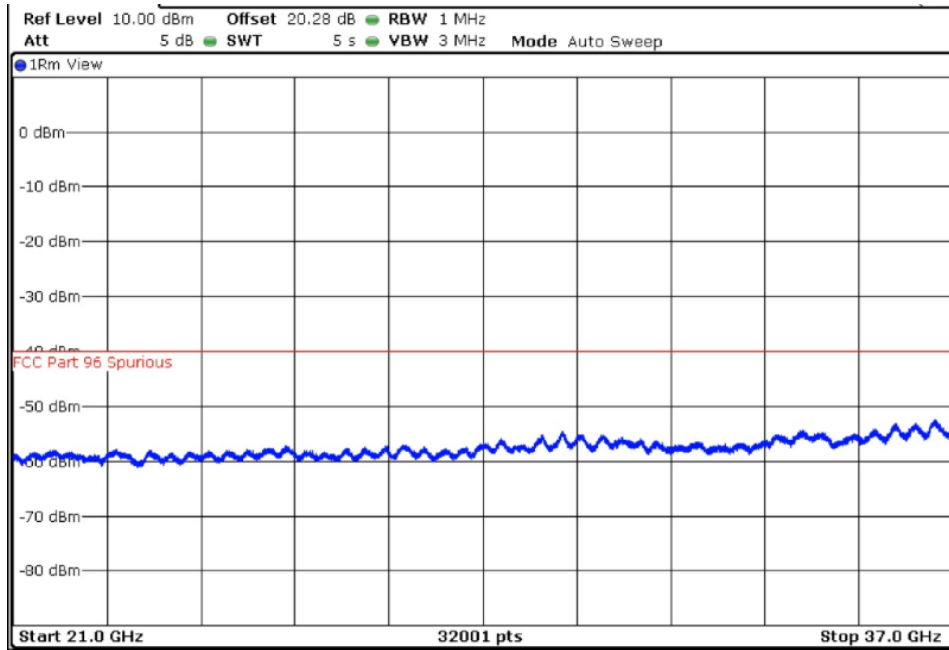


TEST RESULTS (Cont.):

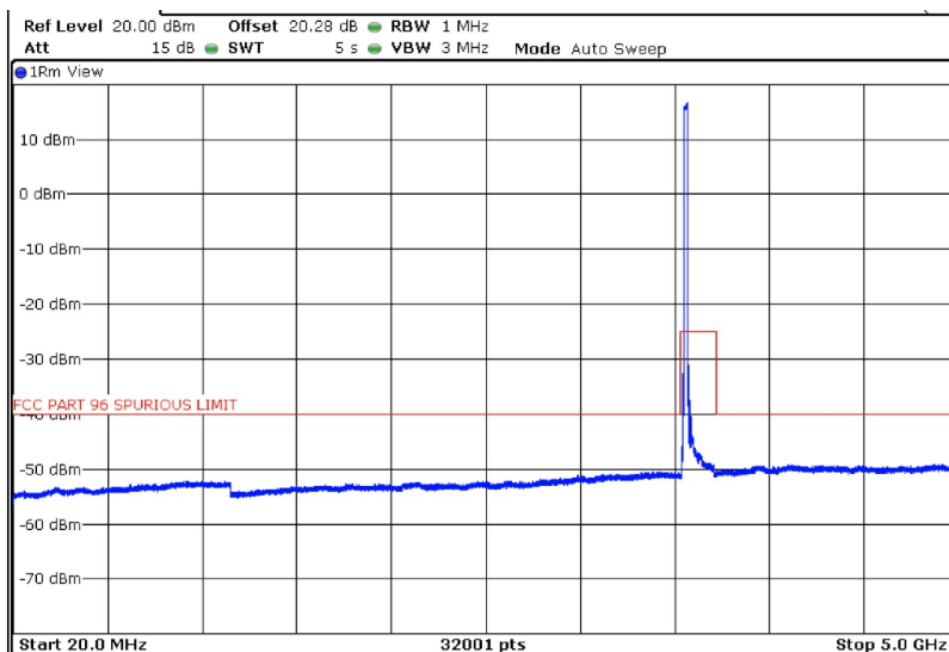
FREQUENCY RANGE 21-37 GHz



20 MHz BW

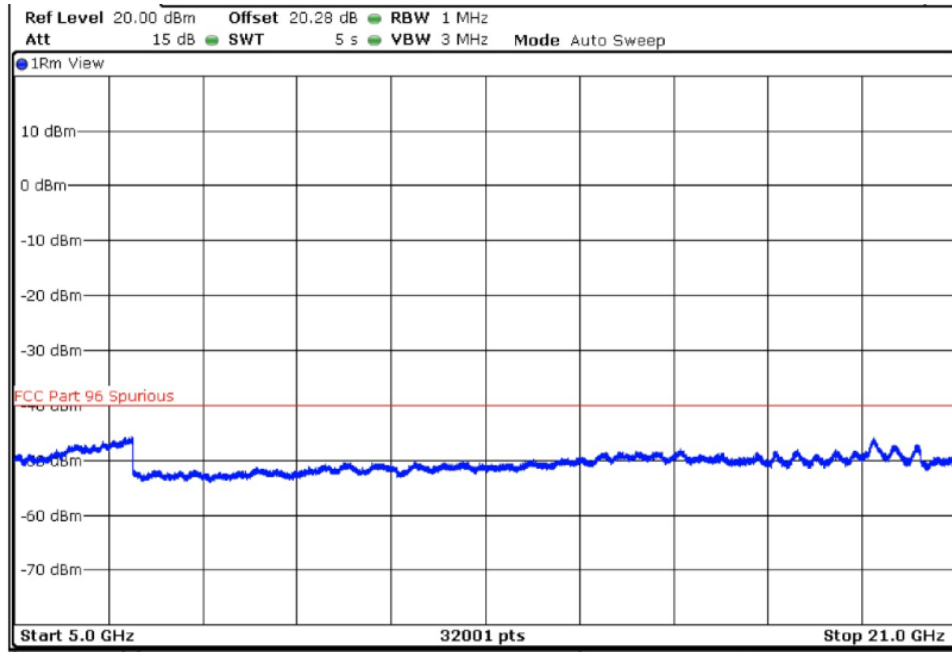
Lowest Channel (3560 MHz)

FREQUENCY RANGE 20 MHz-5 GHz

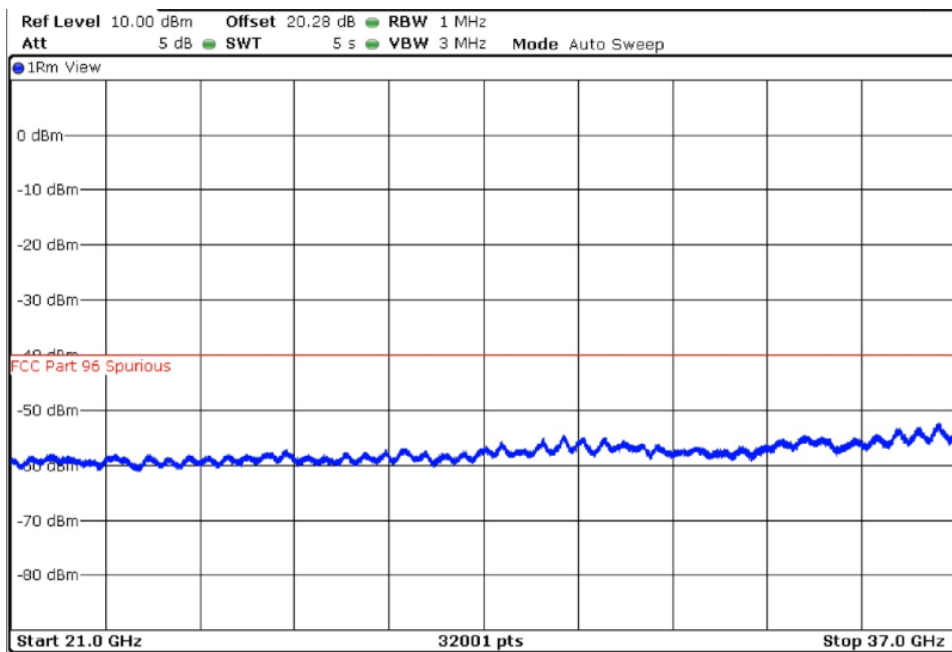


TEST RESULTS (Cont.):

FREQUENCY RANGE 5-21 GHz



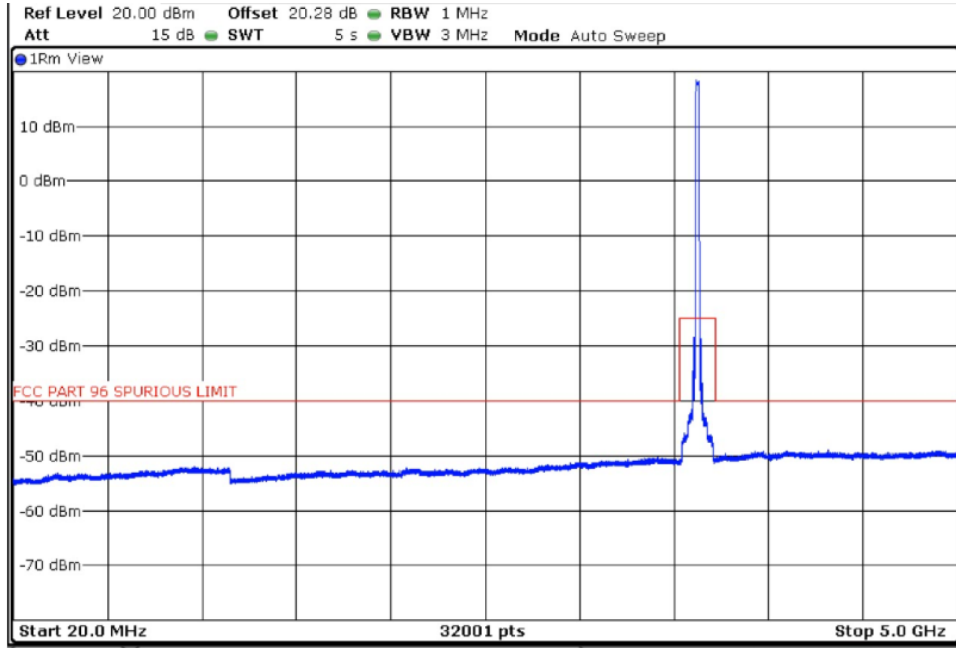
FREQUENCY RANGE 21-37 GHz



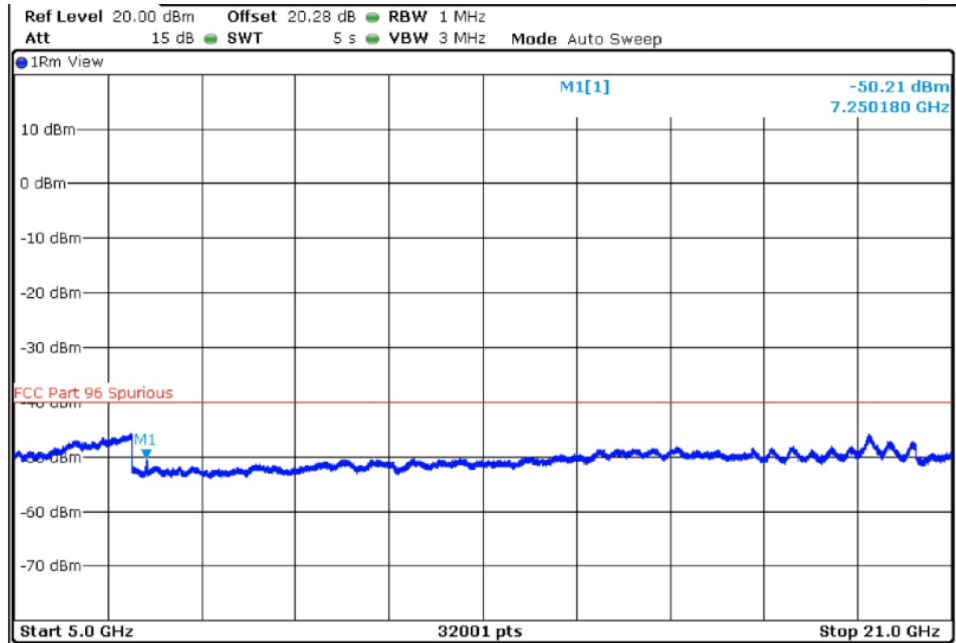
TEST RESULTS (Cont.):

Middle Channel (3625 MHz)

