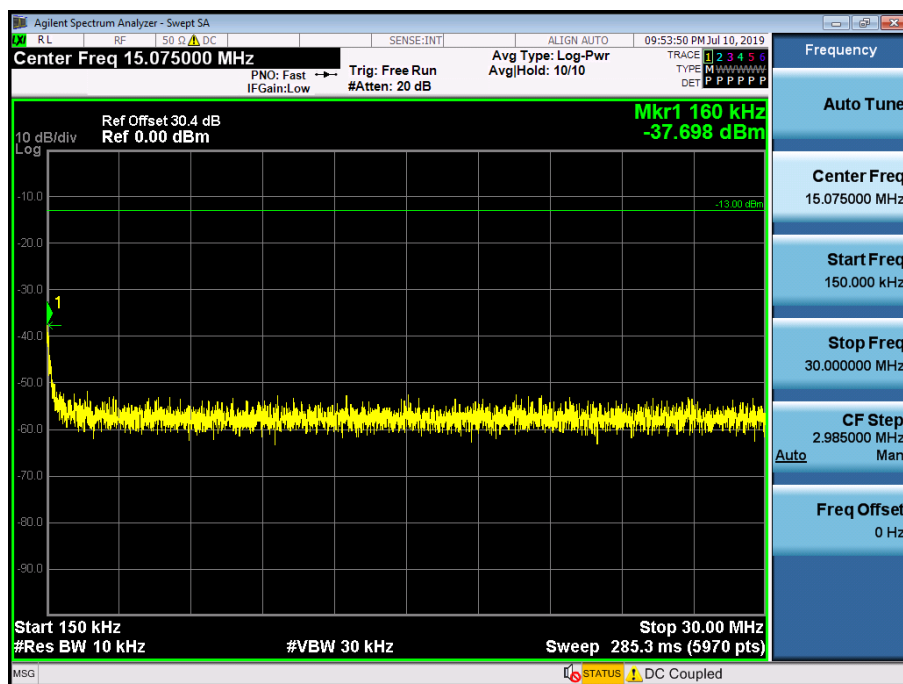
16K0F3E_IC

(406.15 MHz)_High

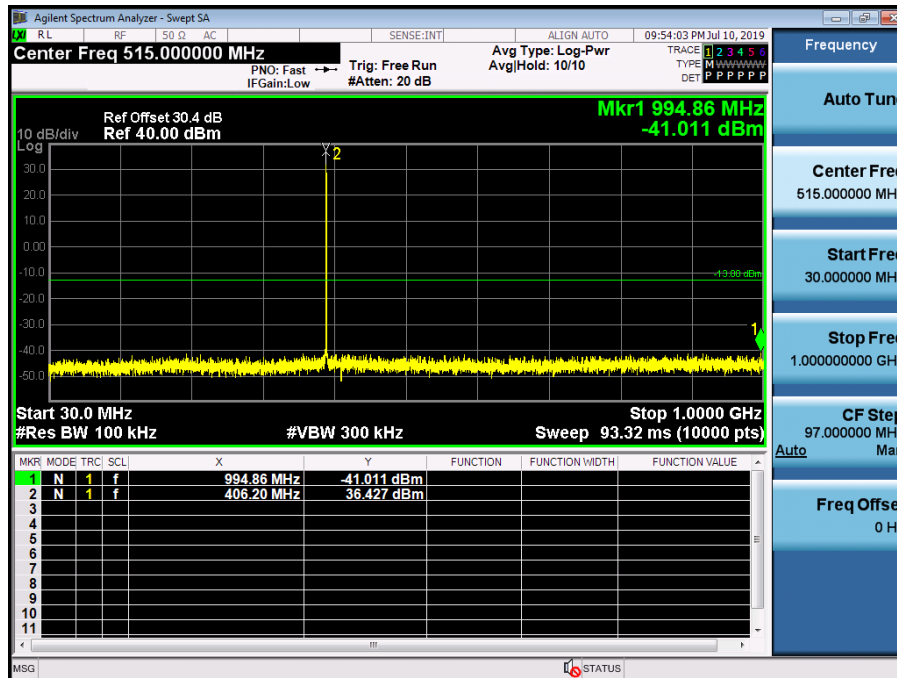
9 kHz~150 kHz



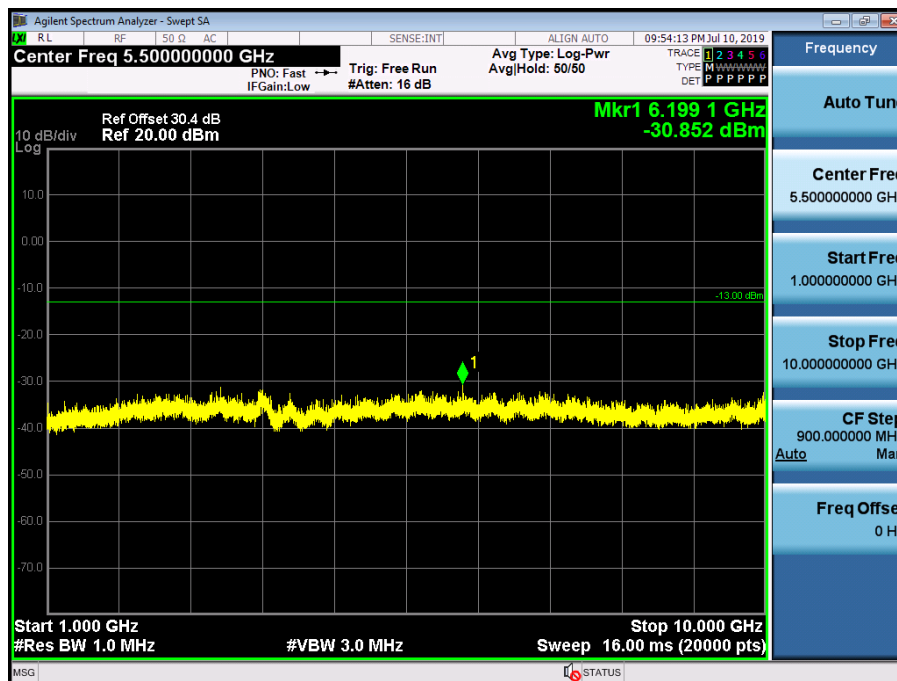
150 kHz~30 MHz



30 MHz~1 GHz

