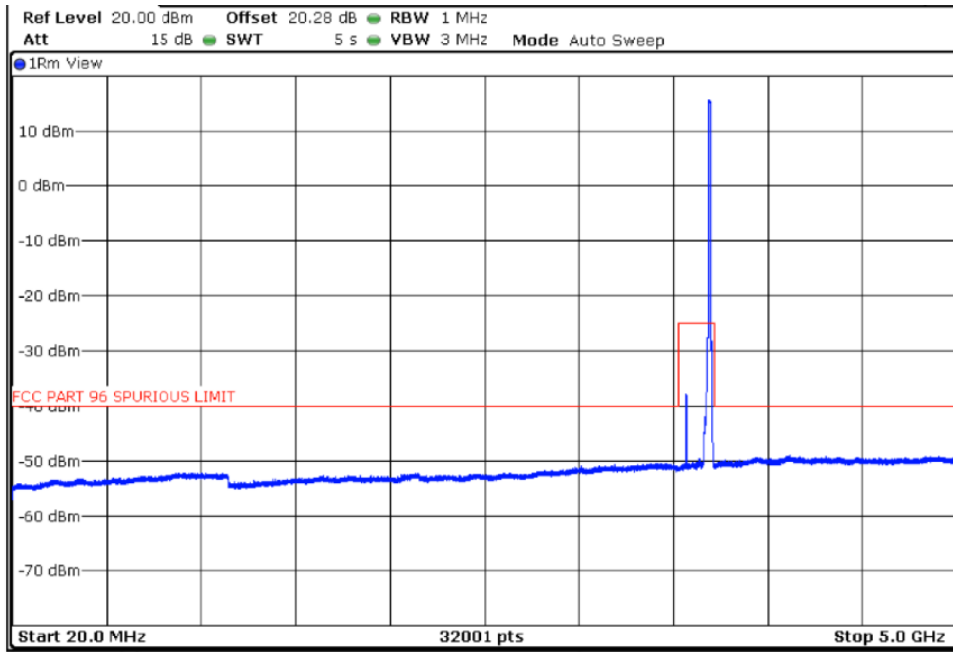


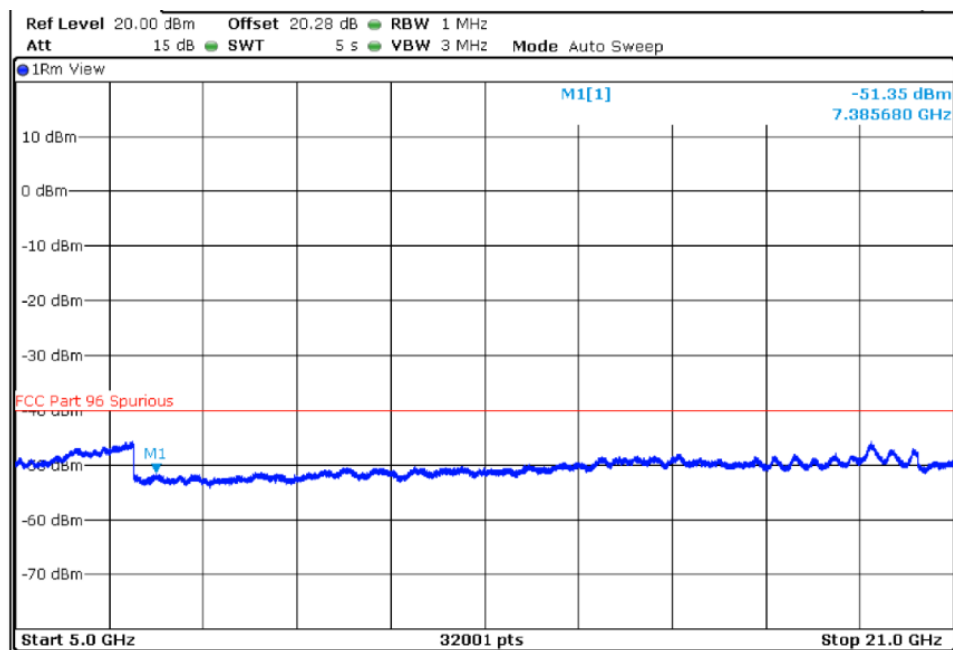
TEST RESULTS (Cont.):

Highest Channel (3695 MHz)