FREQUENCY RANGE 20 MHz-5 GHz

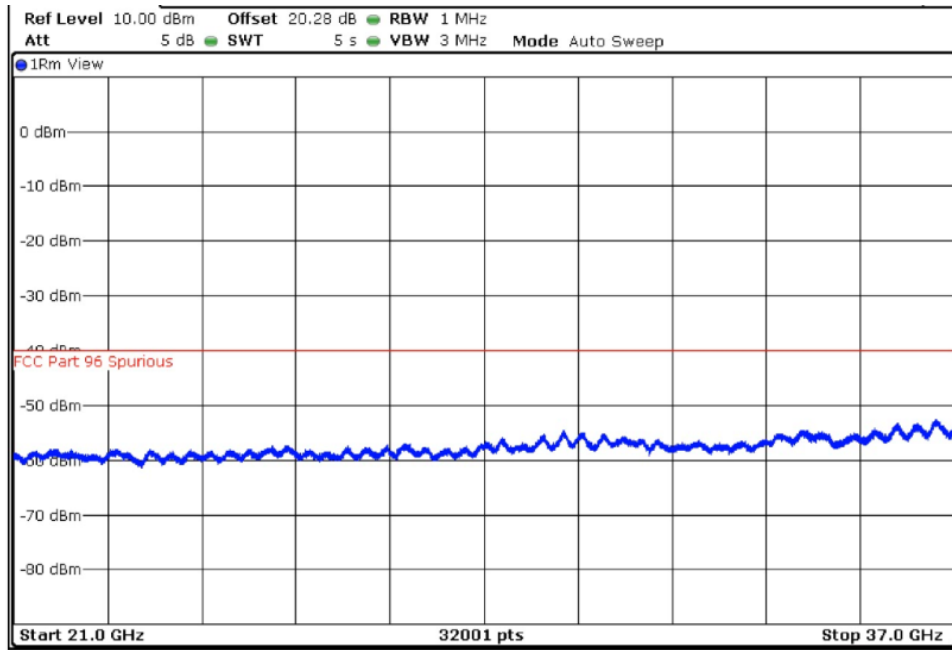


FREQUENCY RANGE 5-21 GHz



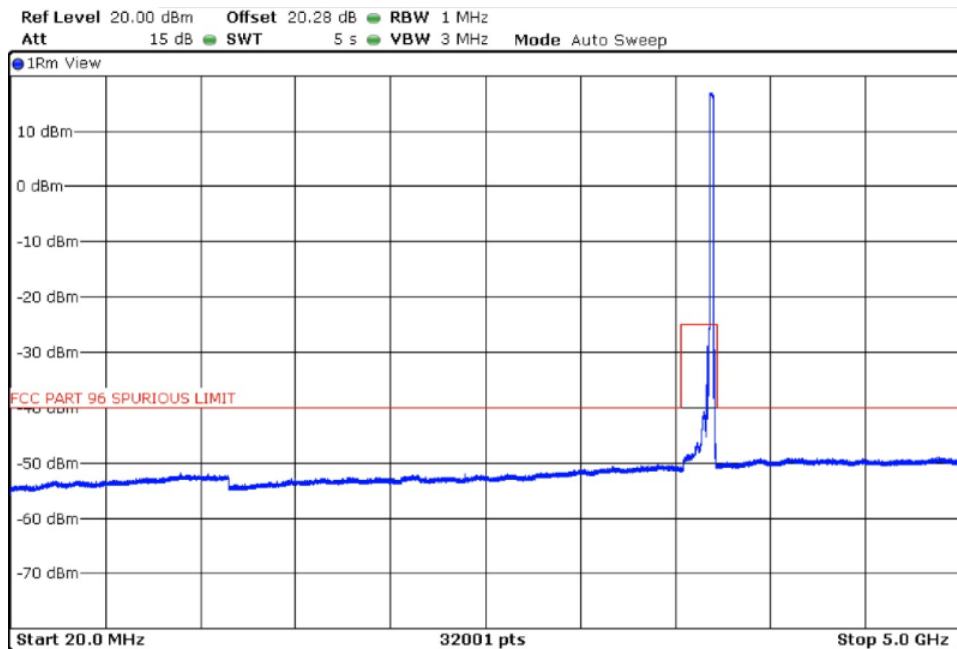
TEST RESULTS (Cont.):

FREQUENCY RANGE 21-37 GHz



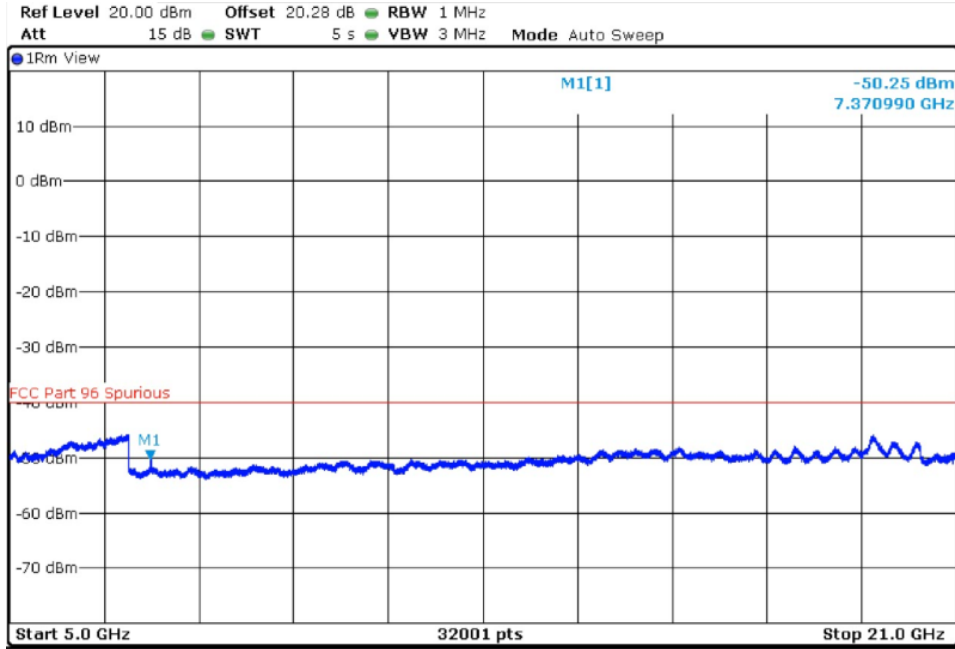
Highest Channel (3690 MHz)

FREQUENCY RANGE 20 MHz-5 GHz

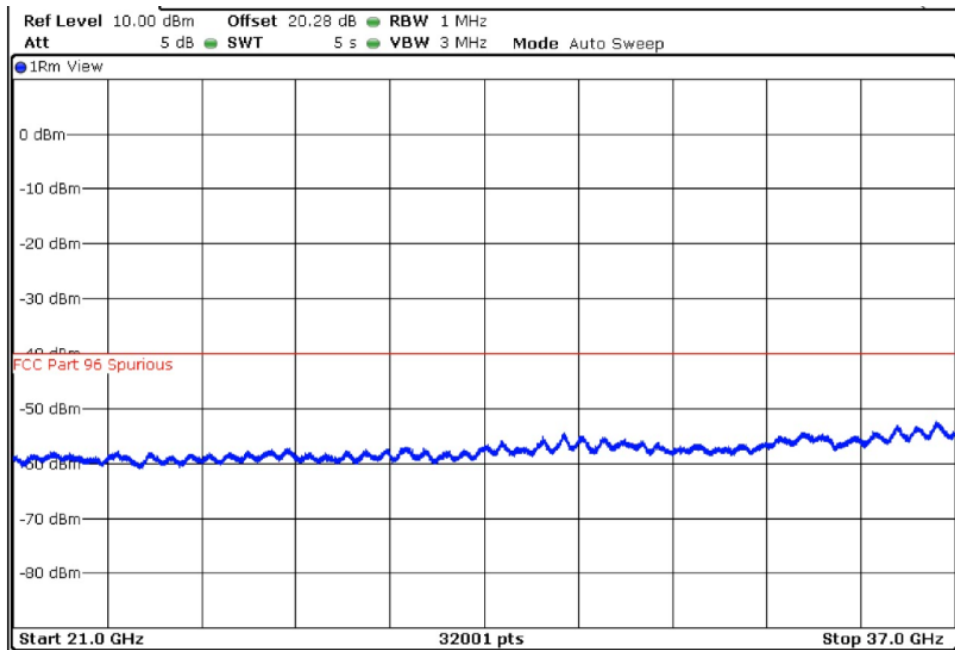


TEST RESULTS (Cont.):

FREQUENCY RANGE 5-21 GHz



FREQUENCY RANGE 21-37 GHz



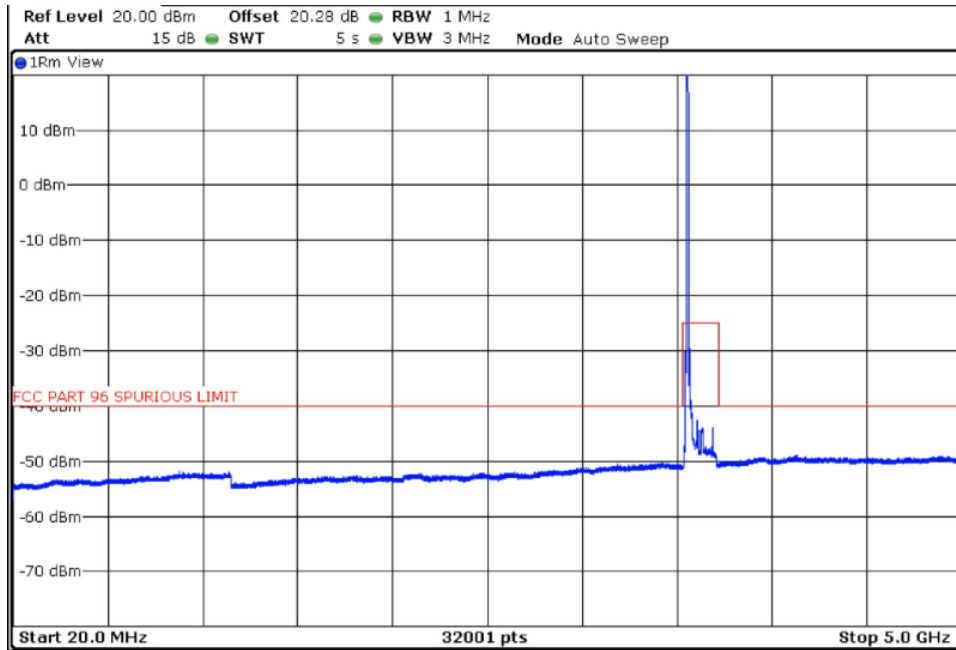
TEST RESULTS (Cont.):

Port 3

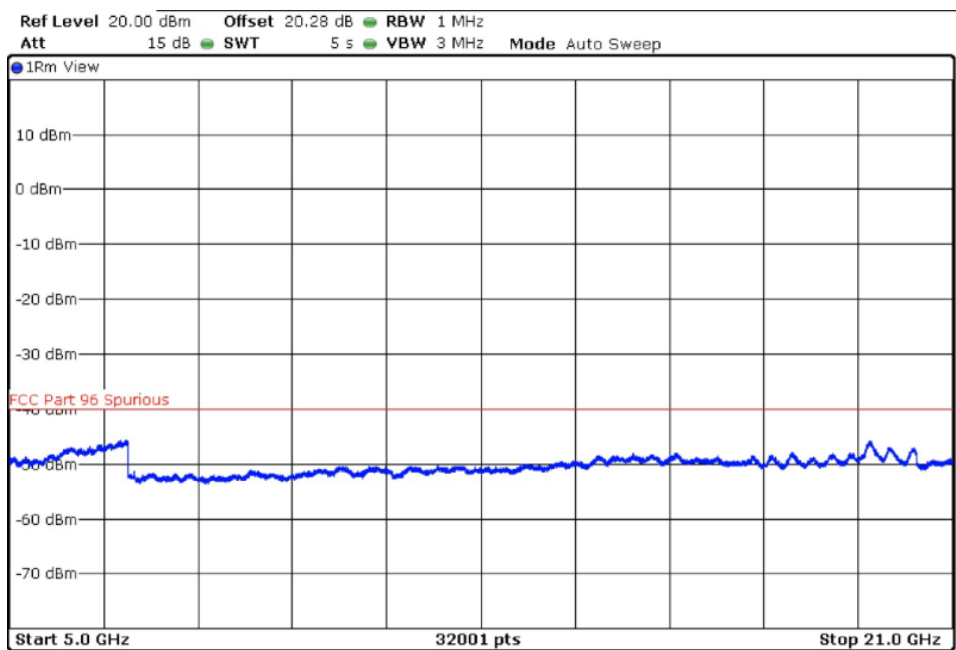
10MHz BW

Lowest Channel (3555 MHz)