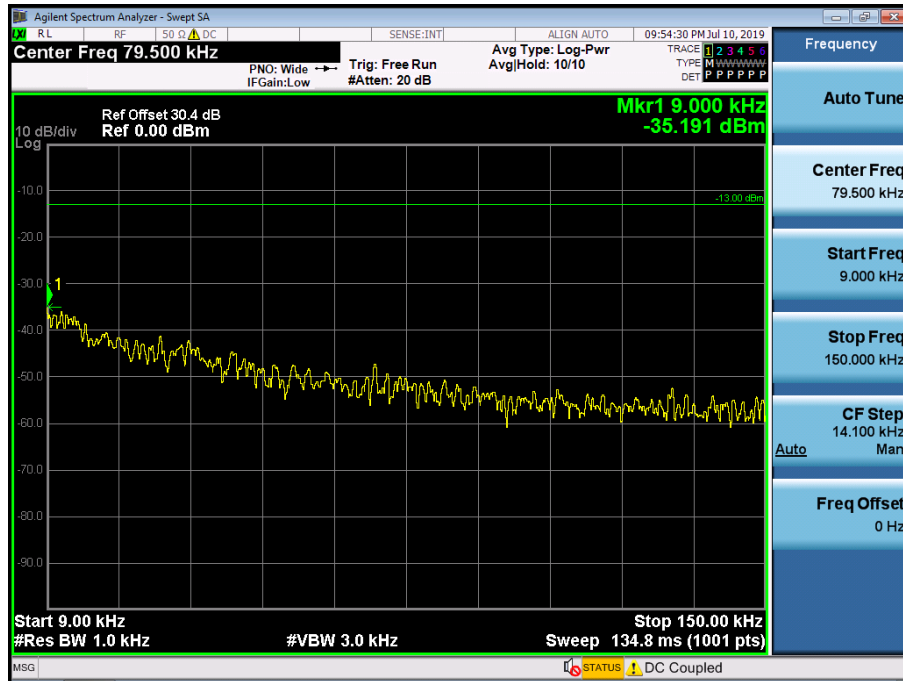


1 GHz~10 GHz

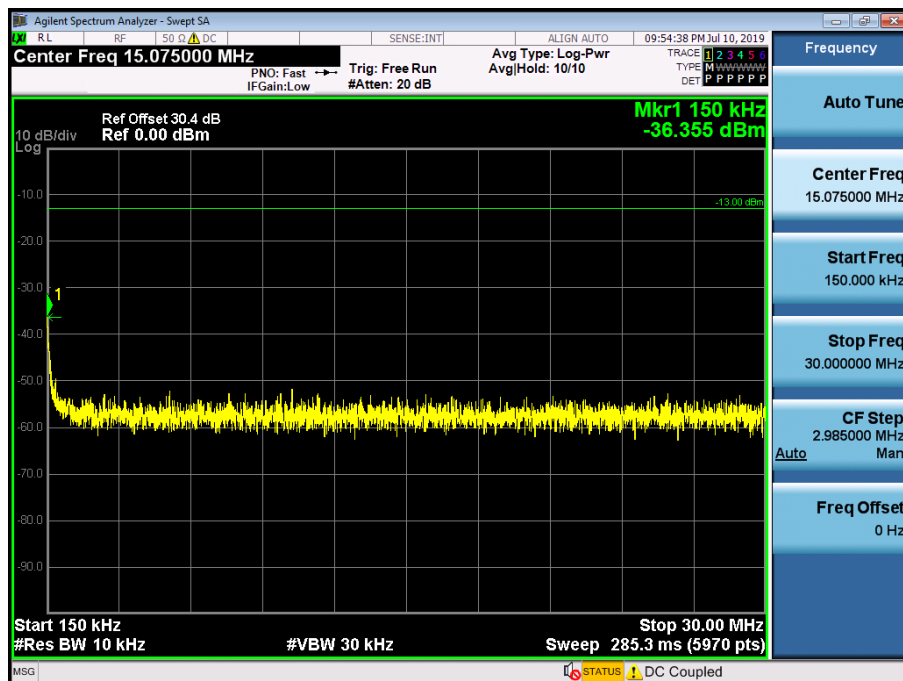


(429.95 MHz)_High

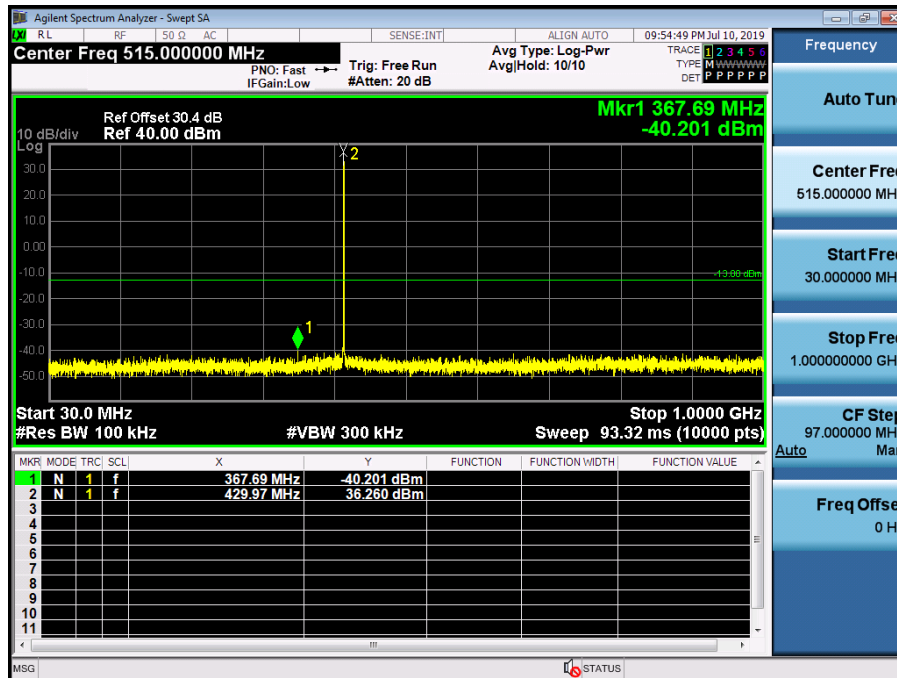
9 kHz~150 kHz



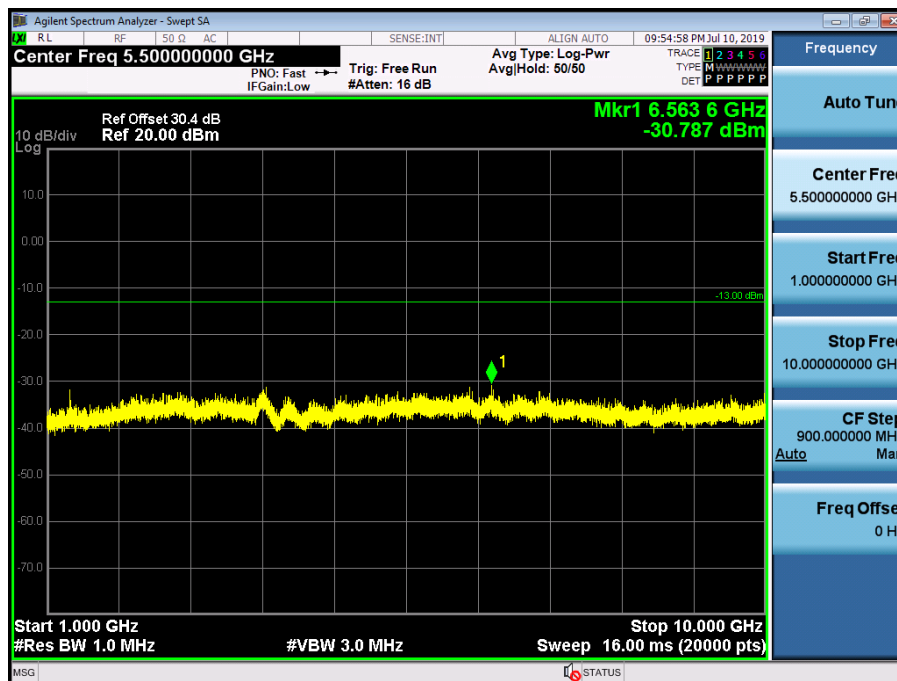
150 kHz~30 MHz



30 MHz~1 GHz