FREQUENCY RANGE 20 MHz-5 GHz

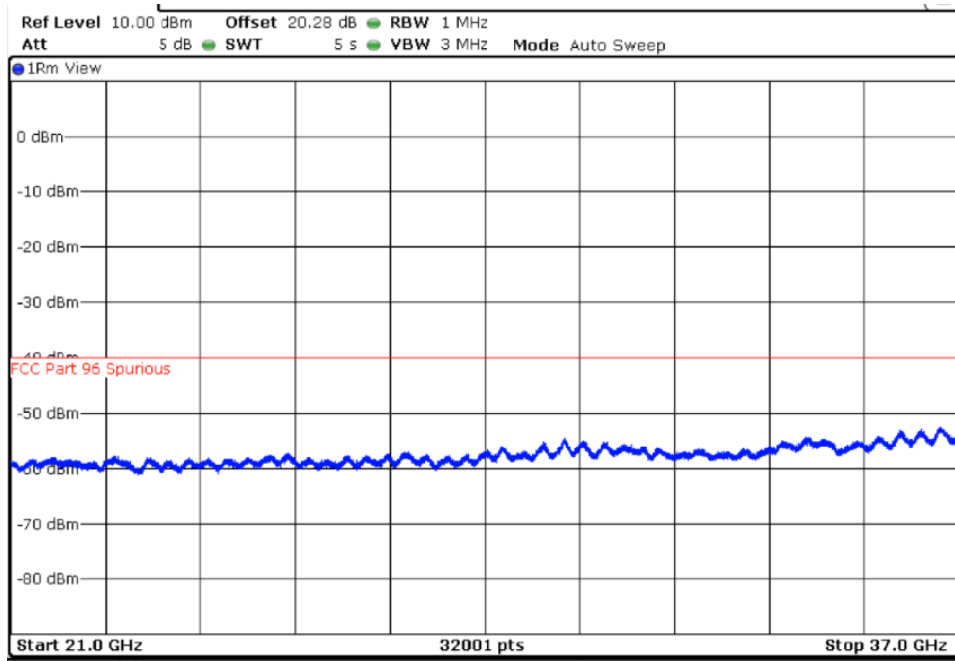


FREQUENCY RANGE 5-21 GHz



**TEST RESULTS (Cont.):**

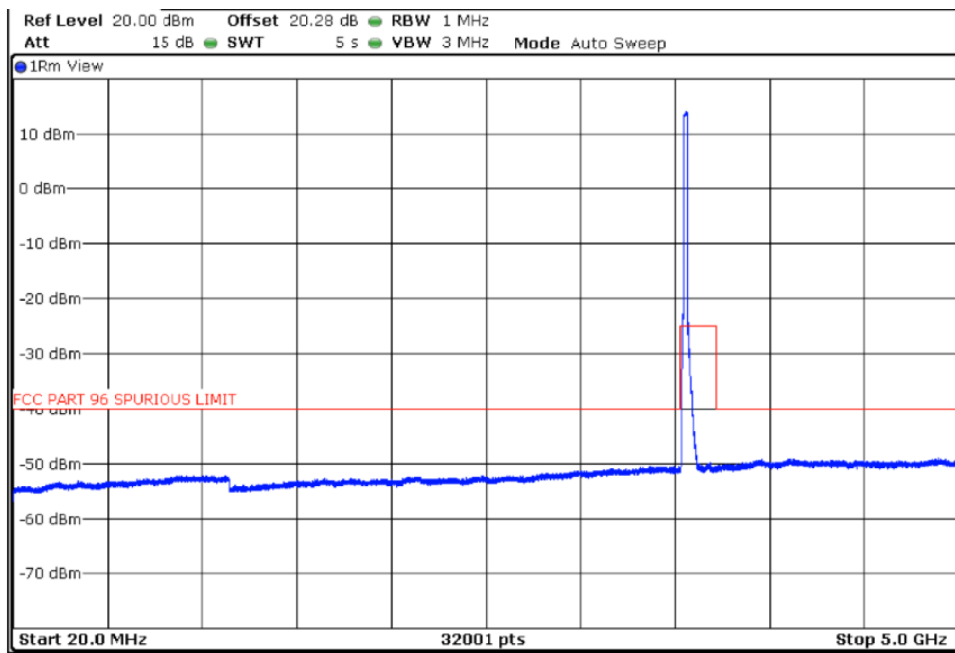
**FREQUENCY RANGE 21-37 GHz**



**20 MHz BW**

**Lowest Channel (3560 MHz)**

**FREQUENCY RANGE 20 MHz-5 GHz**

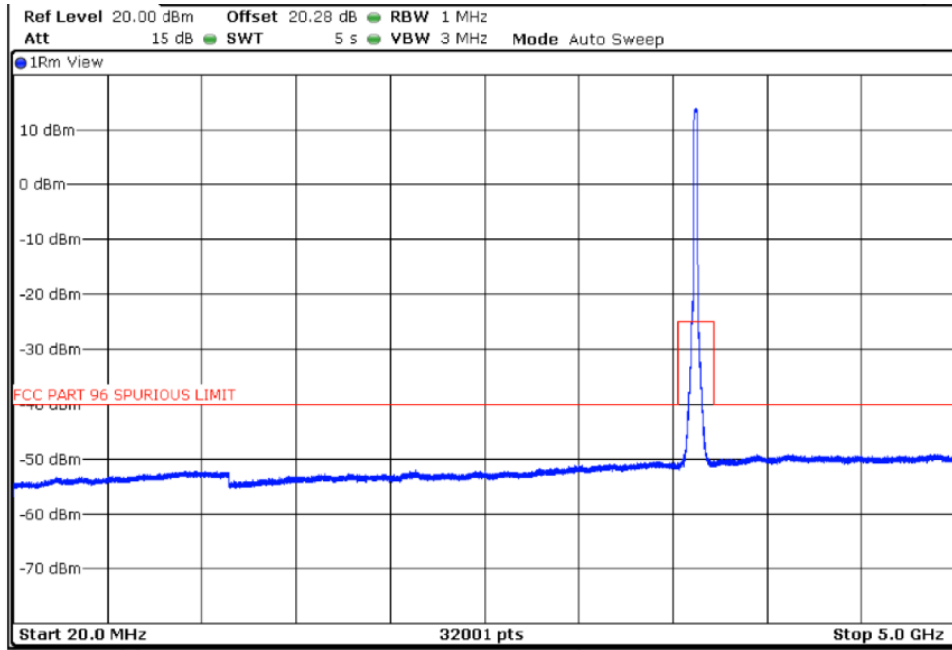




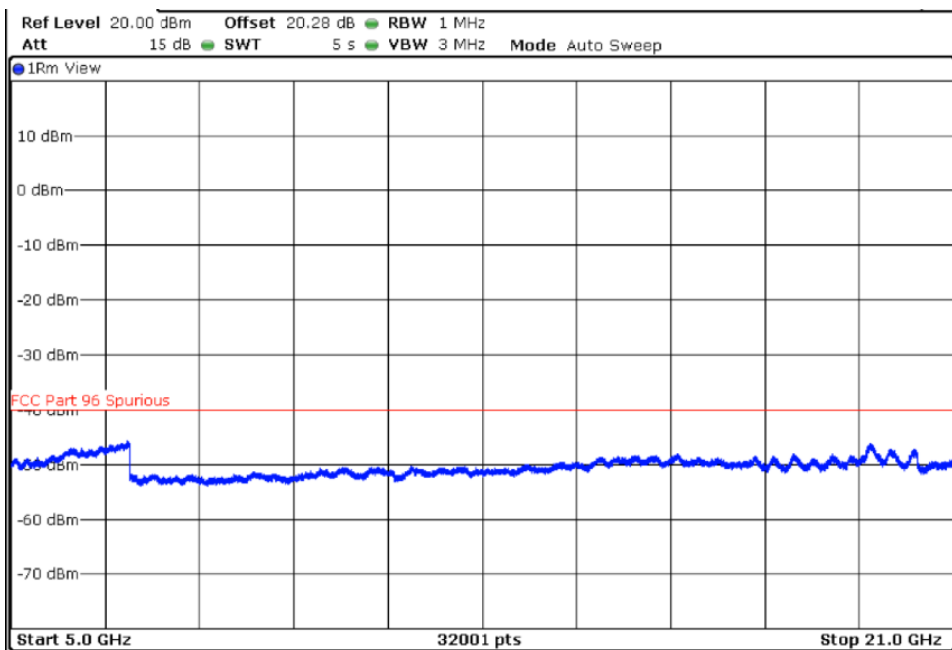
TEST RESULTS (Cont.):

Middle Channel (3625 MHz)