FREQUENCY RANGE 20 MHz-5 GHz

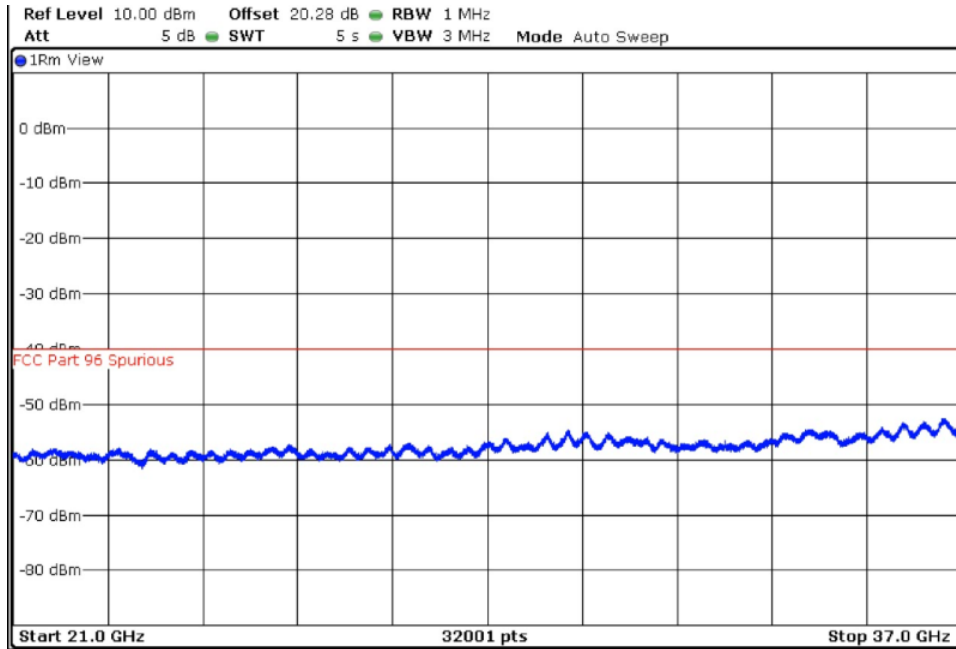


FREQUENCY RANGE 5-21 GHz



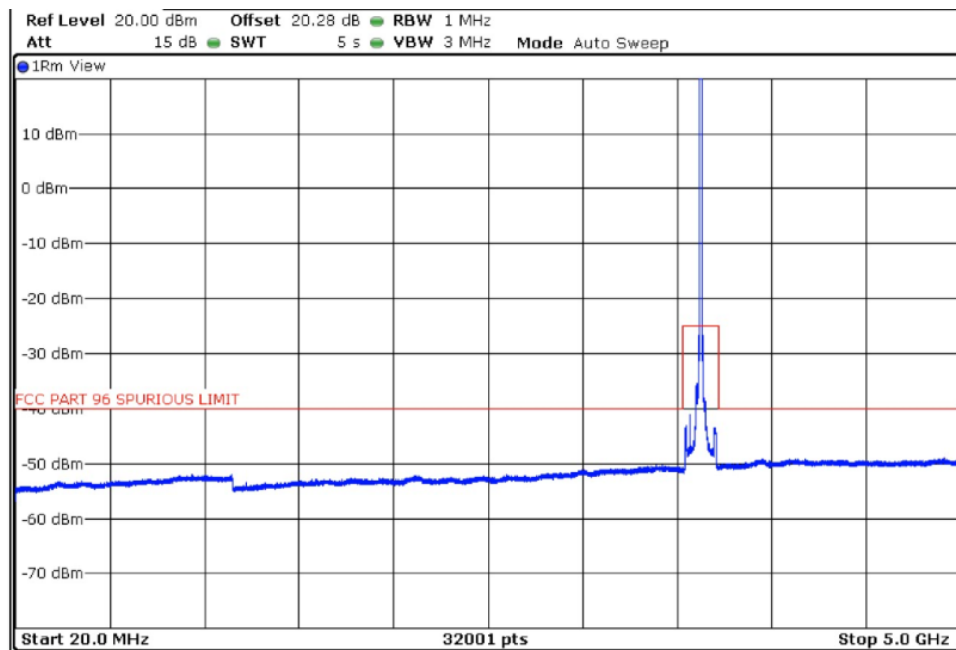
TEST RESULTS (Cont.):

FREQUENCY RANGE 21-37 GHz



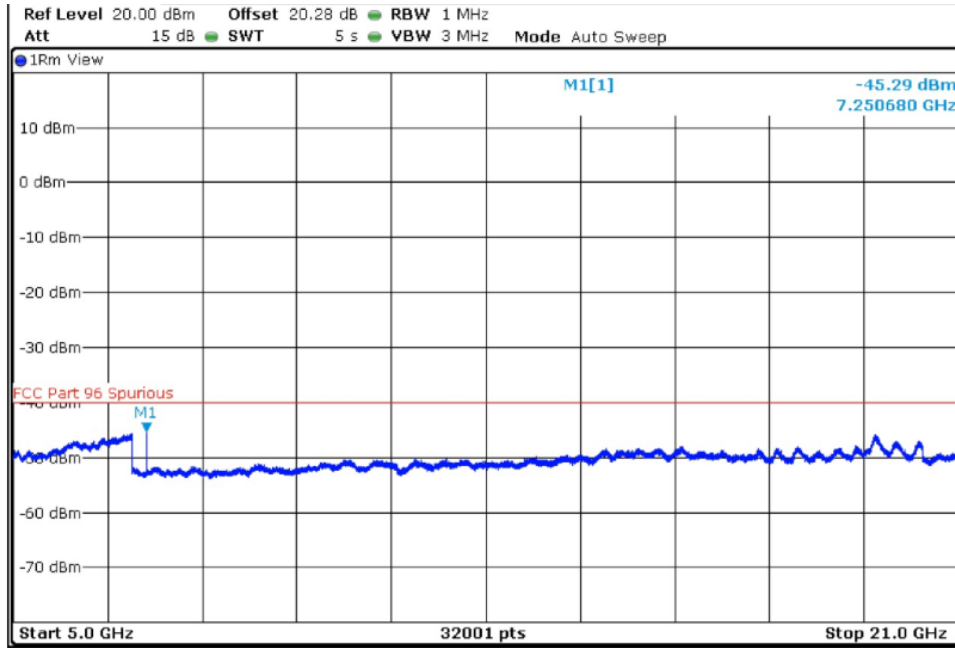
Middle Channel (3625 MHz)

FREQUENCY RANGE 20 MHz-5 GHz

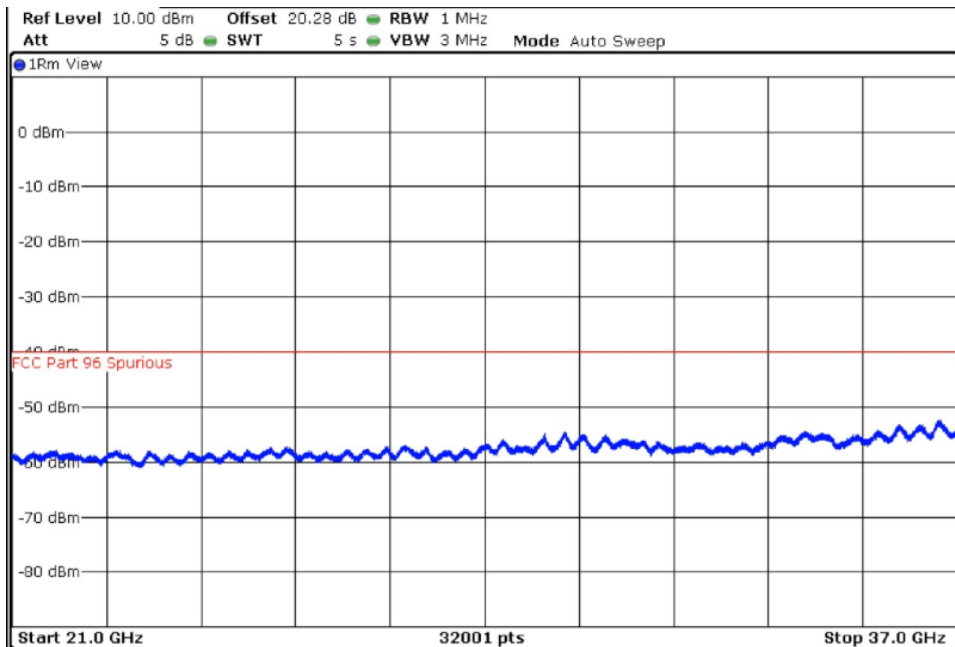


TEST RESULTS (Cont.):

FREQUENCY RANGE 5-21 GHz



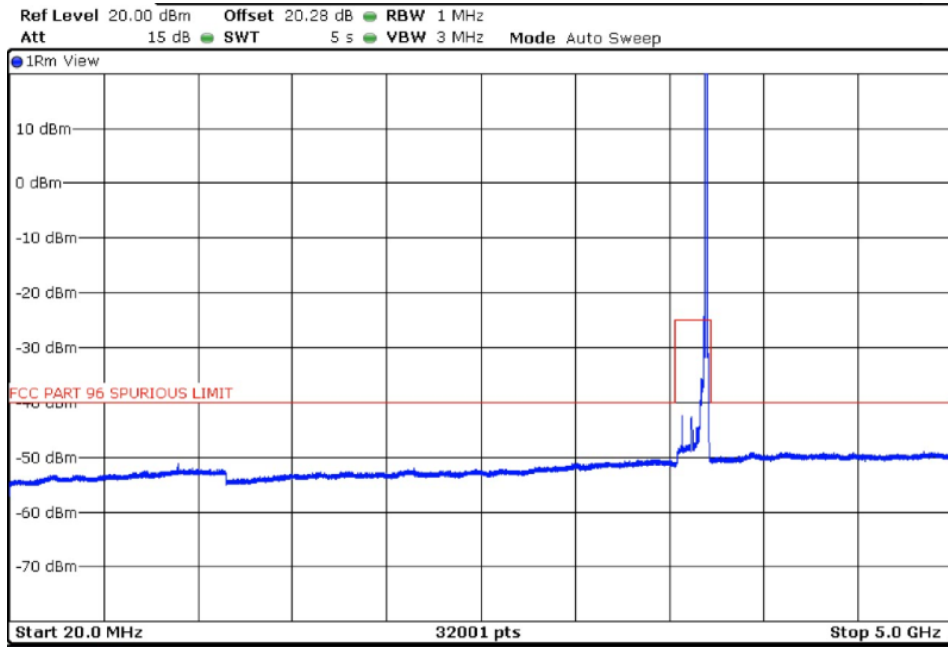
FREQUENCY RANGE 21-37 GHz



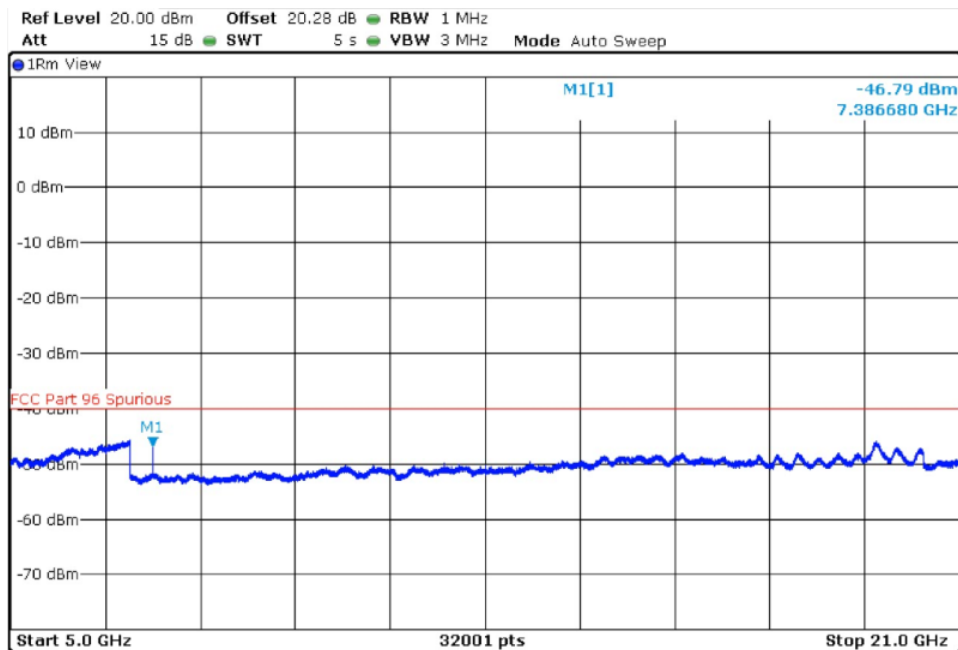
TEST RESULTS (Cont.):

Highest Channel (3695 MHz)

FREQUENCY RANGE 20 MHz-5 GHz

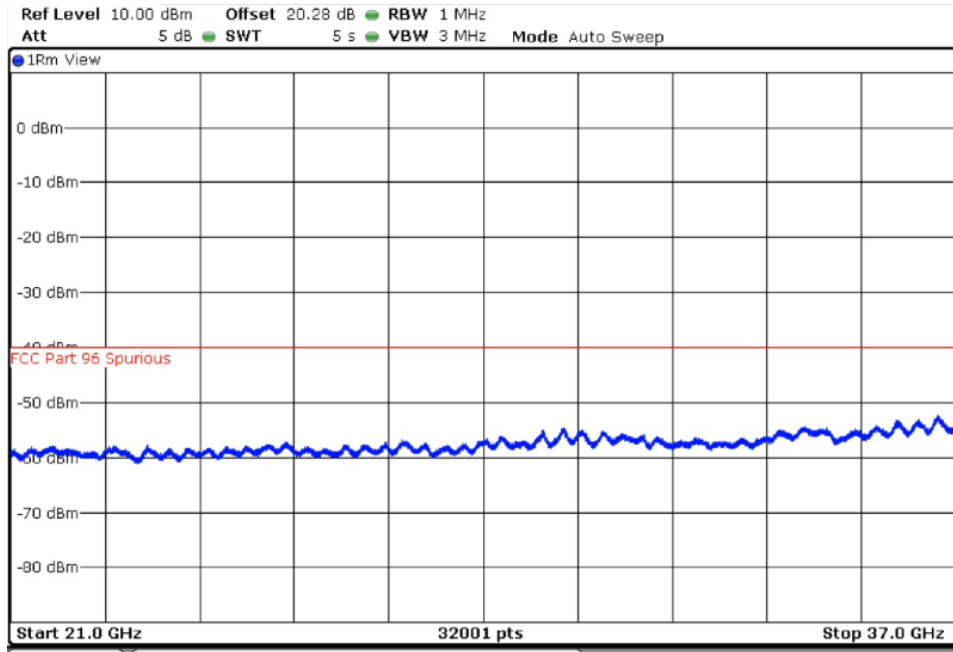


FREQUENCY RANGE 5-21 GHz



TEST RESULTS (Cont.):