1 GHz~10 GHz

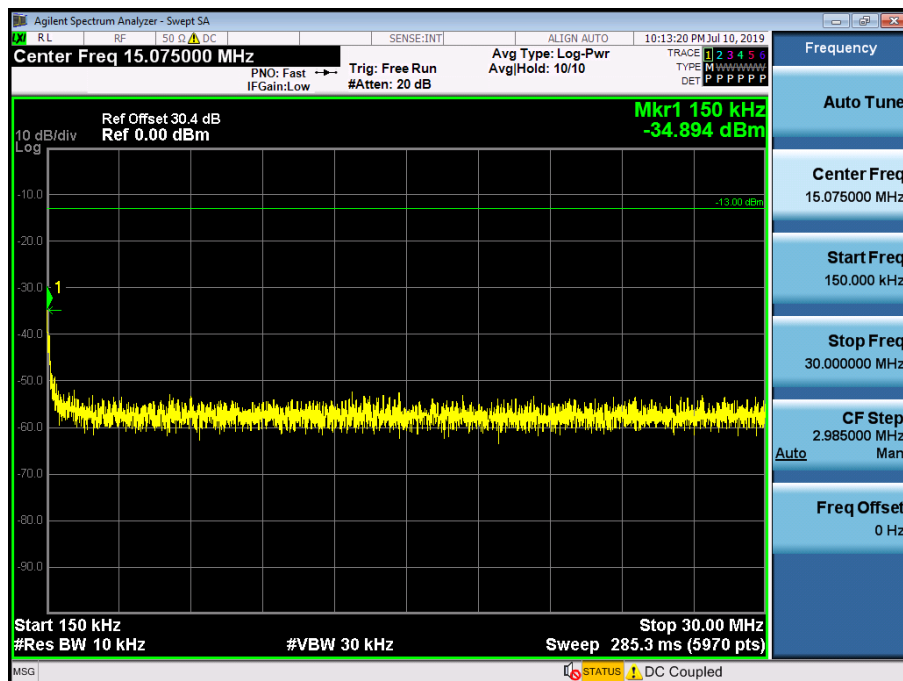


(450.05 MHz)_High

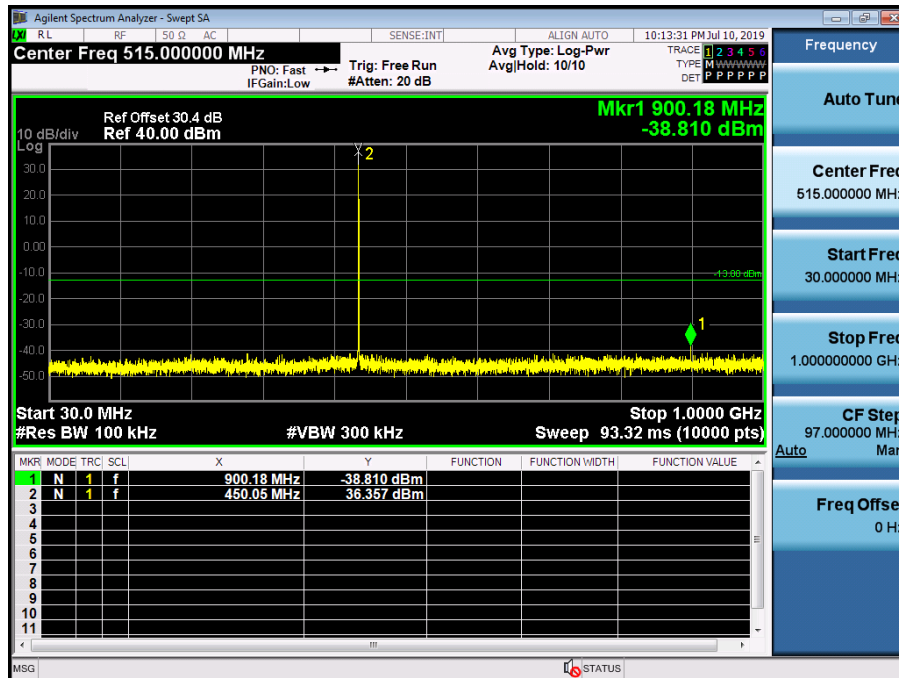
9 kHz~150 kHz



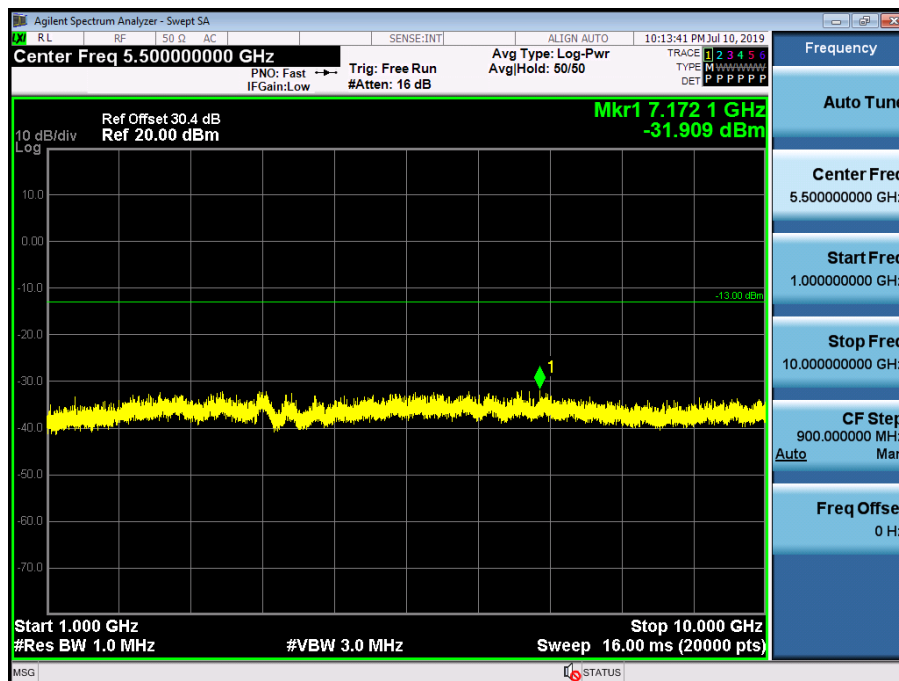
150 kHz~30 MHz



30 MHz~1 GHz