FREQUENCY RANGE 20 MHz-5 GHz

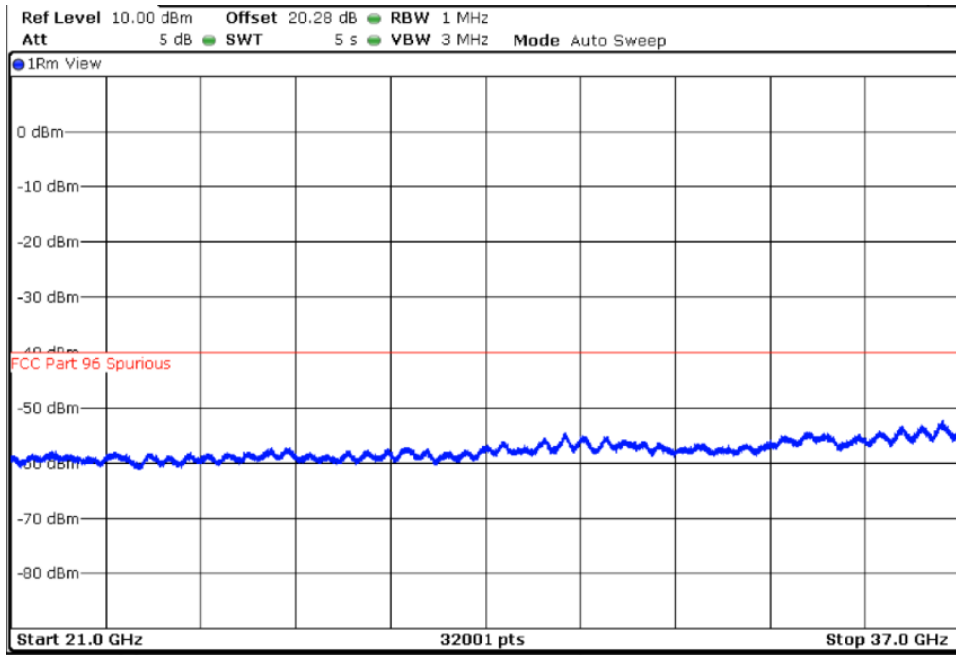


FREQUENCY RANGE 5-21 GHz



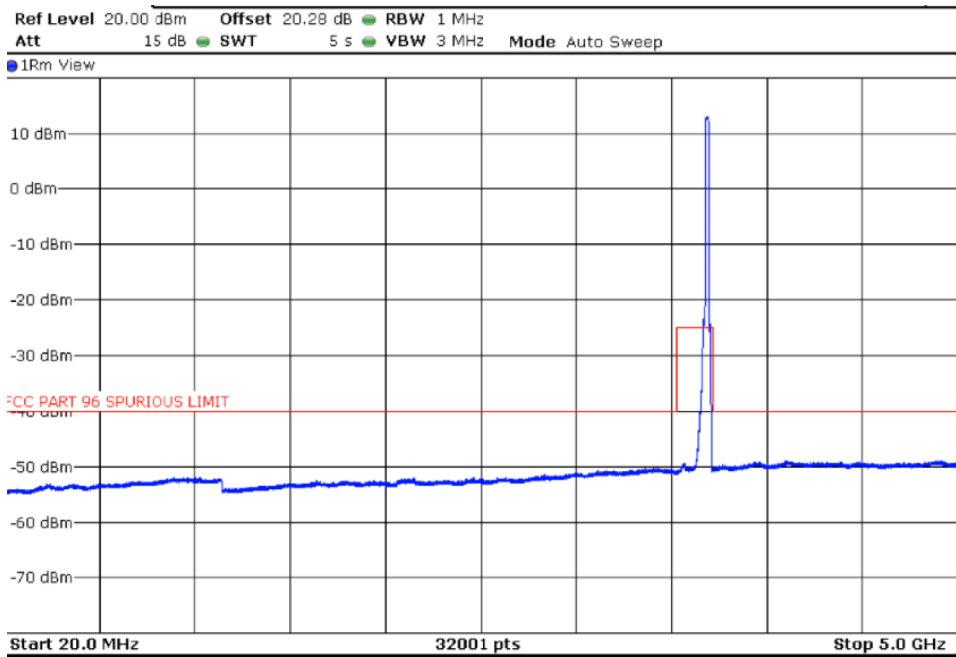
**TEST RESULTS (Cont.):**

**FREQUENCY RANGE 21-37 GHz**



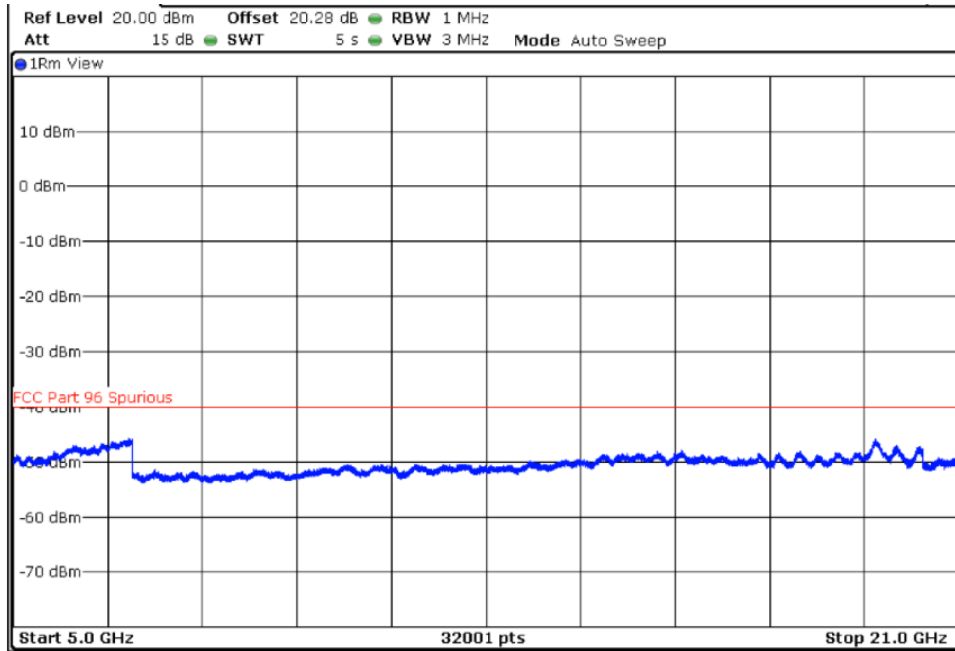
**Highest Channel (3690 MHz)**

**FREQUENCY RANGE 20 MHz-5 GHz**

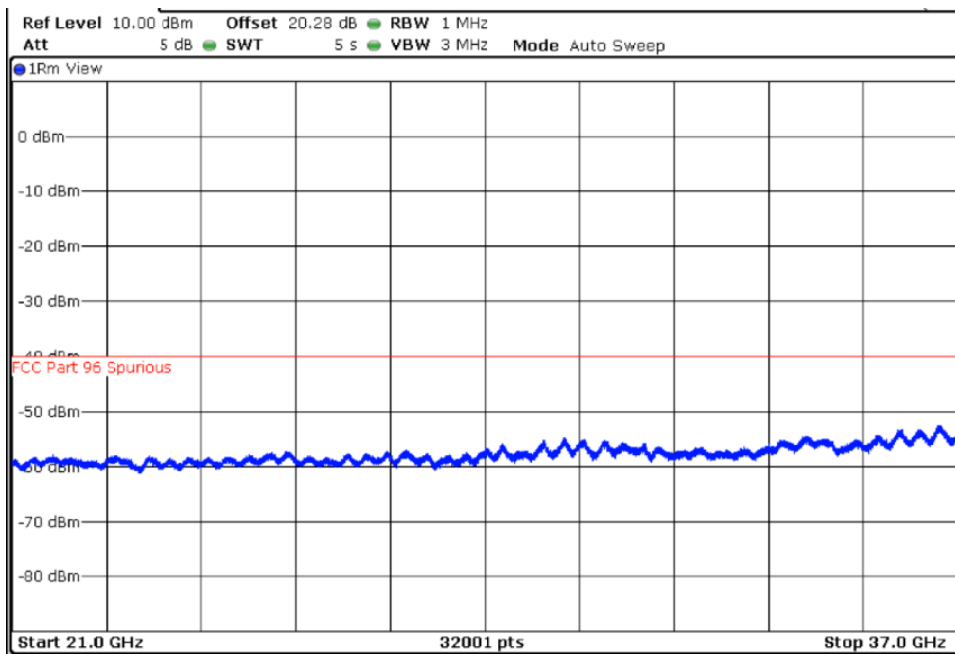


**TEST RESULTS (Cont.):**

**FREQUENCY RANGE 5-21 GHz**



**FREQUENCY RANGE 21-37 GHz**



## TEST A.8: RADIATED SPURIOUS EMISSION

<b>LIMITS:</b>	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)

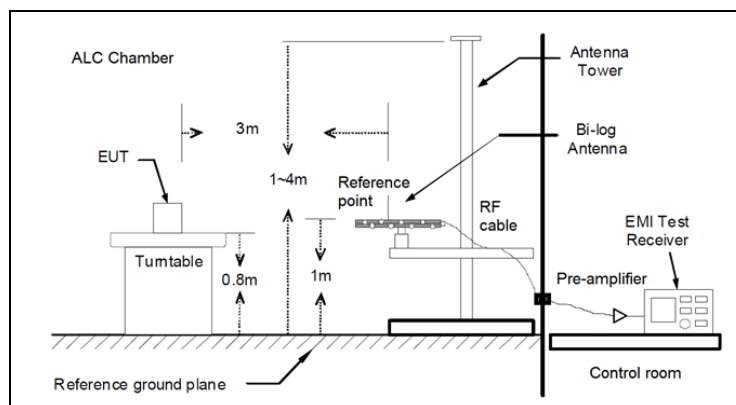
### TEST SETUP

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

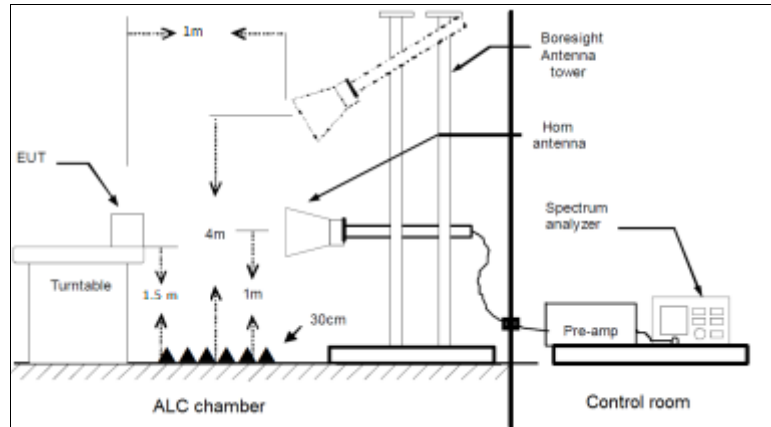
Detected emissions were maximized at each frequency by rotating the EUT and adjusting the measuring antenna height and polarization. The maximum meter reading was recorded. The radiated emissions were measured with RMS detector.

### 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 at 3-meter distance when two ports transmitting at the same time in 2X2 MIMO mode and the spurious emissions and plots of worst cases are shown below.



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

**Frequency range 30 MHz – 1000 MHz**

**10 MHz BW**

Lowest Channel (3555 MHz)

Spurious Frequency (MHz)	Detector	Emission Level (dB $\mu$ V/m)	Polarization	Measurement Uncertainty (dB)
72.777000	RMS	39.38	V	± 4.87
301.891000	RMS	37.39	H	
499.965000	RMS	38.19	H	
624.998000	RMS	43.26	V	
707.157000	RMS	49.39	H	

Middle Channel (3625 MHz)

Spurious Frequency (MHz)	Detector	Emission Level (dB $\mu$ V/m)	V	Measurement Uncertainty (dB)