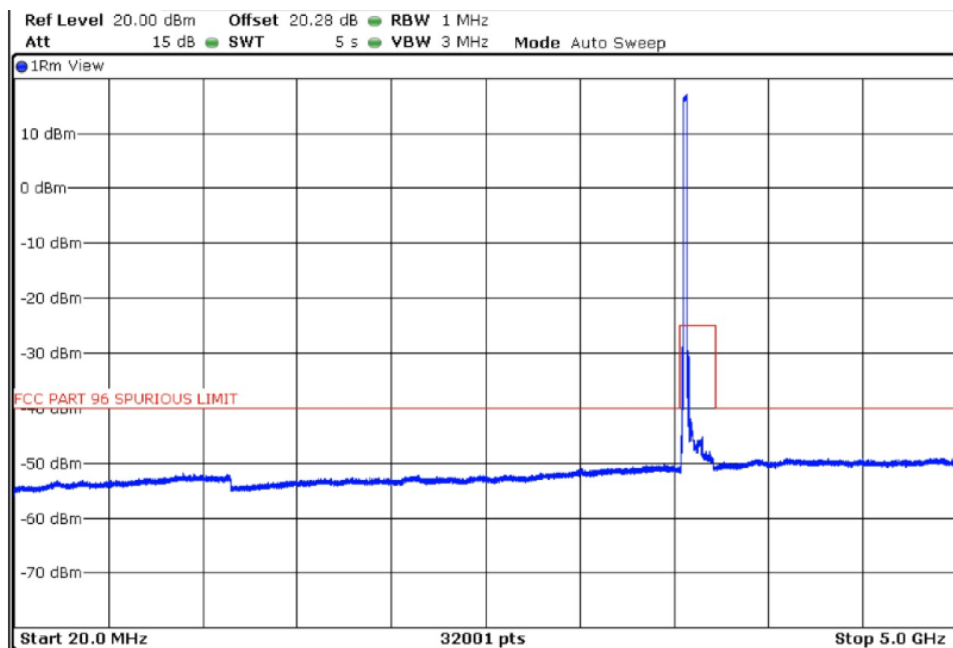
FREQUENCY RANGE 21-37 GHz



20 MHz BW

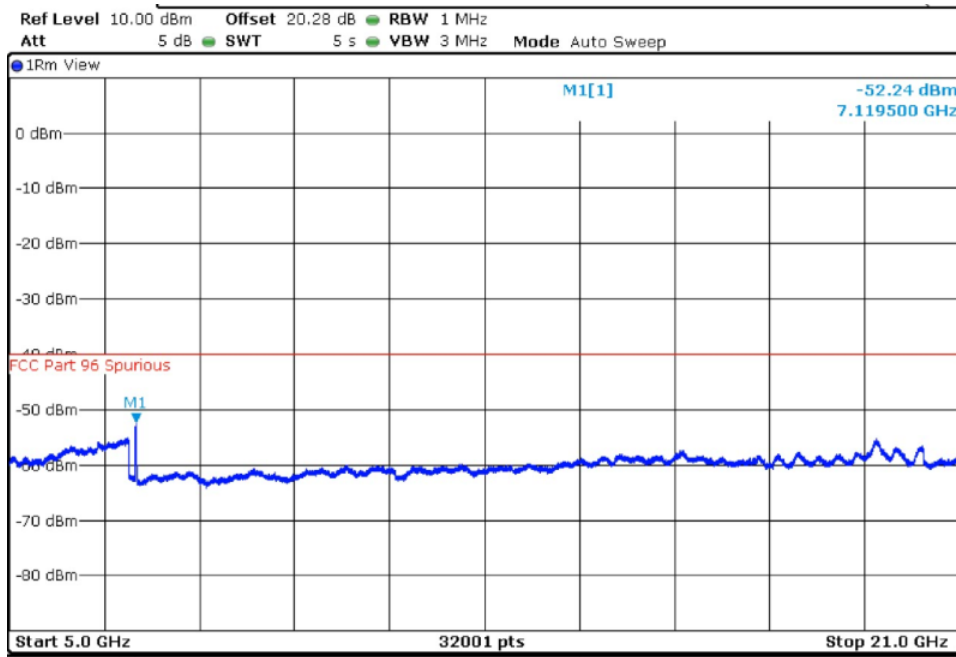
Lowest Channel (3560 MHz)

FREQUENCY RANGE 20 MHz-5 GHz

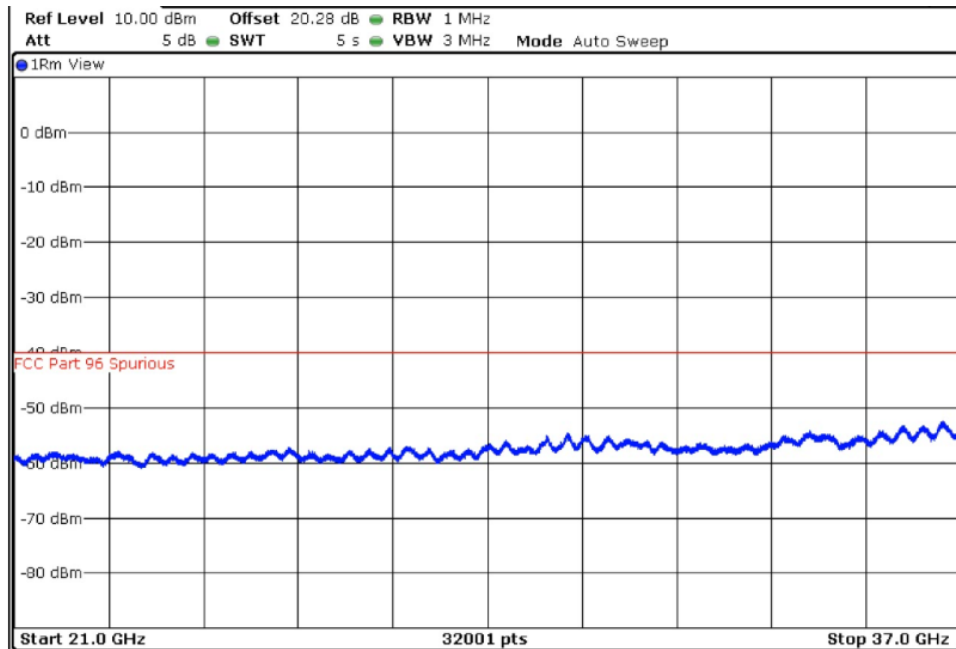


TEST RESULTS (Cont.):

FREQUENCY RANGE 5-21 GHz



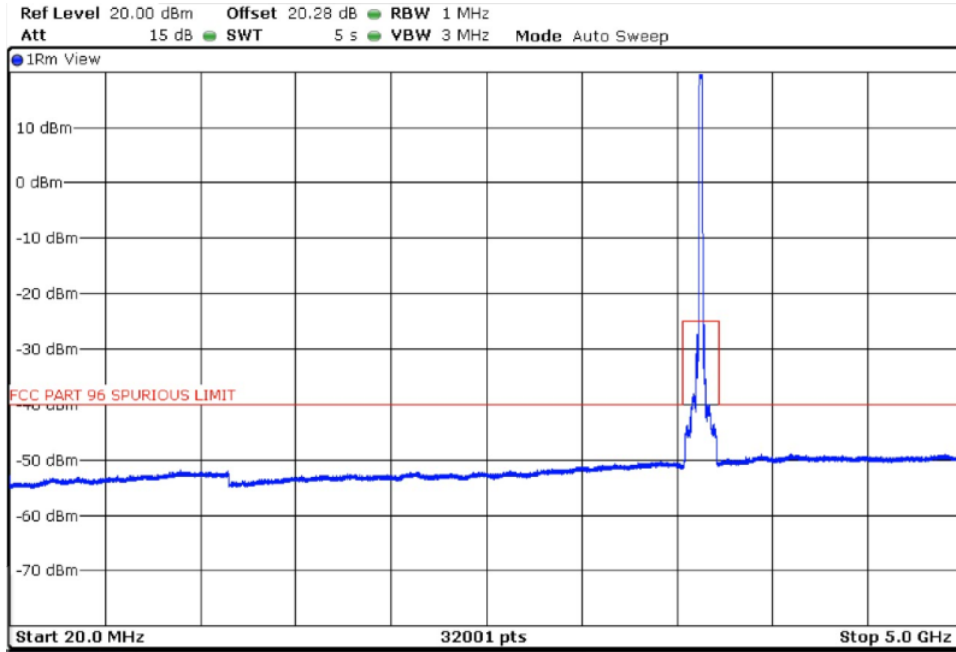
FREQUENCY RANGE 21-37 GHz



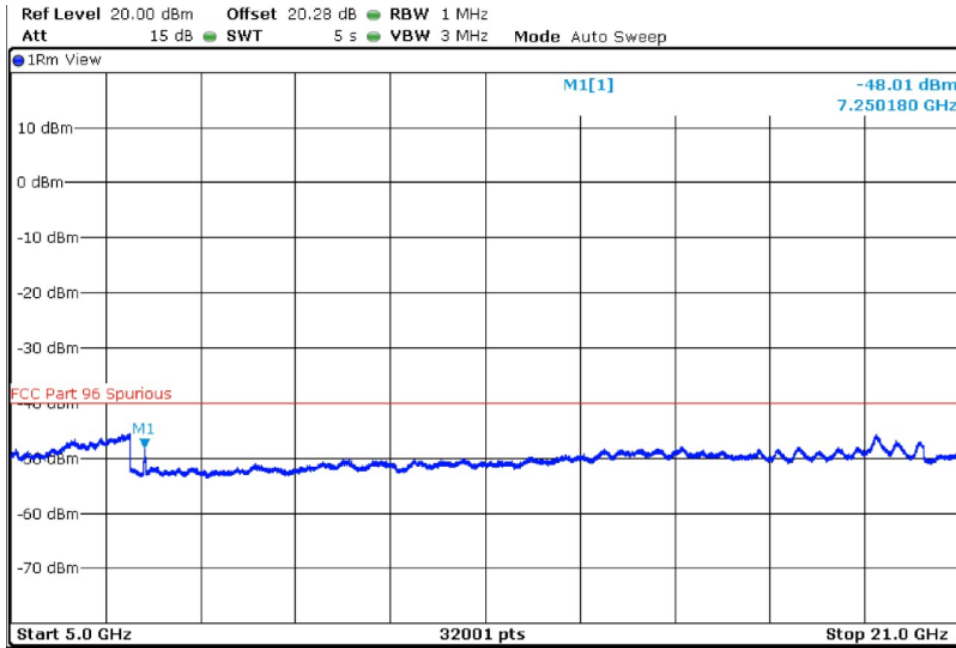
TEST RESULTS (Cont.):

Middle Channel (3625 MHz)

FREQUENCY RANGE 20 MHz-5 GHz

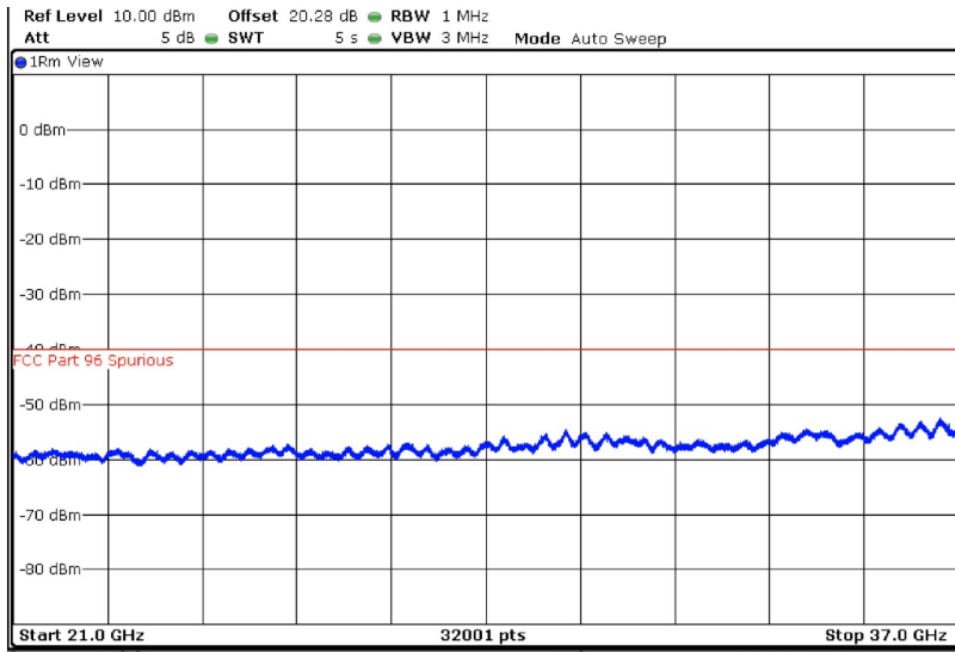


FREQUENCY RANGE 5-21 GHz



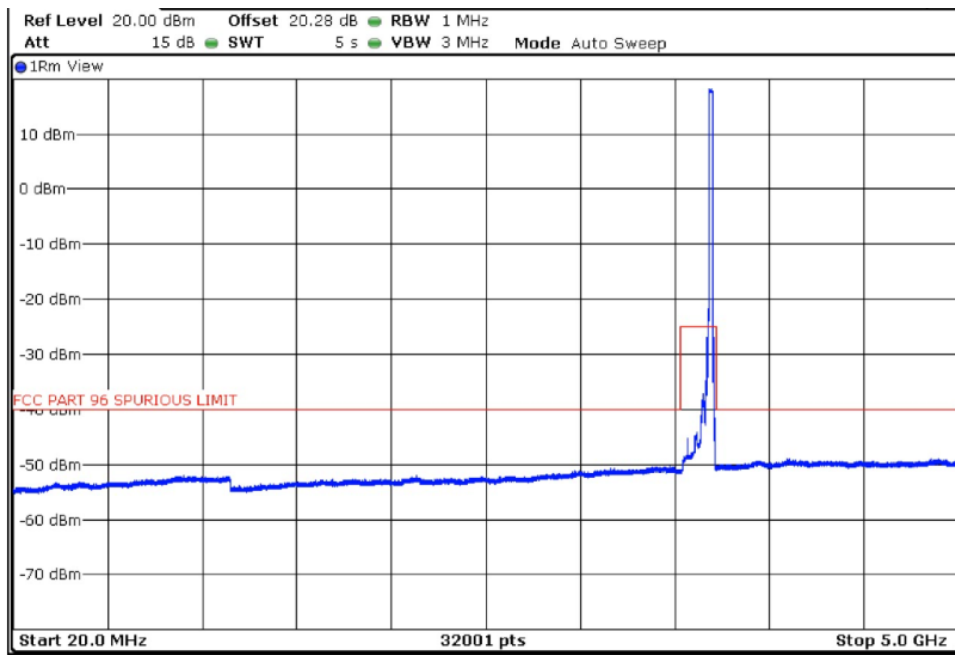
TEST RESULTS (Cont.):