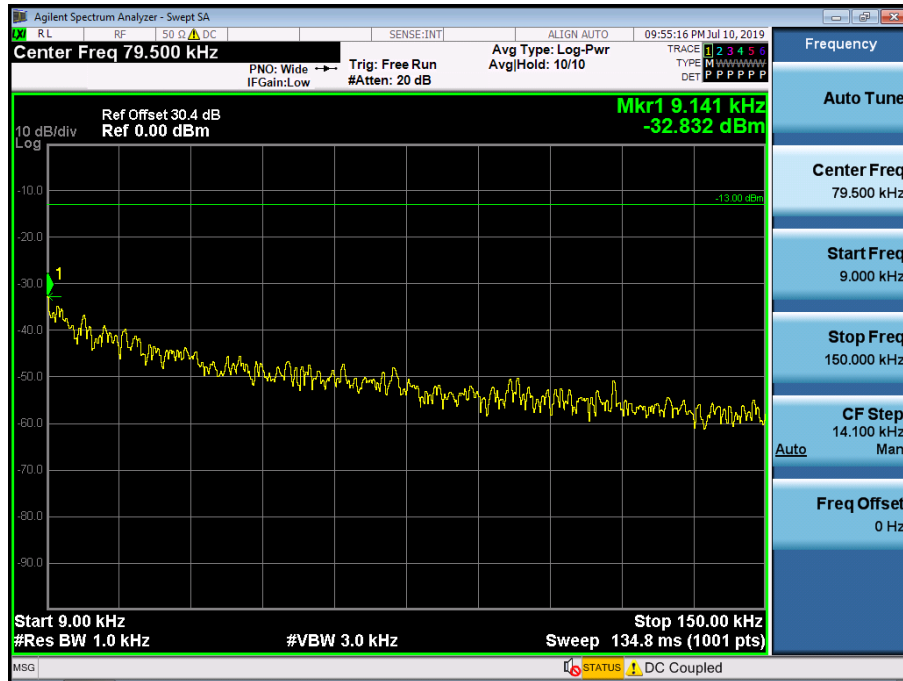


1 GHz~10 GHz

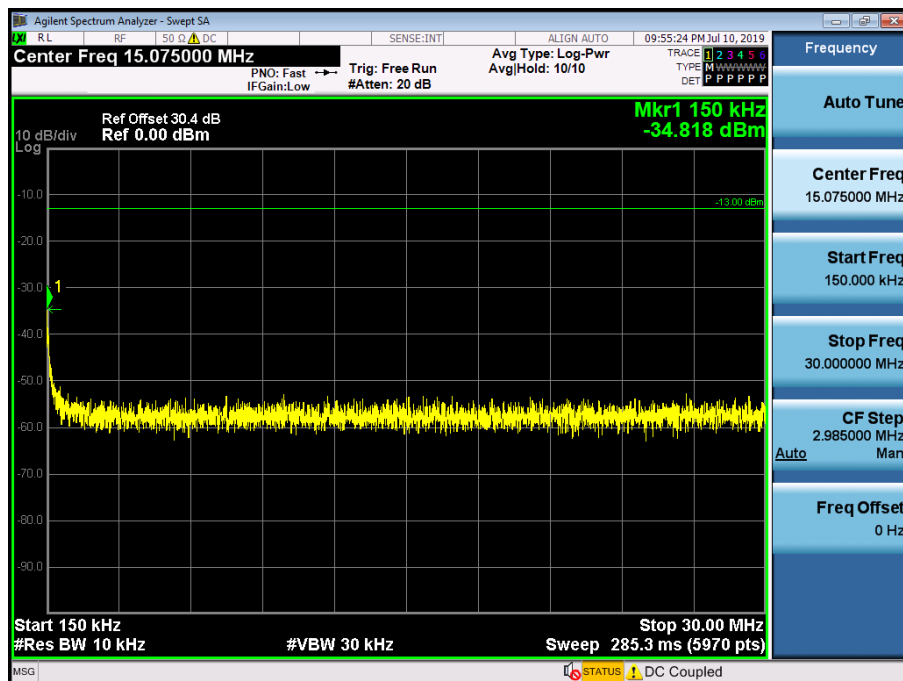


(469.95 MHz)_High

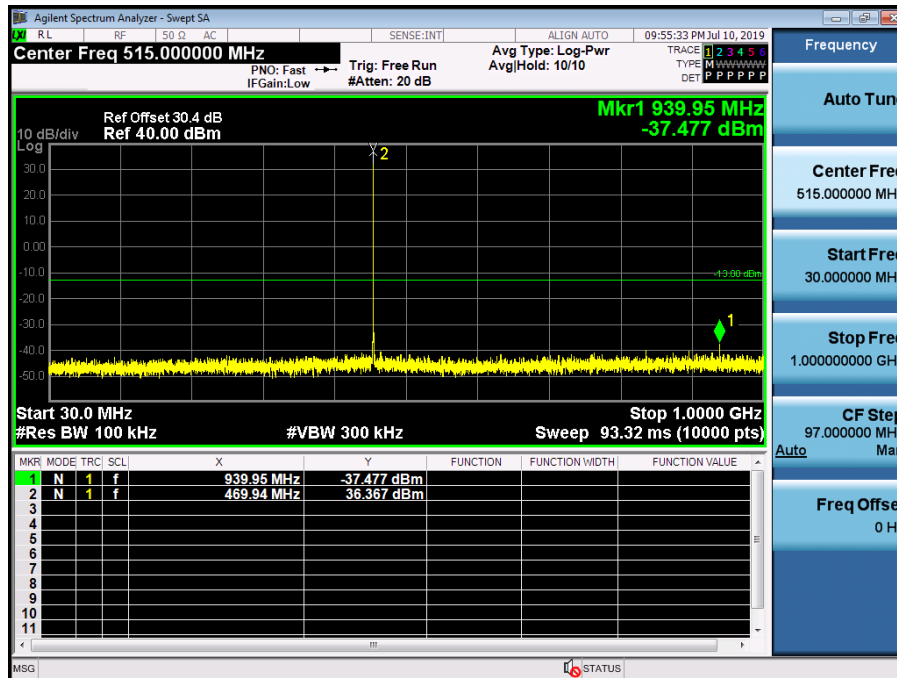
9 kHz~150 kHz



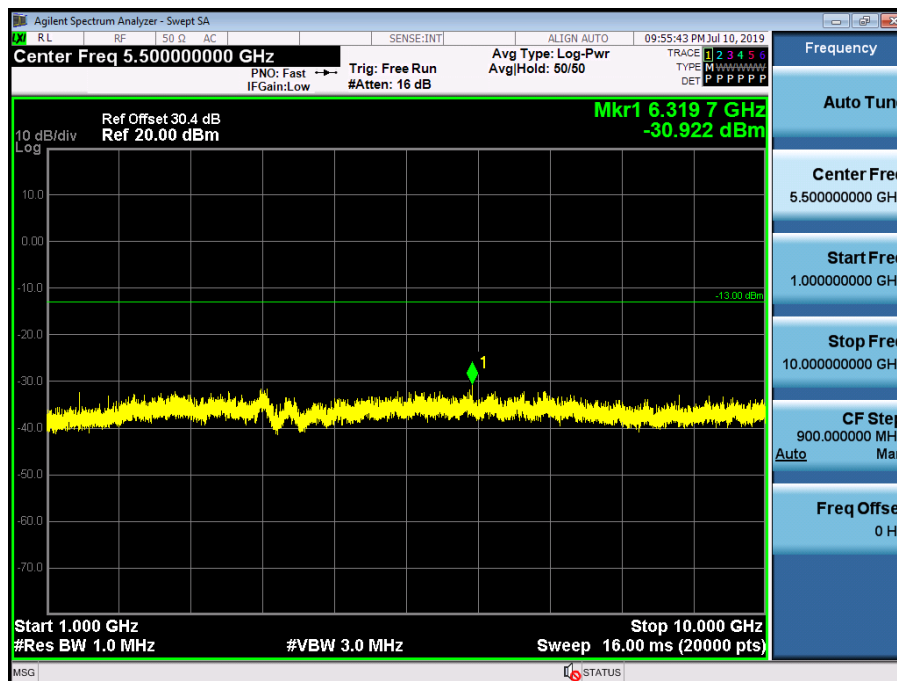
150 kHz~30 MHz