73.165000	RMS	38.94	H	± 4.87
301.988000	RMS	36.62	H	
499.868000	RMS	37.72	V	
625.095000	RMS	42.54	V	

High Channel (3695 MHz)

Spurious Frequency (MHz)	Detector	Emission Level (dB $\mu$ V/m)	Polarization	Measurement Uncertainty (dB)
72.971000	RMS	38.11	V	± 4.87
302.861000	RMS	36.44	V	
499.965000	RMS	37.72	H	

**Frequency range 30 MHz – 1000 MHz**

**20 MHz BW**

Lowest Channel (3560 MHz)

Spurious Frequency (MHz)	Detector	Emission Level (dB $\mu$ V/m)	Polarization	Measurement Uncertainty (dB)
72.680000	RMS	38.70	V	± 4.87
302.279000	RMS	36.88	V	
500.159000	RMS	37.45	H	
624.998000	RMS	43.16	V	

**TEST RESULTS (Cont.):**

Middle Channel (3625 MHz)

Spurious Frequency (MHz)	Detector	Emission Level (dB $\mu$ V/m)	Polarization	Measurement Uncertainty (dB)
72.971000	RMS	38.67	V	± 4.87
302.667000	RMS	36.29	V	
500.062000	RMS	37.98	H	
625.192000	RMS	42.15	V	

High Channel (3690 MHz)

Spurious Frequency (MHz)	Detector	Emission Level (dB $\mu$ V/m)	Polarization	Measurement Uncertainty (dB)
73.165000	RMS	38.87	V	± 4.87
301.406000	RMS	36.25	V	
499.868000	RMS	37.46	V	
624.998000	RMS	42.86	V	

**Frequency range 1 GHz – 18GHz**

**10 MHz BW**

Lowest Channel (3555 MHz)

Spurious Frequency (MHz)	Detector	Emission Level (dB $\mu$ V/m)	Polarization	Measurement Uncertainty (dB)
7111.285714	RMS	38.60	H	± 4.87
10665.160714	RMS	43.05	H	
14226.750000	RMS	43.49	V	

Middle Channel (3625 MHz)

Spurious Frequency (MHz)	Detector	Emission Level (dB $\mu$ V/m)	Polarization	Measurement Uncertainty (dB)
7247.732143	RMS	39.50	V	± 4.87
10875.375000	RMS	42.01	H	

High Channel (3695 MHz)