FREQUENCY RANGE 21-37 GHz



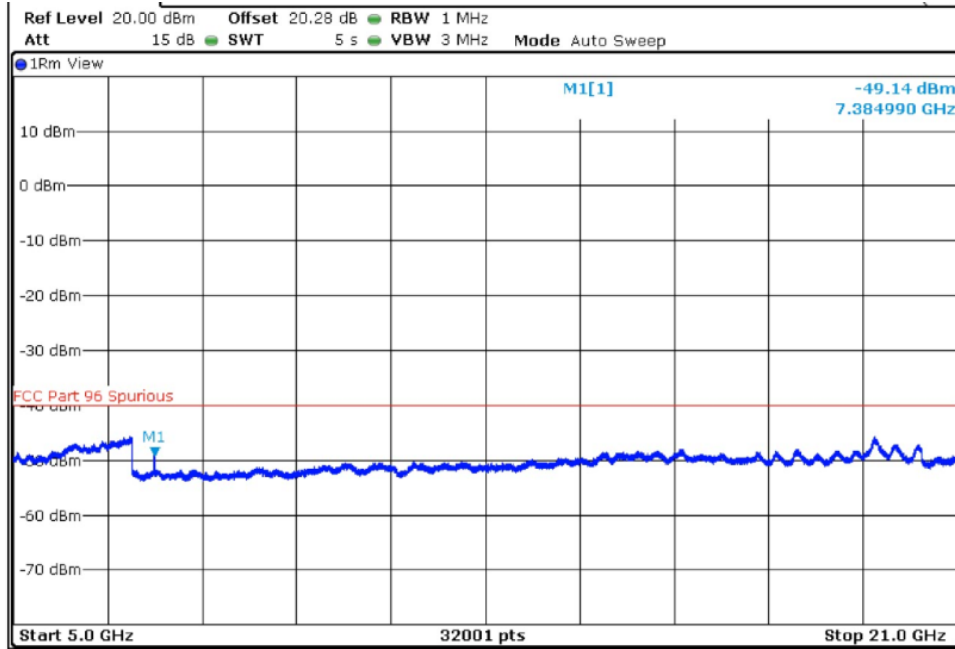
Highest Channel (3690 MHz)

FREQUENCY RANGE 20 MHz-5 GHz

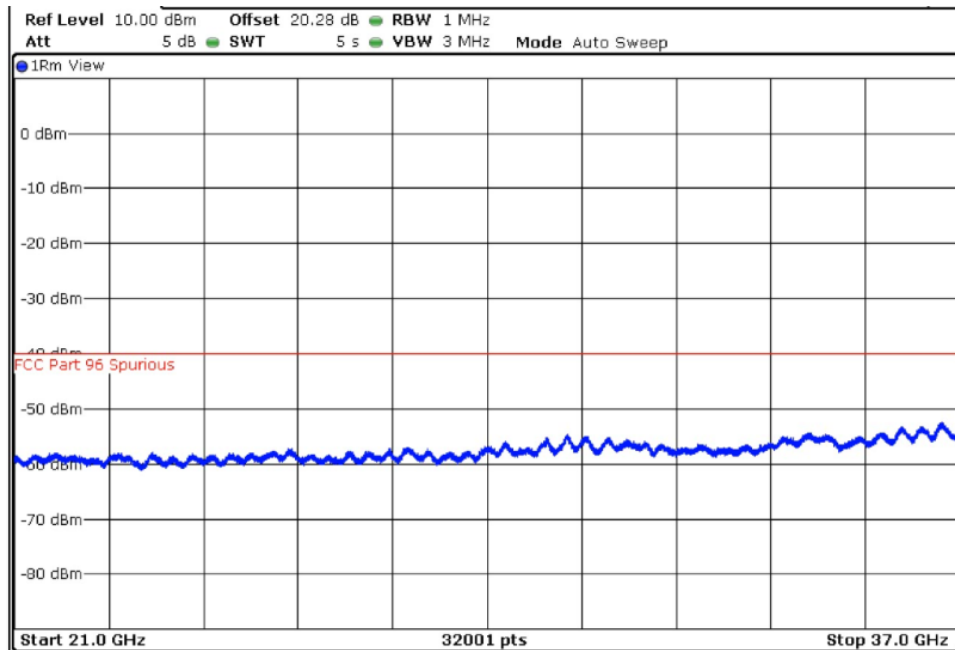


TEST RESULTS (Cont.):

FREQUENCY RANGE 5-21 GHz



FREQUENCY RANGE 21-37 GHz



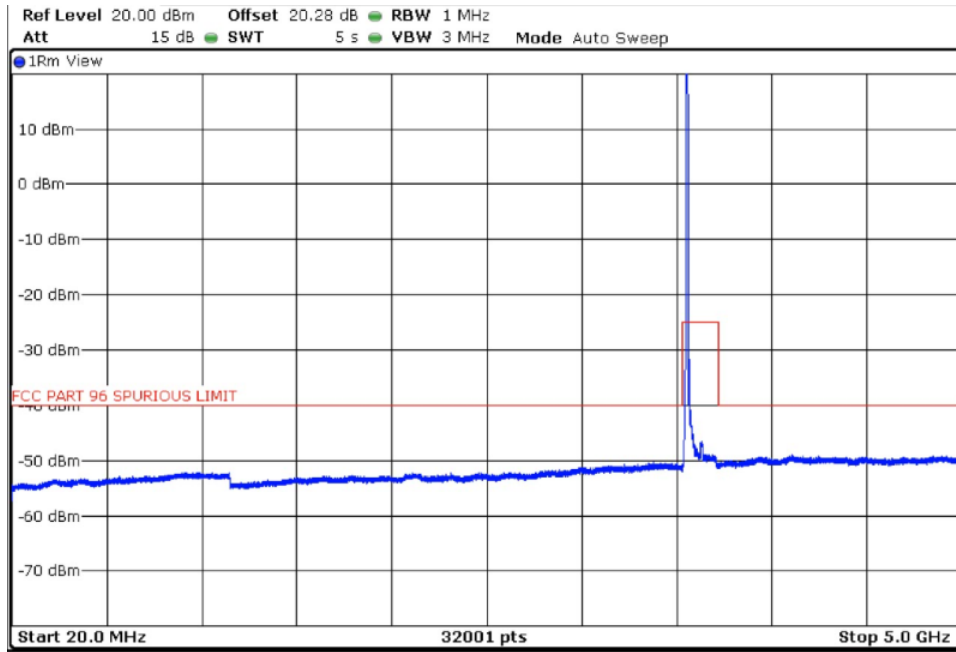
TEST RESULTS (Cont.):

Port 4

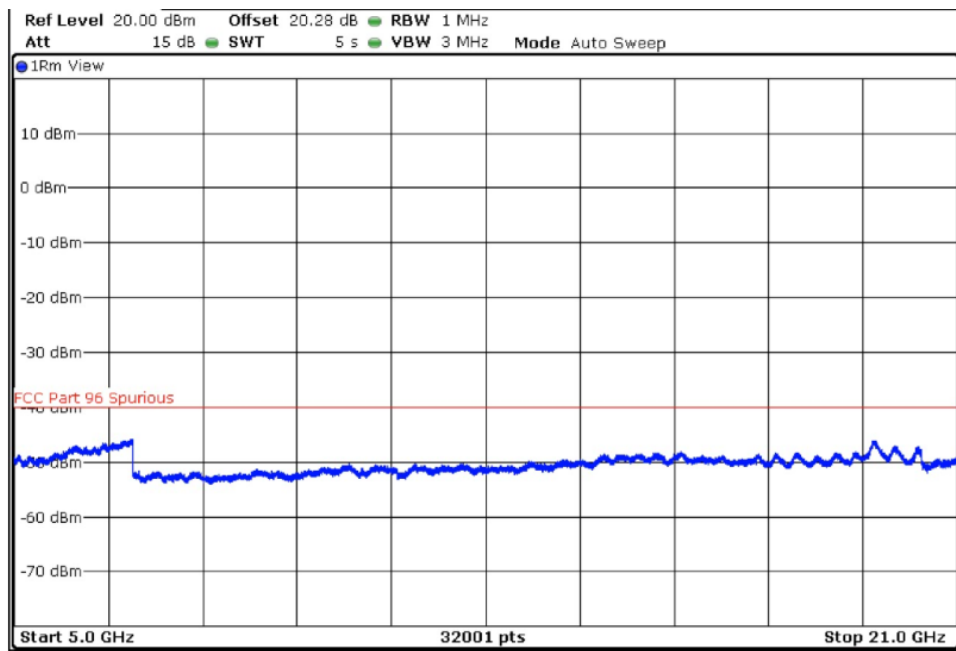
10MHz BW

Lowest Channel (3555 MHz)

FREQUENCY RANGE 20 MHz-5 GHz

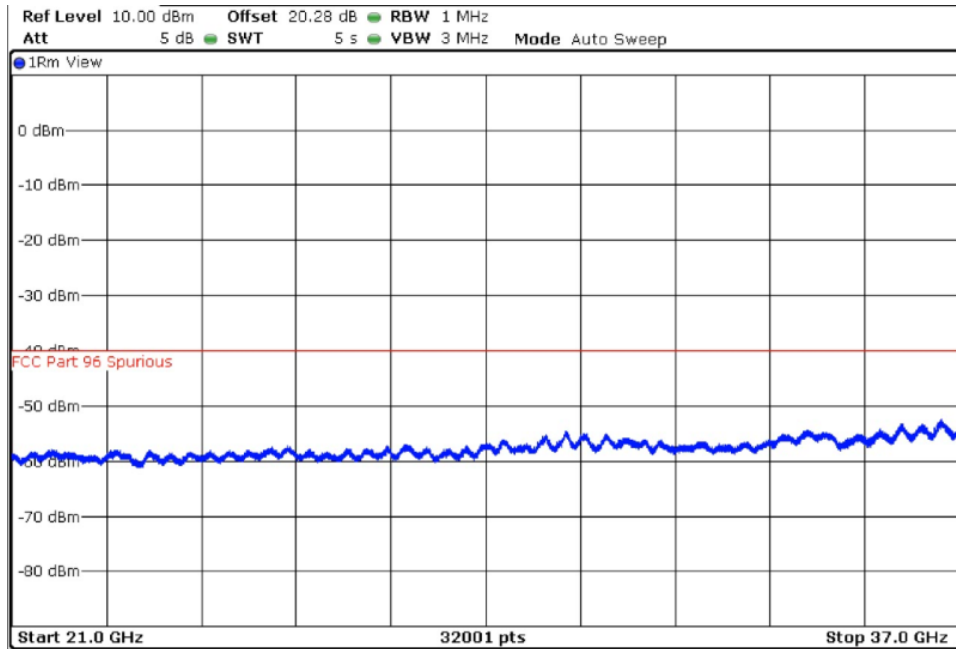


FREQUENCY RANGE 5-21 GHz



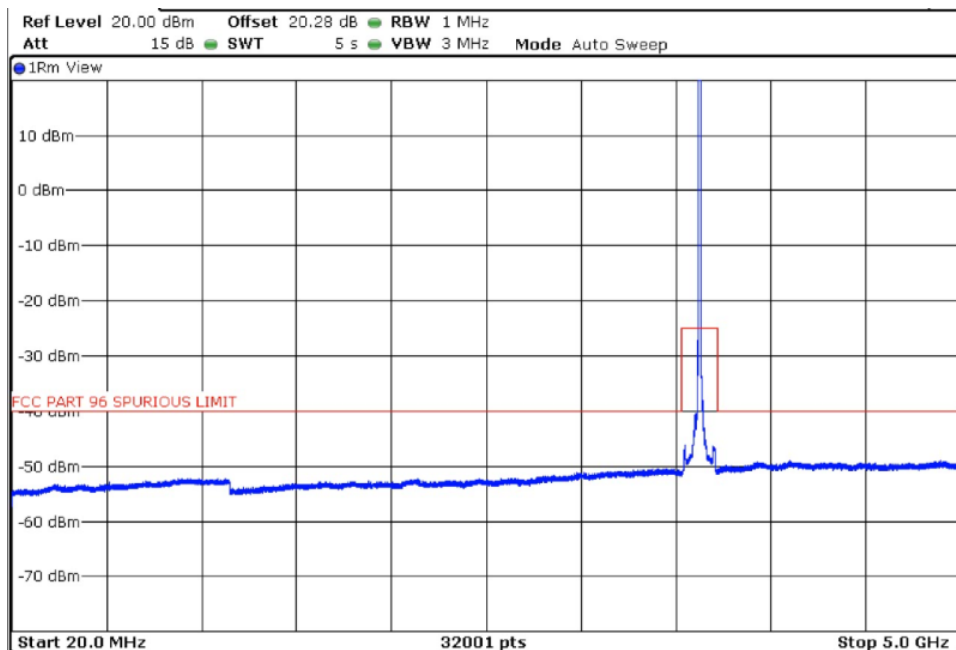
TEST RESULTS (Cont.):