30 MHz~1 GHz



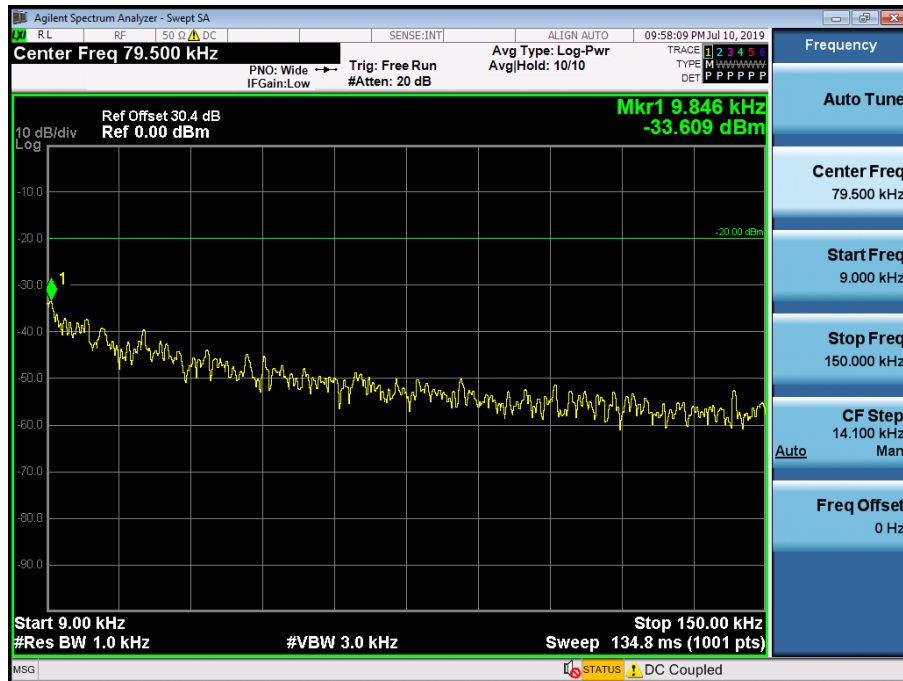
1 GHz~10 GHz



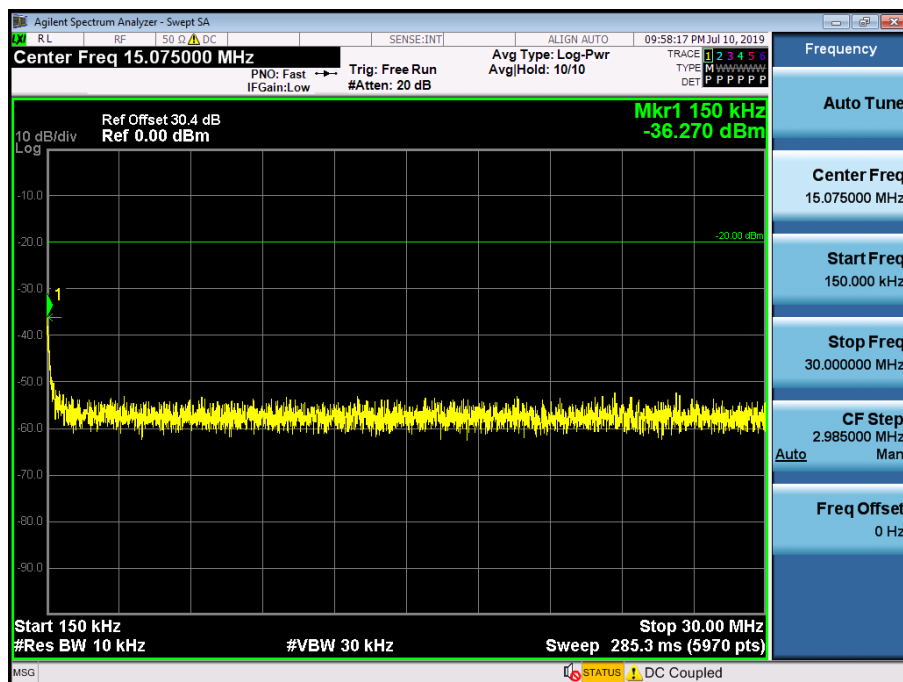
11K0F3E_FCC/IC

(406.15 MHz)_High

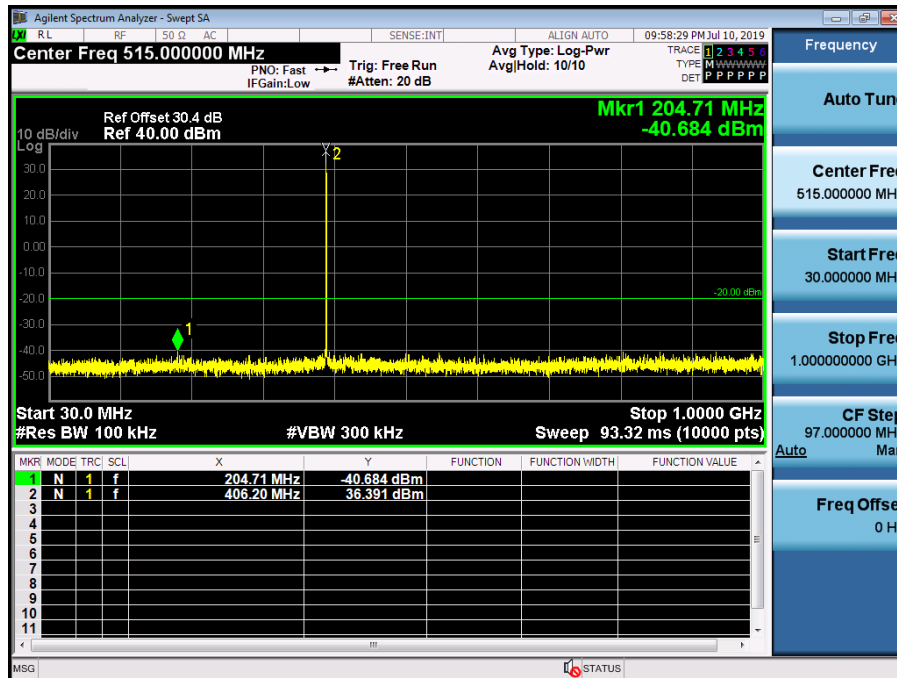
9 kHz~150 kHz