Spurious Frequency (MHz)	Detector	Emission Level (dB $\mu$ V/m)	Polarization	Measurement Uncertainty (dB)
7390.928572	RMS	35.96	H	± 4.87
11086.553572	RMS	44.55	H	
14781.696429	RMS	41.61	H	

**TEST RESULTS (Cont.):**

**20 MHz BW**

Lowest Channel (3560 MHz)

Spurious Frequency (MHz)	Detector	Emission Level (dB $\mu$ V/m)	Polarization	Measurement Uncertainty (dB)
10677.696429	RMS	39.40	V	$\pm 4.87$

Middle Channel (3625 MHz)

Spurious Frequency (MHz)	Detector	Emission Level (dB $\mu$ V/m)	Polarization	Measurement Uncertainty (dB)
10870.071429	RMS	38.48	H	$\pm 4.87$

High Channel (3690 MHz)

Spurious Frequency (MHz)	Detector	Emission Level (dB $\mu$ V/m)	Polarization	Measurement Uncertainty (dB)
11073.053572	RMS	41.41	H	$\pm 4.87$

**Frequency range 18 GHz – 40 GHz**

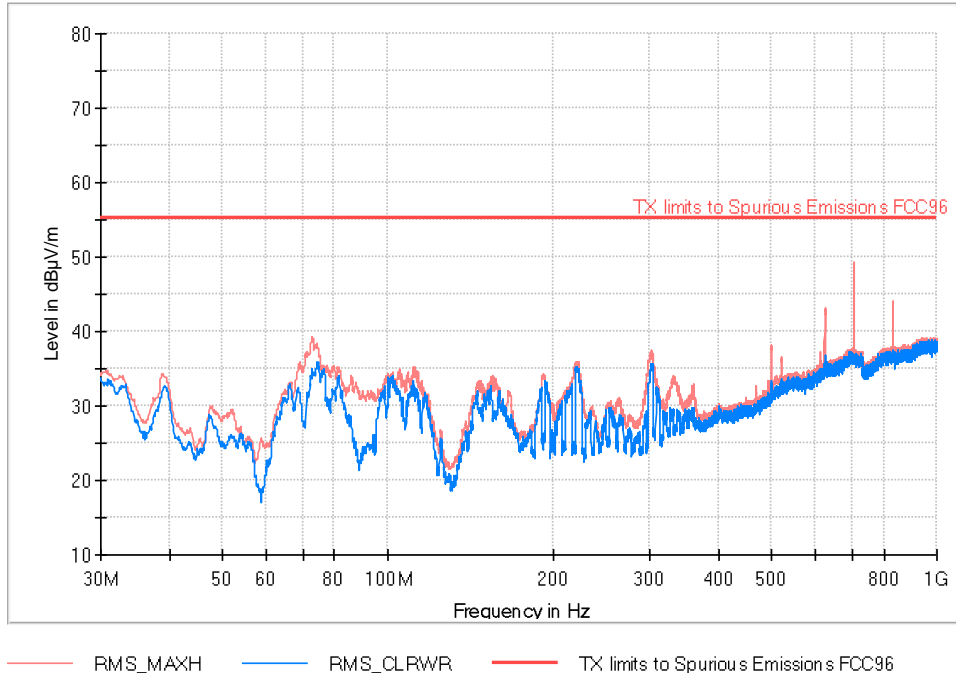
Radiated spurious signals detected were more than 10 dB below the reference limit for the lowest, middle and highest channels in all two BWs.

See next plots

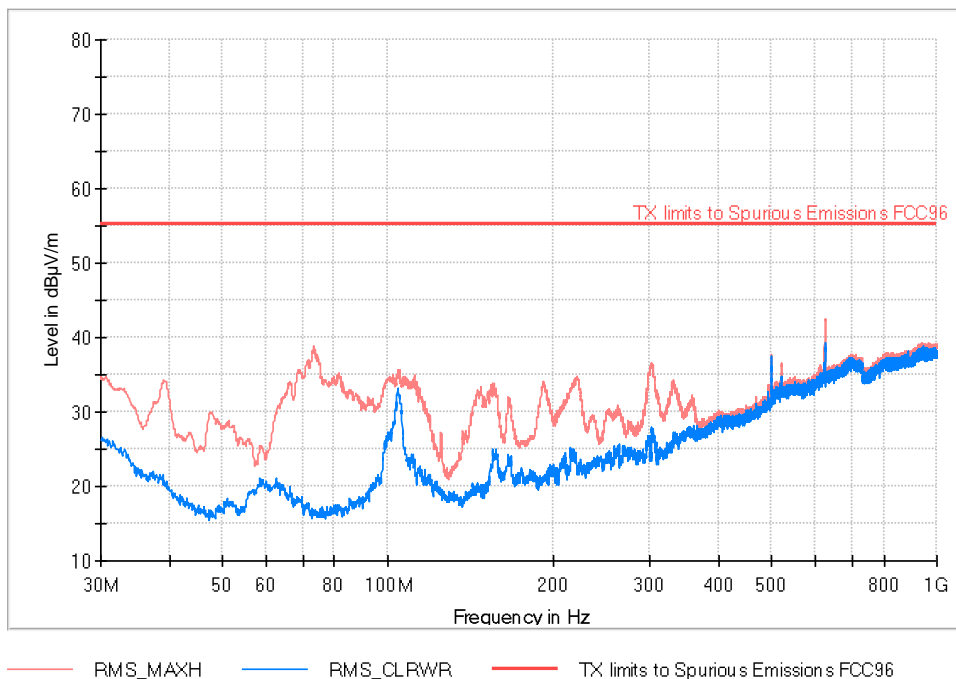
**TEST RESULTS (Cont.):**

**10 MHz BW**

FREQUENCY RANGE 30 MHz-1 GHz  
**Lowest Channel (3555 MHz)**

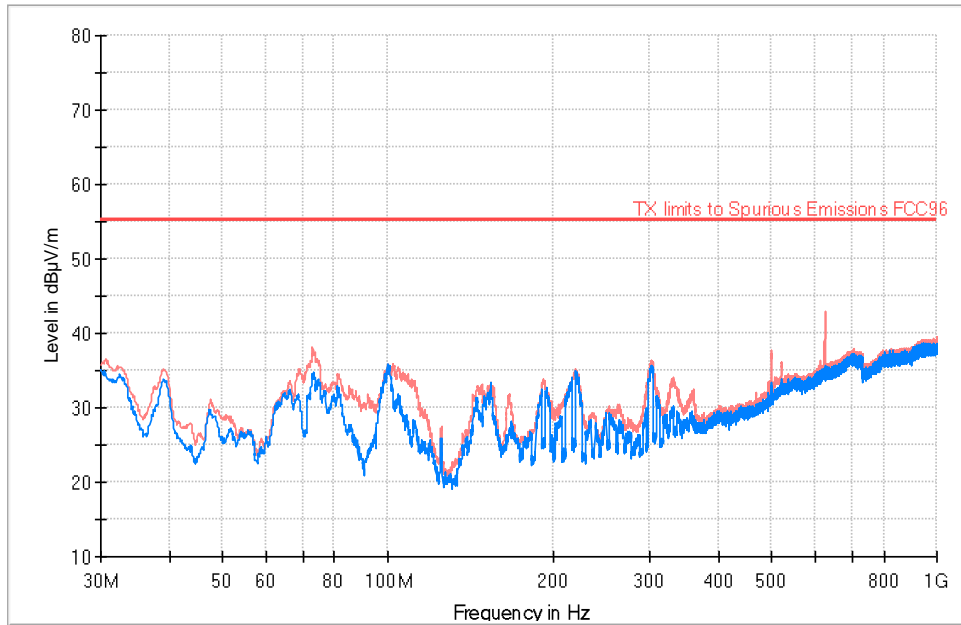


**Middle Channel (3625 MHz)**



TEST RESULTS (Cont.):