FREQUENCY RANGE 21-37 GHz



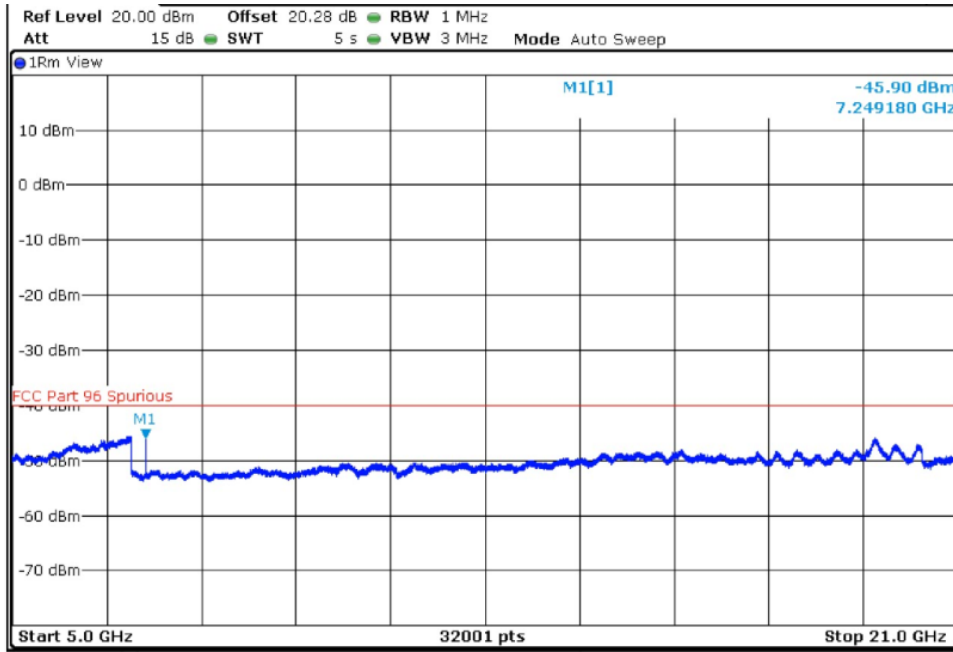
Middle Channel (3625 MHz)

FREQUENCY RANGE 20 MHz-5 GHz

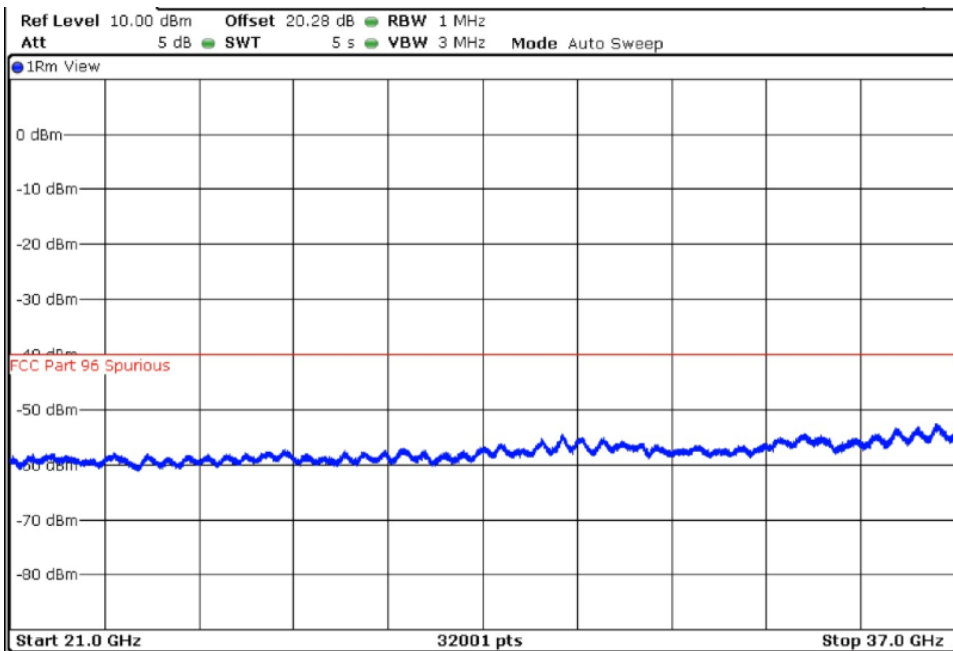


TEST RESULTS (Cont.):

FREQUENCY RANGE 5-21 GHz



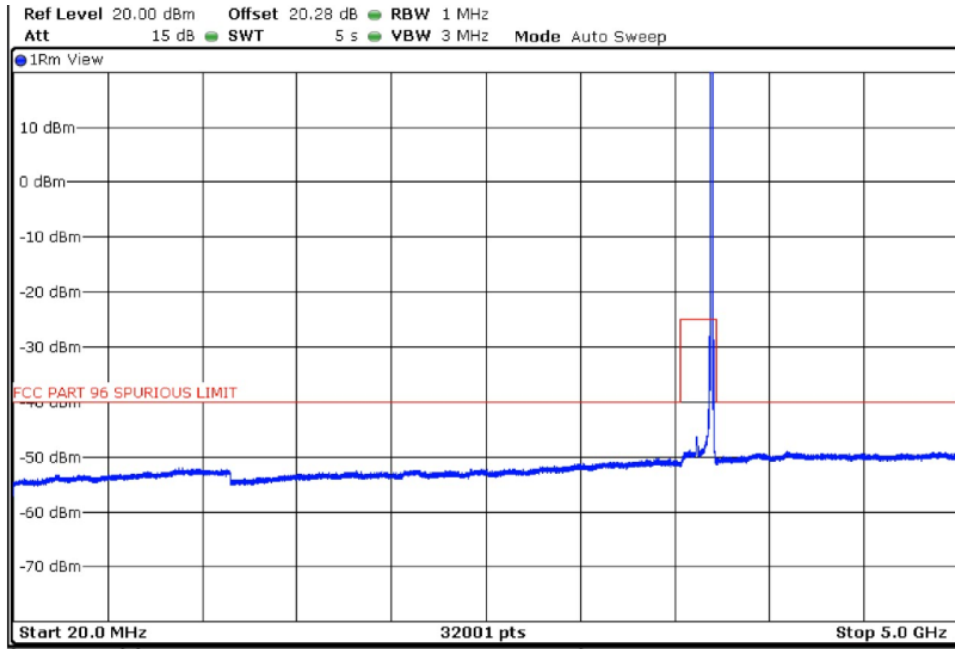
FREQUENCY RANGE 21-37 GHz



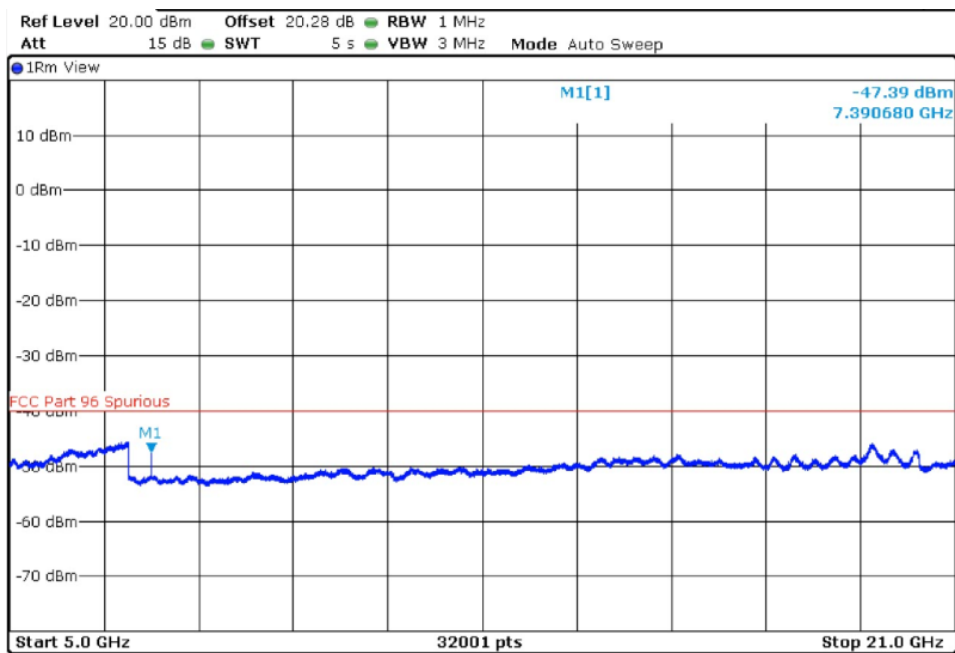
TEST RESULTS (Cont.):

Highest Channel (3695 MHz)

FREQUENCY RANGE 20 MHz-5 GHz

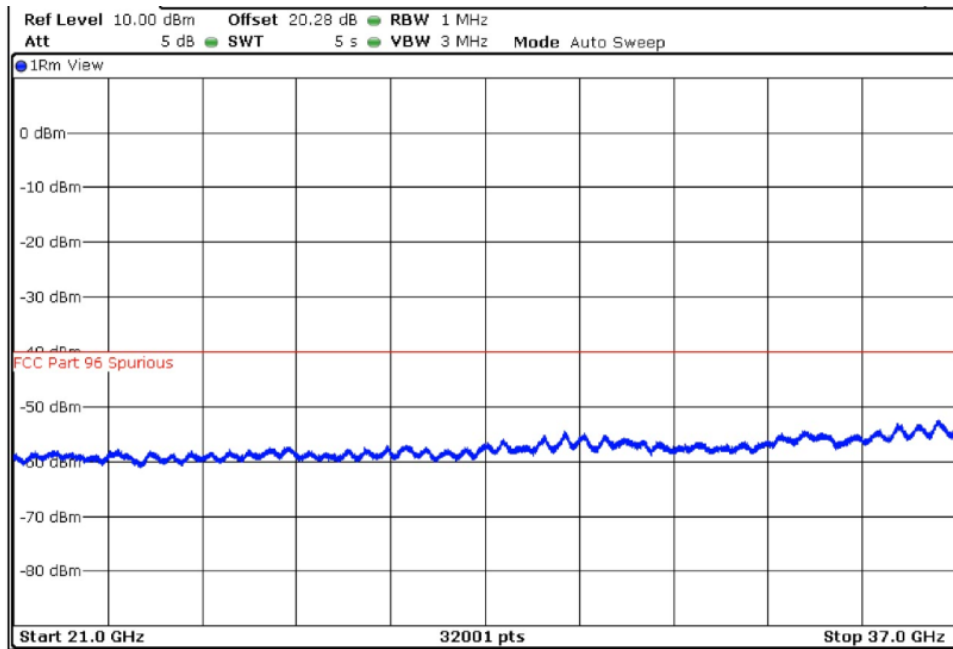


FREQUENCY RANGE 5-21 GHz



TEST RESULTS (Cont.):

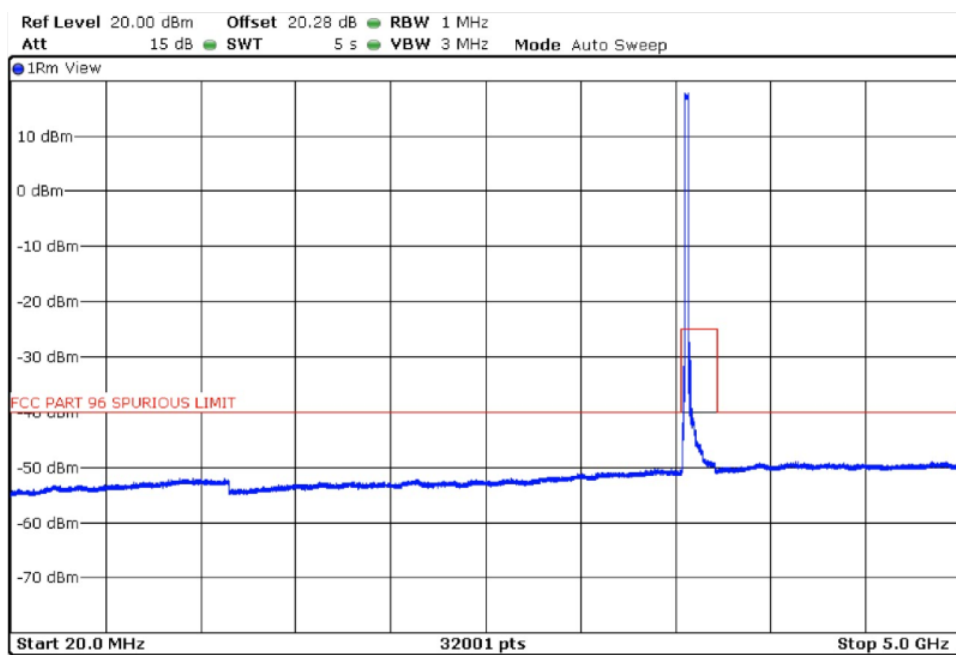
FREQUENCY RANGE 21-37 GHz



20 MHz BW

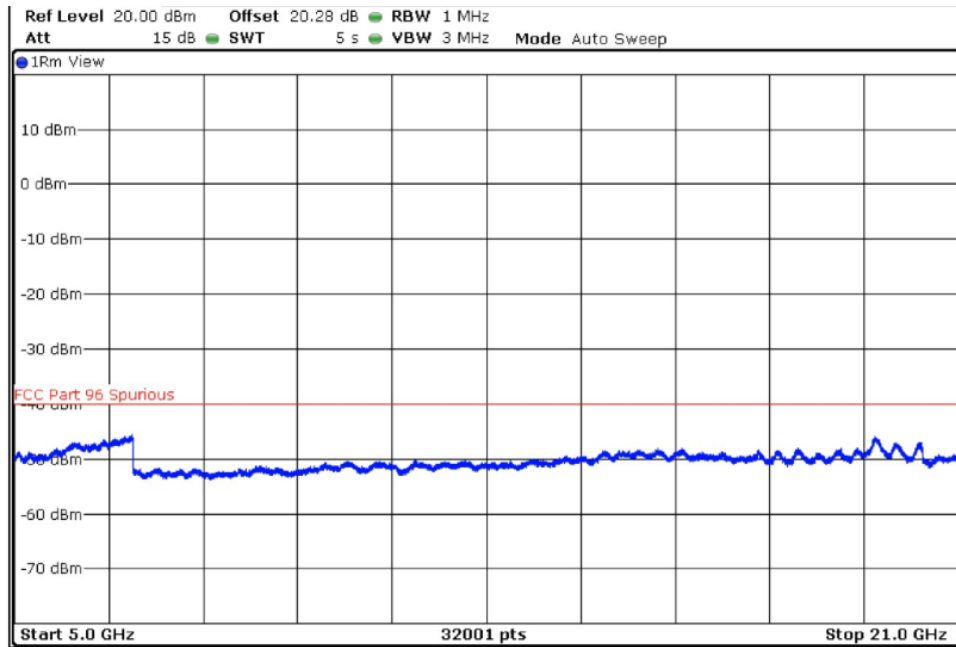
Lowest Channel (3560 MHz)