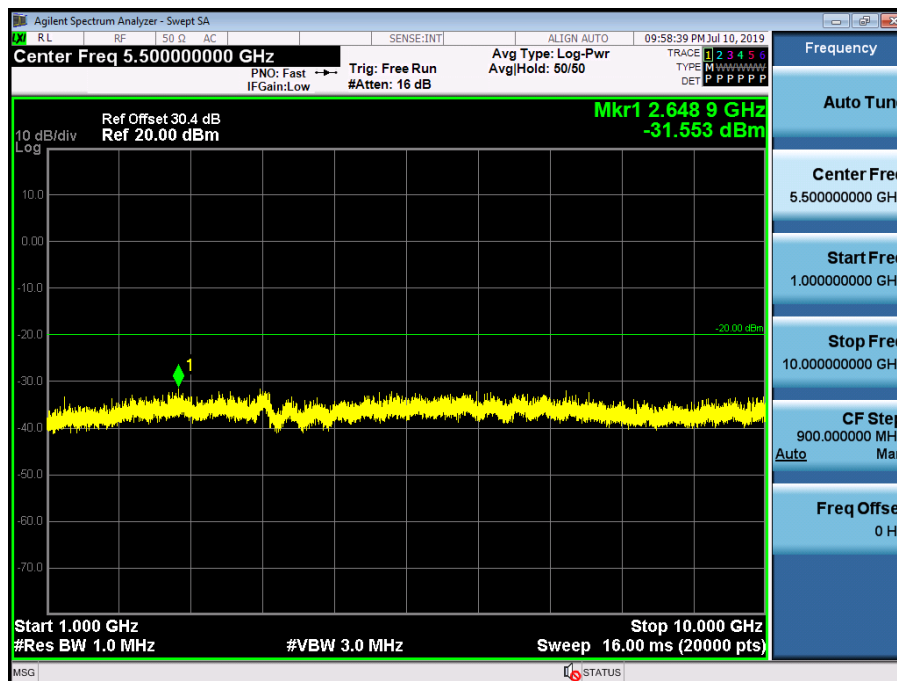
150 kHz~30 MHz



30 MHz~1 GHz

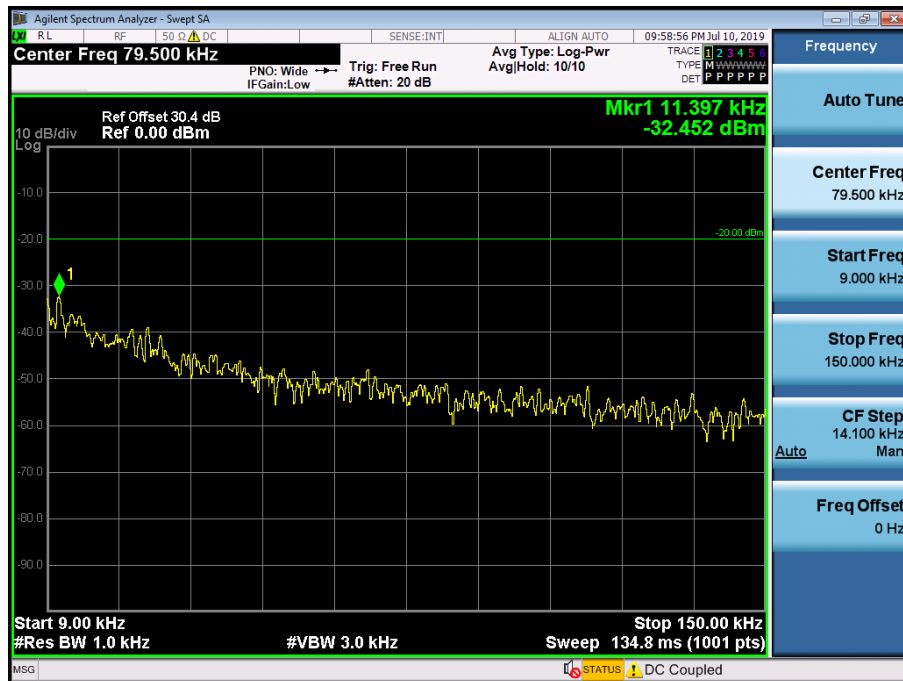


1 GHz~10 GHz

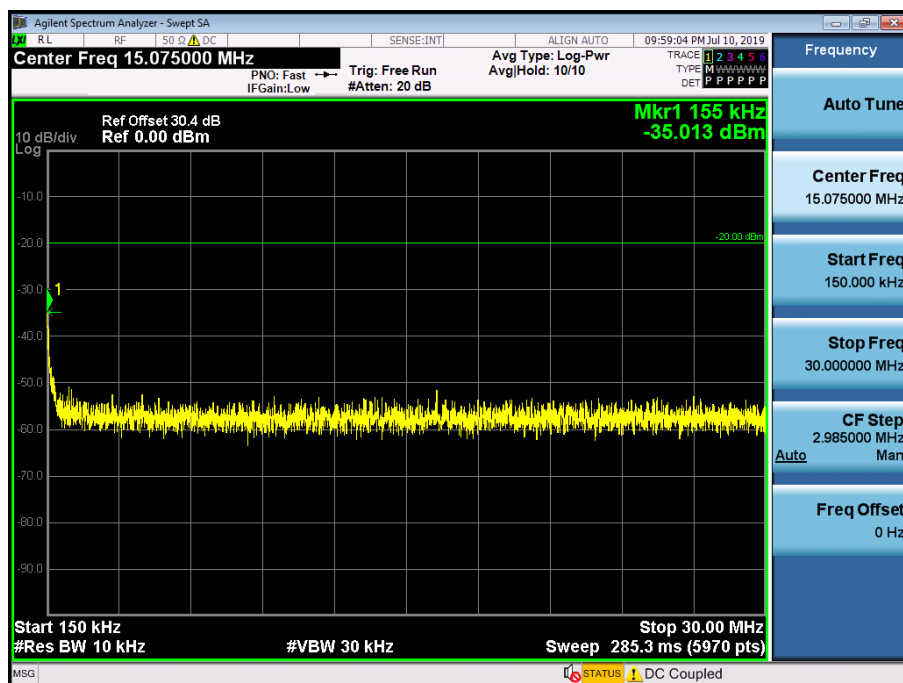


(429.95 MHz)_High

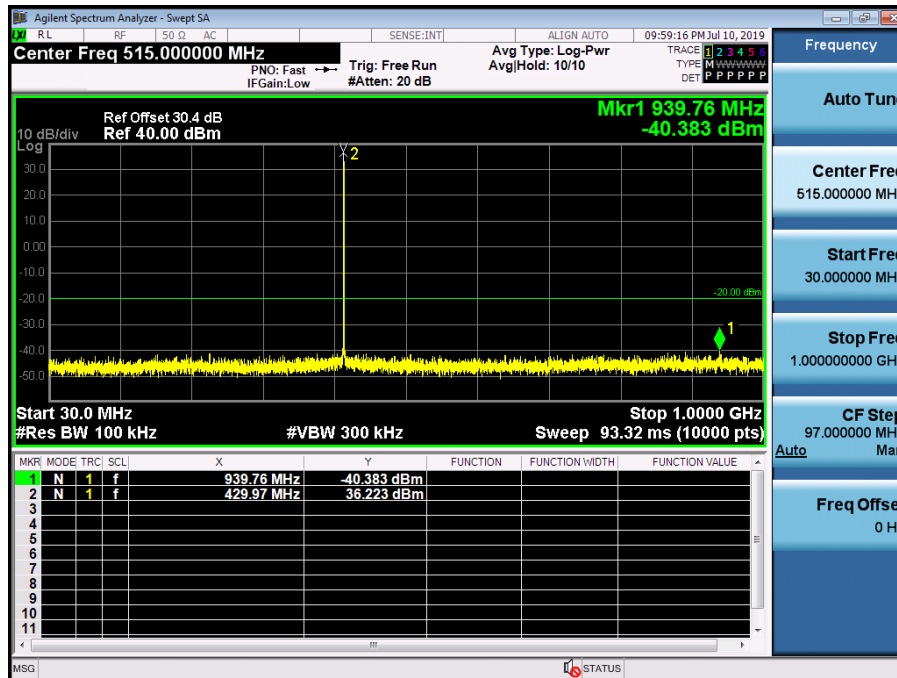