Highest Channel (3695MHz)

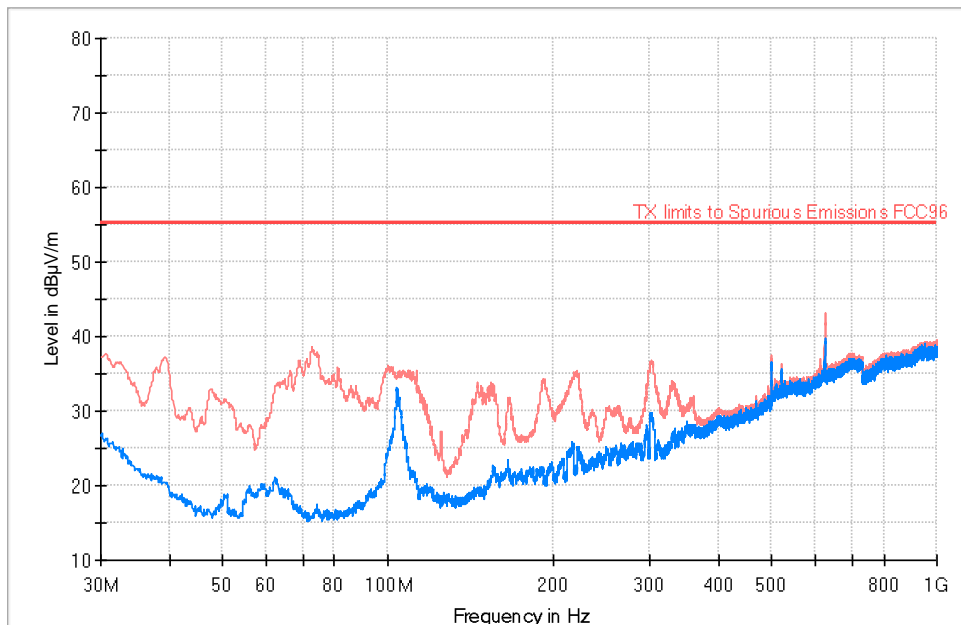


— RMS\_MAXH — RMS\_CLPWR — TX limits to Spurious Emissions FCC96

**20 MHz BW**

FREQUENCY RANGE 30 MHz-1 GHz

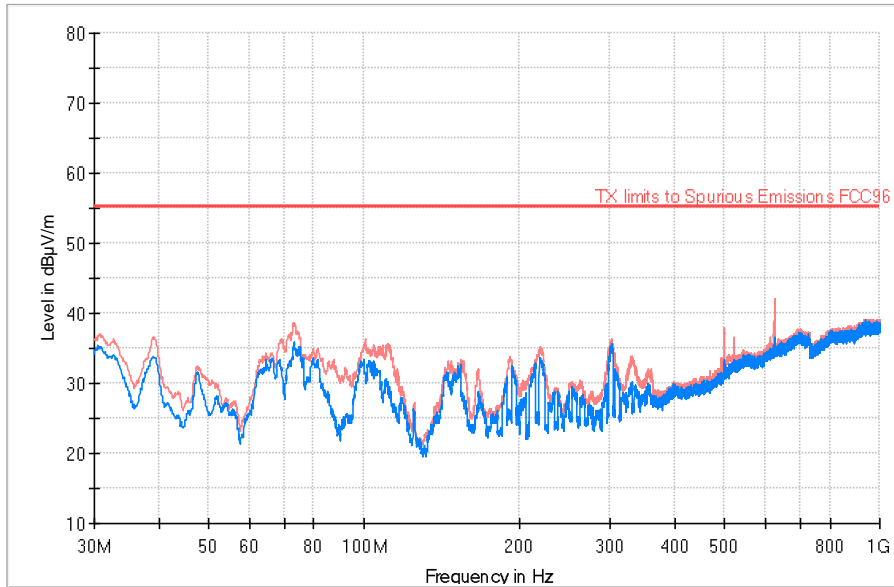
Lowest Channel (3560 MHz)



— RMS\_MAXH — RMS\_CLPWR — TX limits to Spurious Emissions FCC96

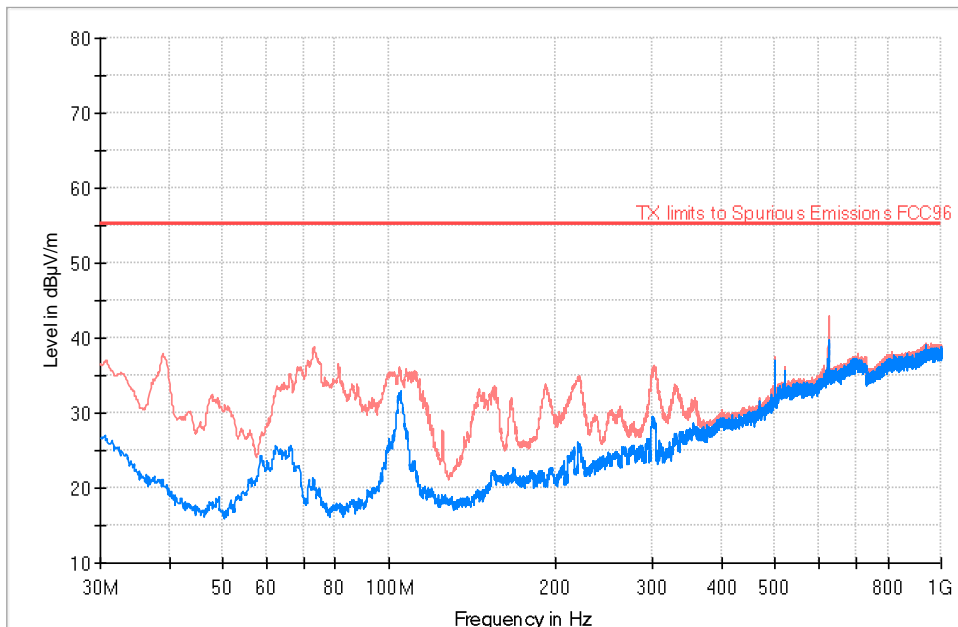
TEST RESULTS (Cont.):