FREQUENCY RANGE 20 MHz-5 GHz

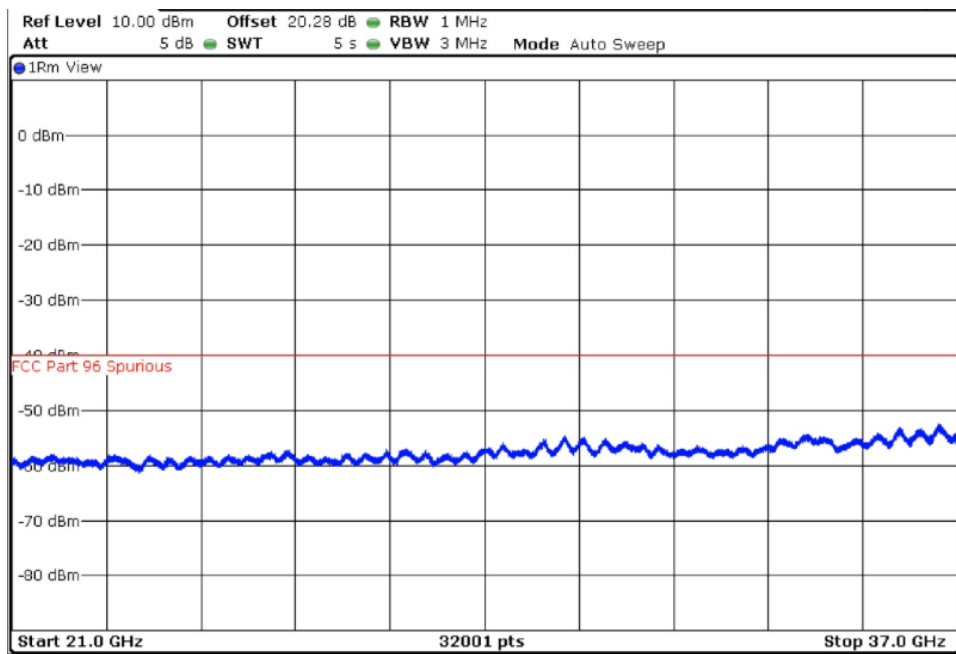


TEST RESULTS (Cont.):

FREQUENCY RANGE 5-21 GHz



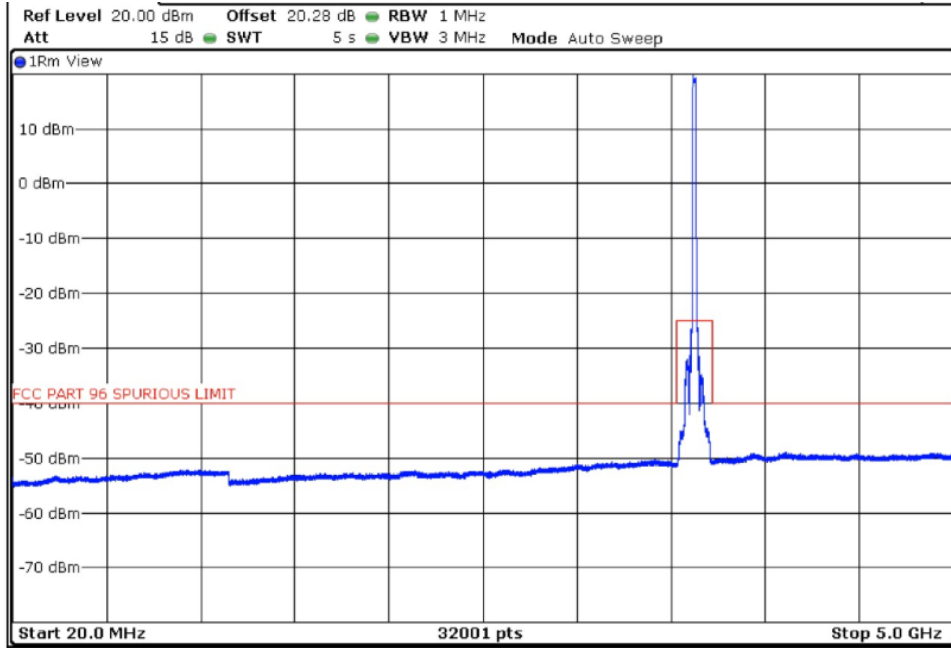
FREQUENCY RANGE 21-37 GHz



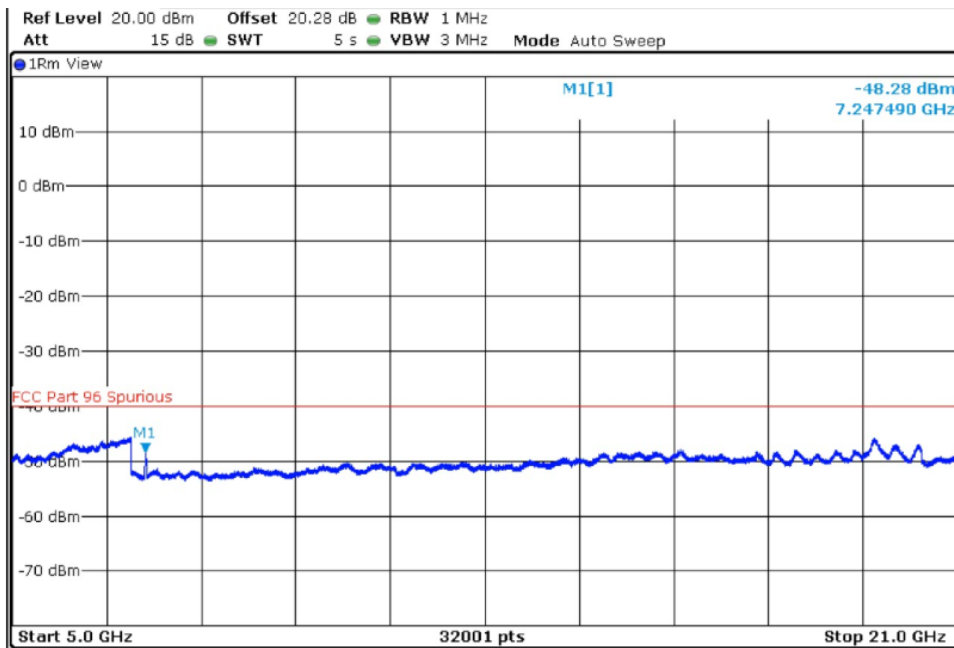
TEST RESULTS (Cont.):

Middle Channel (3625 MHz)

FREQUENCY RANGE 20 MHz-5 GHz

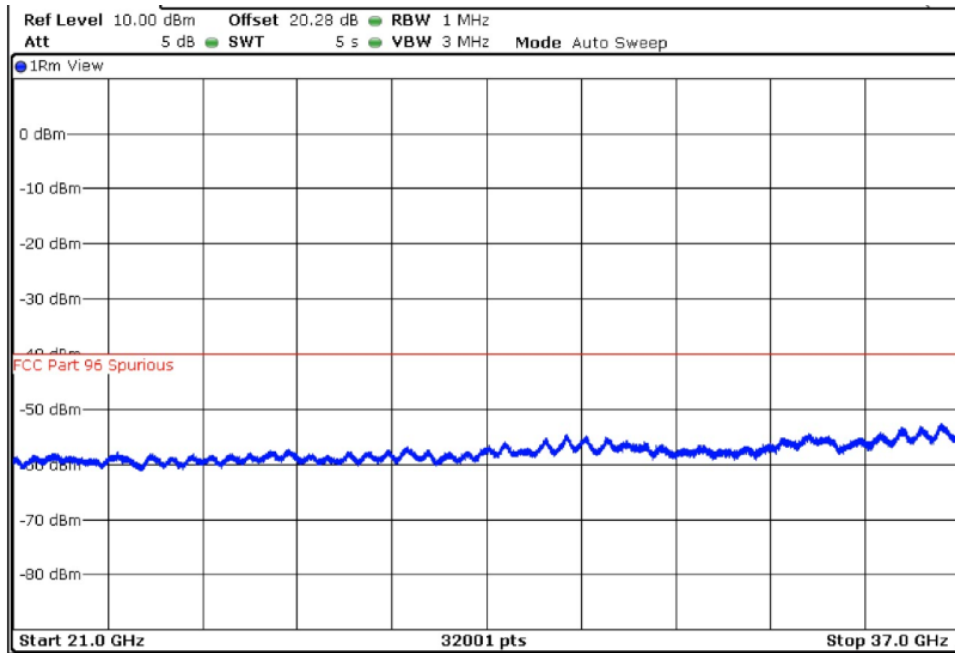


FREQUENCY RANGE 5-21 GHz



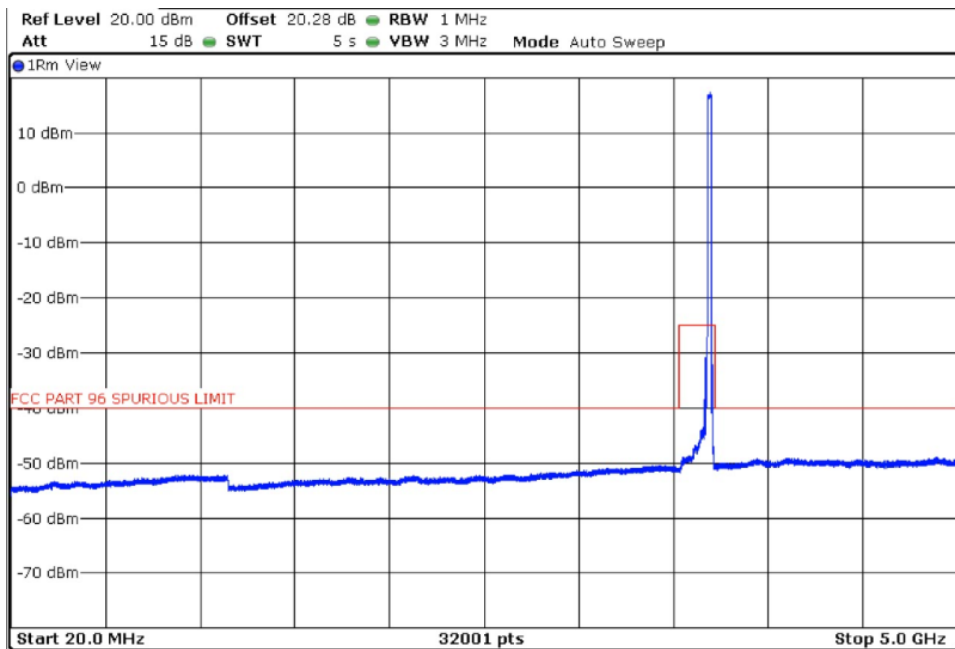
TEST RESULTS (Cont.):

FREQUENCY RANGE 21-37 GHz



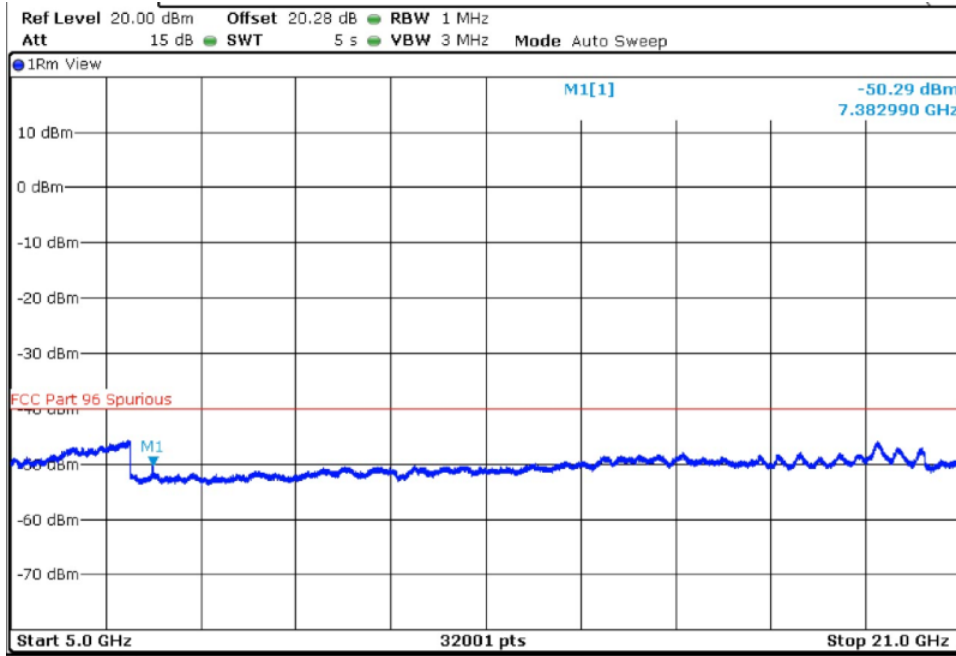
Highest Channel (3690 MHz)