9 kHz~150 kHz



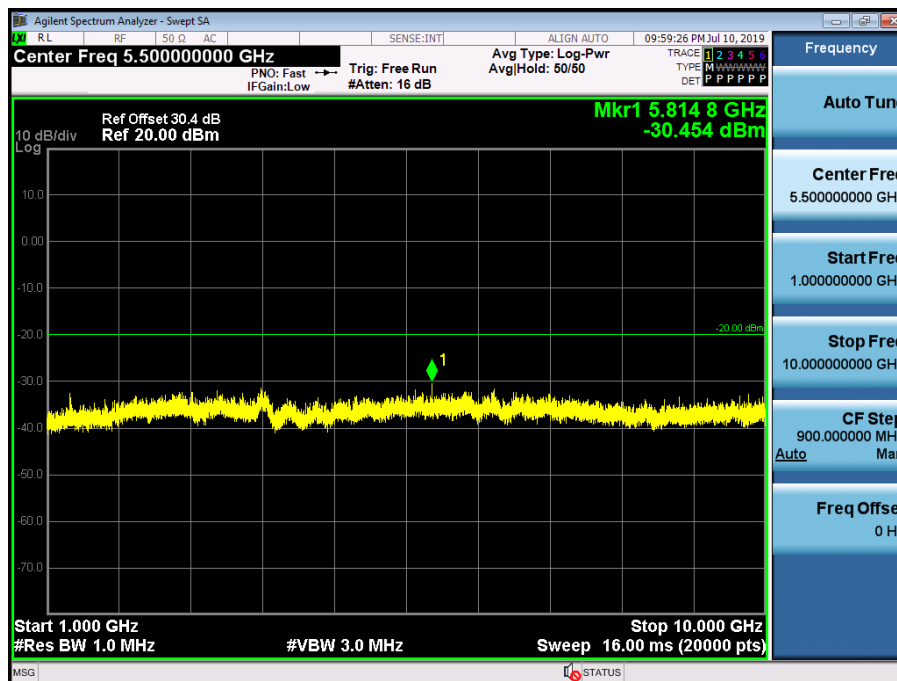
150 kHz~30 MHz



30 MHz~1 GHz

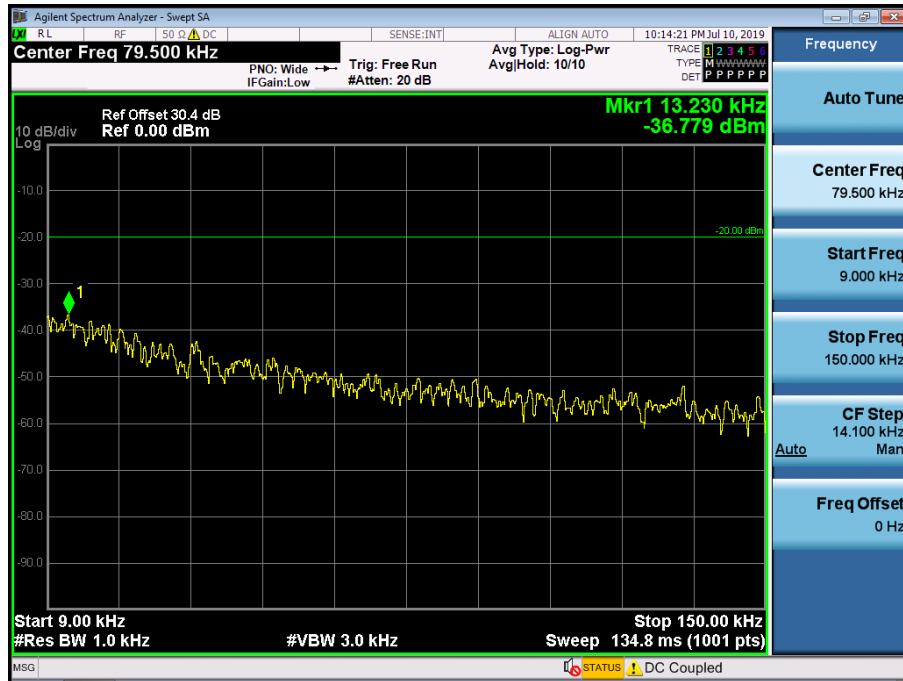


1 GHz~10 GHz

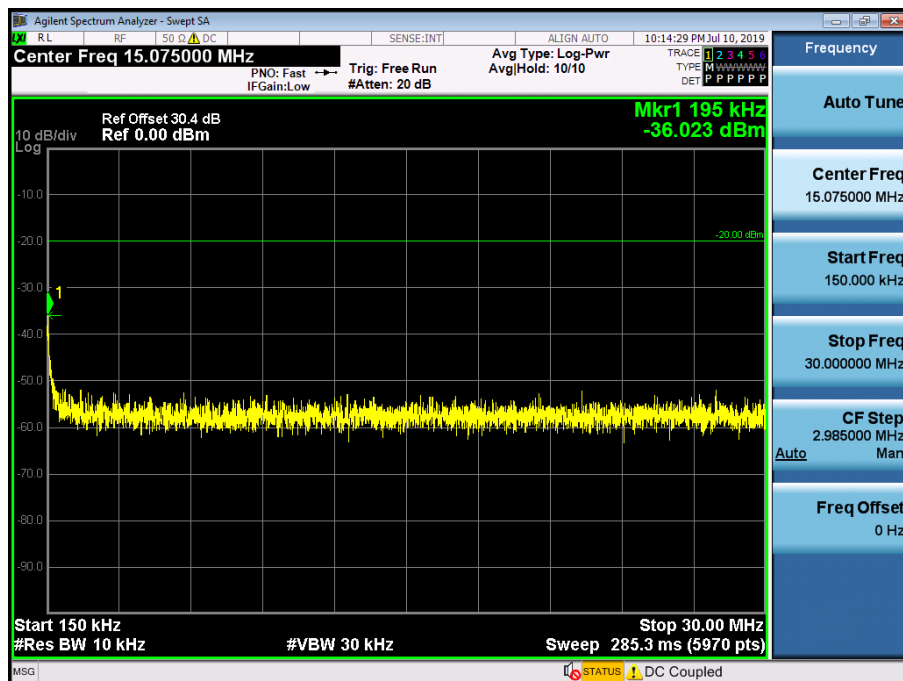


(450.05 MHz)_High