Middle Channel (3625 MHz)



— RMS\_MAXH — RMS\_CLRWR — TX limits to Spurious Emissions FCC96

High Channel (3690 MHz)

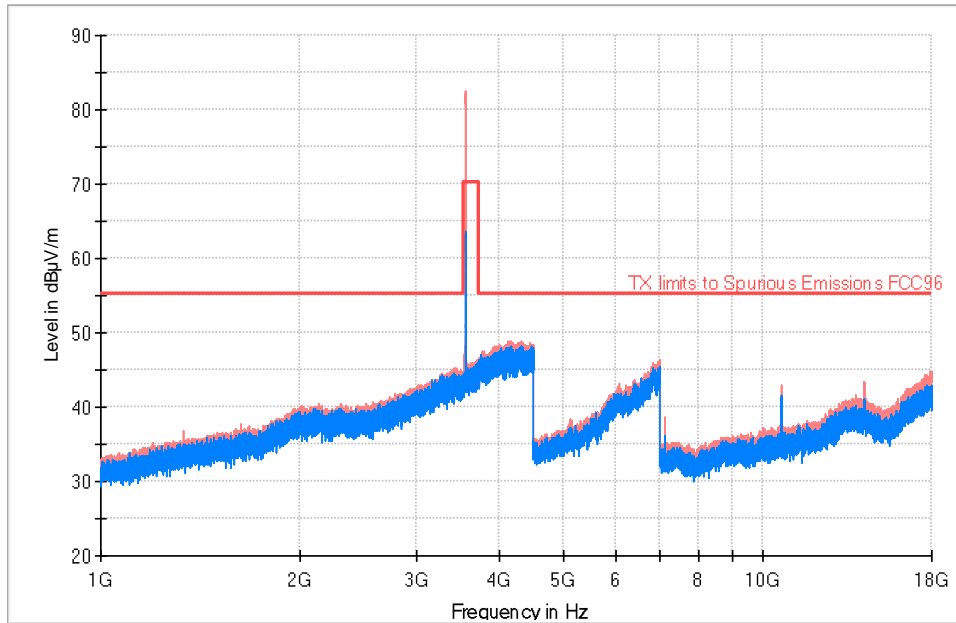


— RMS\_MAXH — RMS\_CLRWR — TX limits to Spurious Emissions FCC96

**TEST RESULTS (Cont.):**

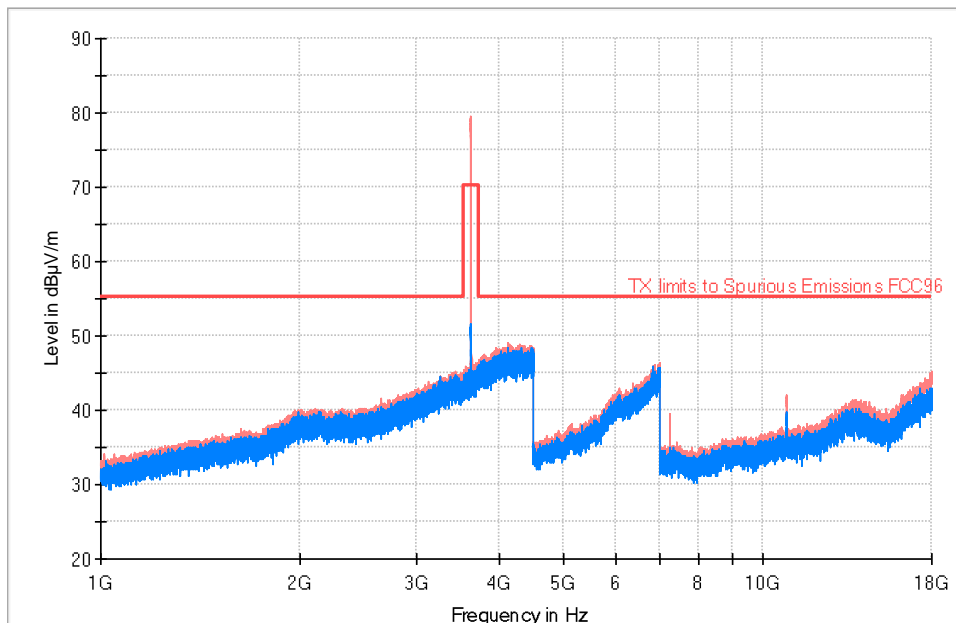
**10 MHz BW**

FREQUENCY RANGE 1 GHz-18 GHz  
**Lowest Channel (3555 MHz)**



— RMS\_MAXH — RMS\_CLPWR — TX limits to Spurious Emission s FCC96

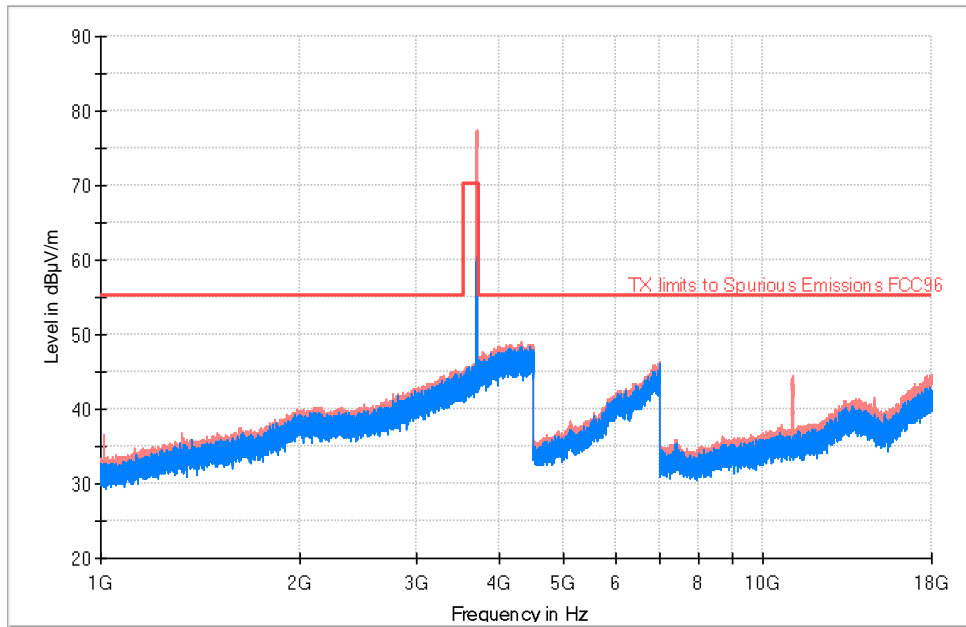