FREQUENCY RANGE 20 MHz-5 GHz

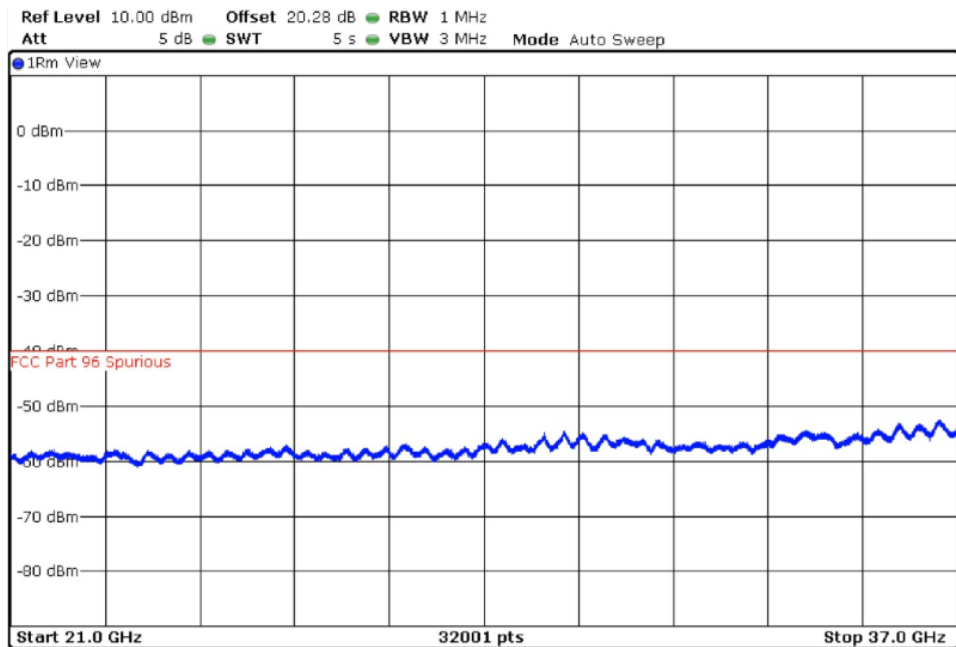


TEST RESULTS (Cont.):

FREQUENCY RANGE 5-21 GHz



FREQUENCY RANGE 21-37 GHz



TEST A.8: RADIATED SPURIOUS EMISSION

LIMITS:	Product standard:	Part 2.1053
	Test standard:	ANSI C63.26-2015

LIMITS

Measurements shall be made to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of installation and operation.

Curves or equivalent data shall be supplied showing the magnitude of each harmonic and other spurious emission. For this test, single sideband, independent sideband, and controlled carrier transmitters shall be modulated under the conditions specified in paragraph (c) of § 2.1049, as appropriate.

The limits for radiated emissions are stated below.

- greater than 10 MHz above and below the assigned channel $\leq 70.2 \text{ dB}\mu\text{V/m}$ (-25 dBm/MHz: conducted limit)
- any emission below 3530 MHz and above 3720 MHz $\leq 55.2 \text{ dB}\mu\text{V/m}$ (-40 dBm/MHz: conducted limit)

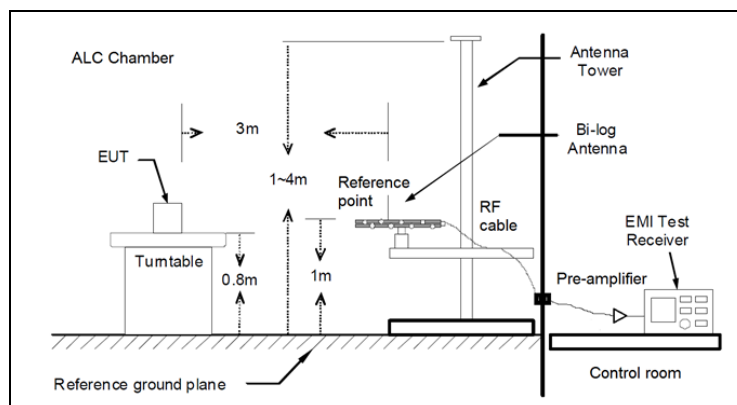
TEST SETUP

All radiated tests were performed in a semi-anechoic chamber. The measurement antenna is situated at 3 m for the frequency range 30-1000 MHz (Bi-log antenna) and at 1m for the frequency range 1-40 GHz (1 GHz-18 GHz and 18 GHz-40 GHz Double ridge horn antennas).

For radiated emissions in the range 1-40 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance

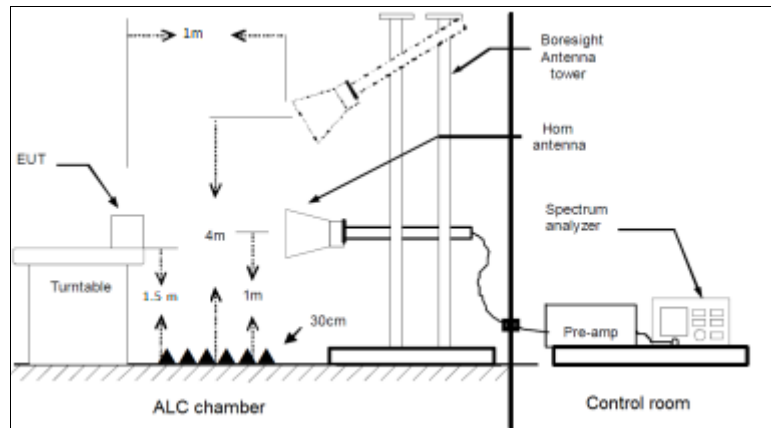
Detected emissions were maximized at each frequency by rotating the EUT and adjusting the measuring antenna height and polarization. The maximum meter reading was recorded. The radiated emissions were measured with RMS detector.

Radiated measurements Setup $f < 1 \text{ GHz}$



TEST SETUP (Cont.)

Radiated measurements setup $f > 1$ GHz



The following duty cycle correction was added in RF level offset to get the accurate measured emission level in the average power measurement.

The duty cycle correction = $10 \log (1/0.68) = 1.67$ (dB)

The following measurements were performed when two ports transmitting at the same time in 2X2 MIMO mode as well as four ports transmitting the two different carriers. The spurious emissions plots of worst cases are shown below.

TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#01 (Band 48)
TEST RESULTS:	PASS

Frequency range 30 MHz – 1000 MHz Port 1 and 2

10 MHz BW

Lowest Channel (3555 MHz)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
39.312000	42.32	V	RMS	± 4.87
69.964000	41.93	V	RMS	
250.093000	32.17	V	RMS	
375.029000	40.50	H	RMS	

Middle Channel (3625 MHz)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
39.312000	42.42	V	RMS	± 4.87
249.996000	31.56	V	RMS	
375.029000	40.68	H	RMS	
499.771000	35.81	H	RMS	

High Channel (3695 MHz)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
49.982000	45.40	V	RMS	± 4.87
249.996000	31.41	V	RMS	
374.932000	41.69	H	RMS	

Frequency range 30 MHz – 1000 MHz Port 3 and 4

10 MHz BW

Lowest Channel (3555 MHz)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
69.964000	43.39	V	RMS	± 4.87
125.060000	34.99	V	RMS	
249.996000	31.14	V	RMS	
374.932000	35.41	H	RMS	

Middle Channel (3625 MHz)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
69.867000	42.26	V	RMS	± 4.87
249.996000	31.25	V	RMS	
375.126000	34.94	H	RMS	
499.965000	35.16	H	RMS	

TEST RESULTS (Cont.):

High Channel (3695 MHz)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
69.964000	43.41	V	RMS	± 4.87
124.963000	34.89	V	RMS	
249.996000	30.97	V	RMS	
375.223000	35.31	H	RMS	

Frequency range 30 MHz – 1000 MHz Port 1, 2, 3, and 4

10 MHz BW

Lowest channel from Port 0 and 1, Middle channel from Port 2 and 3 (Worst case)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
39.118000	42.10	V	RMS	± 4.87
49.885000	39.91	V	RMS	
70.061000	42.16	V	RMS	
94.020000	41.05	V	RMS	
374.932000	40.47	H	RMS	
500.062000	36.93	H	RMS	

Frequency range 30 MHz – 1000 MHz Port 1 and 2

20 MHz BW

Lowest Channel (3560 MHz)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
69.964000	42.83	V	RMS	± 4.87
49.982000	40.71	V	RMS	
89.946000	36.01	V	RMS	
124.866000	33.05	V	RMS	
150.086000	31.05	V	RMS	

Middle Channel (3625 MHz)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
69.964000	42.46	V	RMS	± 4.87
49.885000	41.39	V	RMS	
89.849000	37.19	V	RMS	
124.963000	33.64	V	RMS	

High Channel (3690 MHz)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
49.885000	39.27	V	RMS	± 4.87
69.964000	42.25	V	RMS	
249.899000	30.21	V	RMS	
499.965000	35.67	V	RMS	

TEST RESULTS (Cont.):

Frequency range 30 MHz – 1000 MHz Port 3 and 4

20 MHz BW

Lowest Channel (3560 MHz)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
69.867000	42.55	V	RMS	± 4.87
249.996000	31.52	V	RMS	
374.932000	34.50	H	RMS	

Middle Channel (3625 MHz)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
39.312000	40.60	V	RMS	± 4.87
69.867000	40.46	V	RMS	
331.282000	31.47	H	RMS	
374.932000	35.19	H	RMS	

High Channel (3690 MHz)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
49.885000	42.24	V	RMS	± 4.87
69.867000	41.11	V	RMS	
331.991000	31.34	H	RMS	
375.029000	34.02	H	RMS	

Frequency range 30 MHz – 1000 MHz Port 1, 2, 3, and 4

20 MHz BW

Lowest channel from Port 0 and 1, Middle channel from Port 2 and 3 (Worst case)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
39.312000	40.60	V	RMS	± 4.87
49.885000	38.06	V	RMS	
69.770000	42.31	V	RMS	
89.849000	35.73	V	RMS	
124.769000	33.87	V	RMS	
375.029000	34.72	H	RMS	

Frequency range 1 GHz – 18GHz Port 1 and 2

10 MHz BW

Lowest Channel (3555 MHz)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
7109.839286	44.48	H	RMS	± 4.87
10664.678572	43.18	H	RMS	

Middle Channel (3625 MHz)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
7247.732143	43.15	H	RMS	± 4.87
10873.928572	40.12	H	RMS	

TEST RESULTS (Cont.):				
High Channel (3695 MHz)				
Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
7390.446429	36.36	H	RMS	± 4.87
17985.053571	43.32	V	RMS	
Frequency range 1 GHz – 18 GHz Port 3 and 4				
10 MHz BW				
Lowest Channel (3555 MHz)				
Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
7111.285714	38.88	H	RMS	± 4.87
10665.160714	49.33	H	RMS	
Middle Channel (3625 MHz)				
Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
7247.732143	43.15	H	RMS	± 4.87
10873.928572	40.12	H	RMS	
High Channel (3695 MHz)				
Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
7389.000000	37.28	H	RMS	± 4.87
11082.696429	40.72	H	RMS	
Frequency range 1 GHz – 18 GHz Port 1, 2, 3 and 4				
10 MHz BW				
Lowest channel from Port 0 and 1, Middle channel from Port 2 and 3 (Worst case)				
Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
7110.803572	43.96	H	RMS	± 4.87
7246.767857	37.60	H	RMS	
10666.607143	40.99	H	RMS	
10877.785714	52.26	H	RMS	
Frequency range 1 GHz – 18 GHz Port 1 and 2				
20 MHz BW				
Lowest Channel (3560 MHz)				
Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
7119.000000	39.40	H	RMS	± 4.87
10684.928572	38.98	H	RMS	

TEST RESULTS (Cont.):

Middle Channel (3625 MHz)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
7246.767857	40.98	H	RMS	± 4.87
10874.410714	39.68	H	RMS	

High Channel (3690 MHz)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
4999.982143	38.31	V	RMS	± 4.87

Frequency range 1 GHz – 18 MHz Port 3 and 4

20 MHz BW

Lowest Channel (3560 MHz)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
7113.696429	35.99	H	RMS	± 4.87
10677.696429	46.35	H	RMS	

Middle Channel (3625 MHz)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
7245.803572	38.58	H	RMS	± 4.87
10872.482143	52.09	H	RMS	

High Channel (3690 MHz)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
7377.428572	36.92	H	RMS	± 4.87
11066.303572	42.95	H	RMS	

Frequency range 1 GHz – 18 GHz Port 1, 2, 3 and 4

20 MHz BW

Lowest channel from Port 0 and 1, Middle channel from Port 2 and 3 (Worst case)

Spurious Frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
7120.928572	38.98	H	RMS	± 4.87
7246.285714	38.23	H	RMS	
10681.071429	38.91	H	RMS	
10878.750000	52.00	H	RMS	

Frequency range 18 GHz – 40 GHz

Radiated spurious signals detected were more than 10 dB below the reference limit for the lowest, middle and highest channels in all two BWs from Port 1/2 and 3/4 as well as Port 1, 2, 3, and 4.

(See next plots)