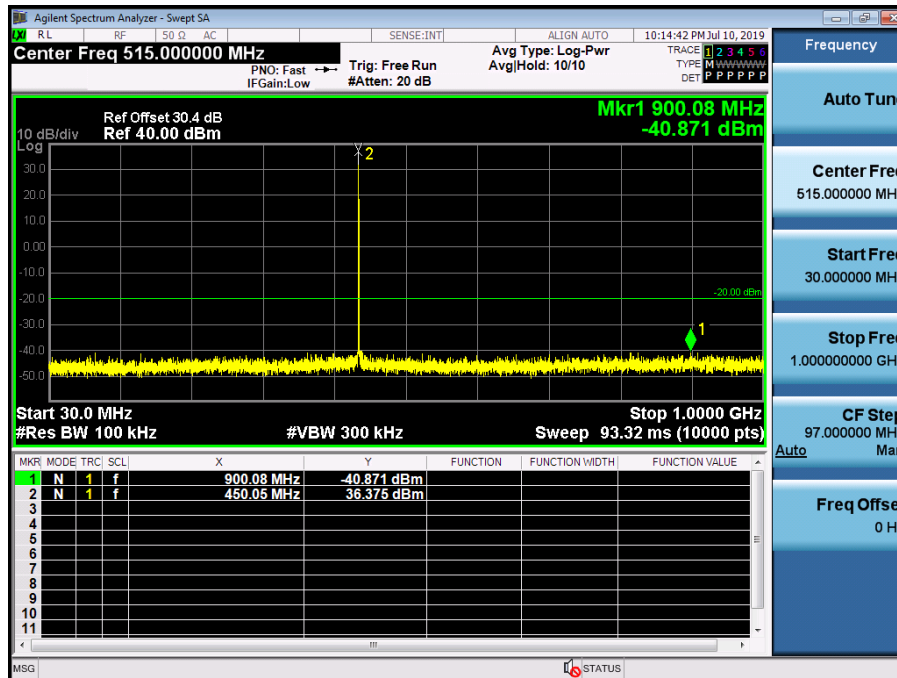
9 kHz~150 kHz



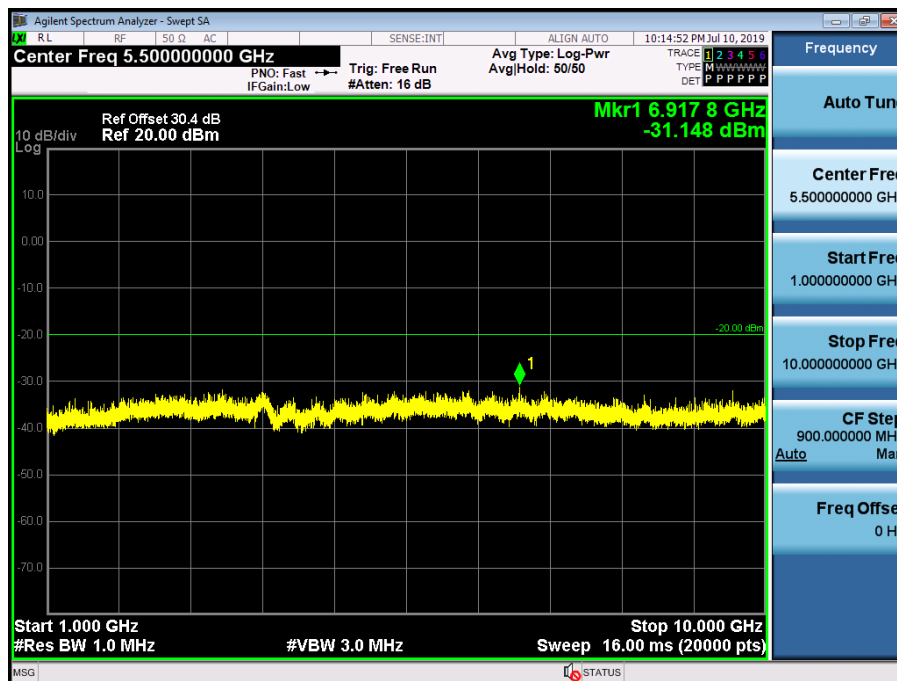
150 kHz~30 MHz



30 MHz~1 GHz

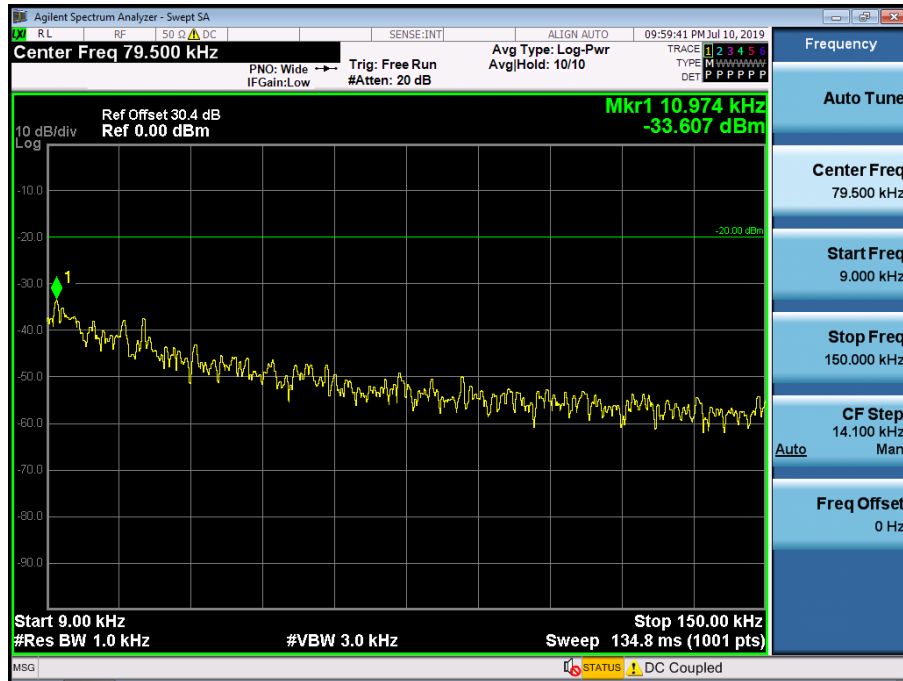


1 GHz~10 GHz



(469.95 MHz)_High

9 kHz~150 kHz



150 kHz~30 MHz