**Middle Channel (3625 MHz)**



— RMS\_MAXH — RMS\_CLPWR — TX limits to Spurious Emission s FCC96

**TEST RESULTS (Cont.):**

**High Channel (3695 MHz)**

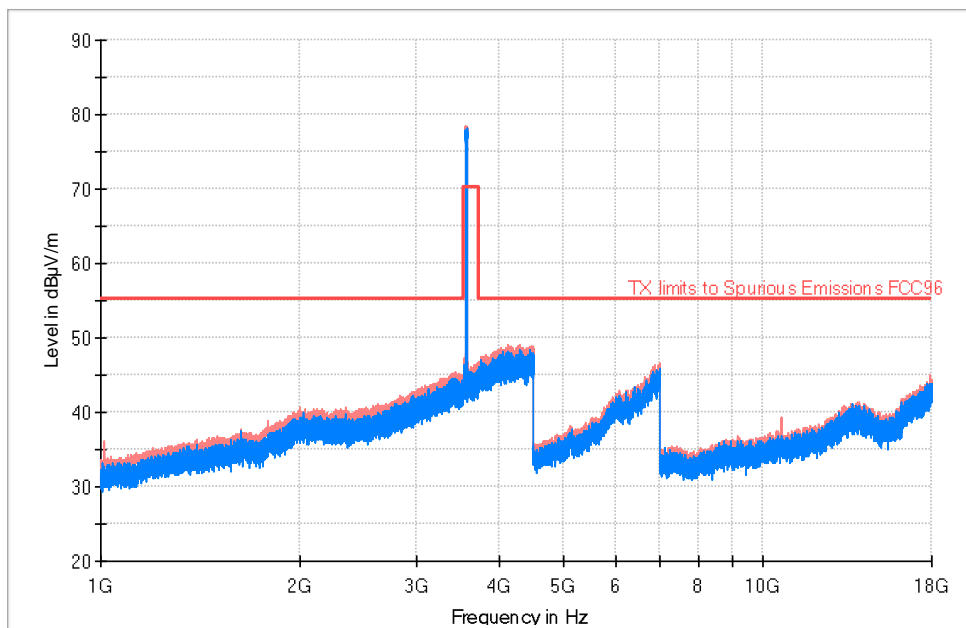


— RMS\_MAXH — RMS\_CLPWR — TX limits to Spurious Emission s FCC96

**20 MHz BW**

FREQUENCY RANGE 1 GHz-18 GHz

**Lowest Channel (3560 MHz)**

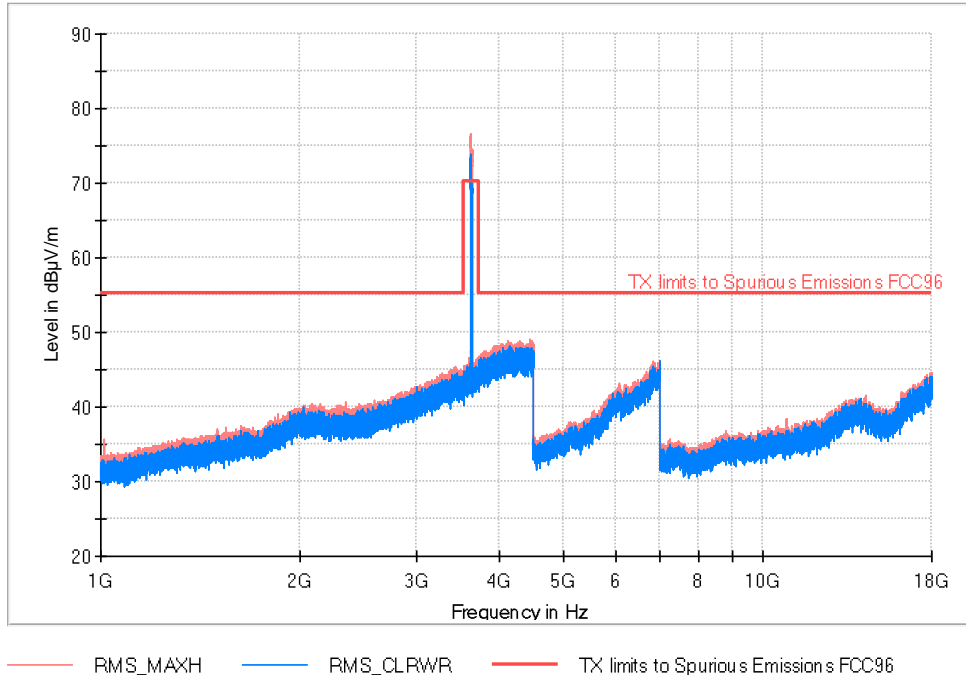


— RMS\_MAXH — RMS\_CLPWR — TX limits to Spurious Emission s FCC96

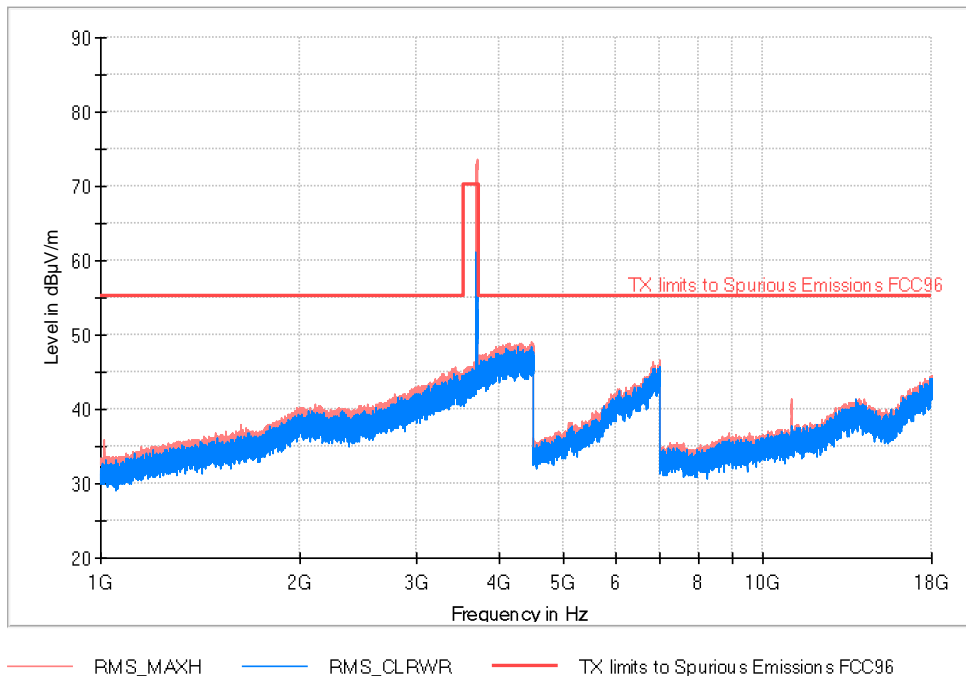


TEST RESULTS (Cont.):

Middle Channel (3625 MHz)



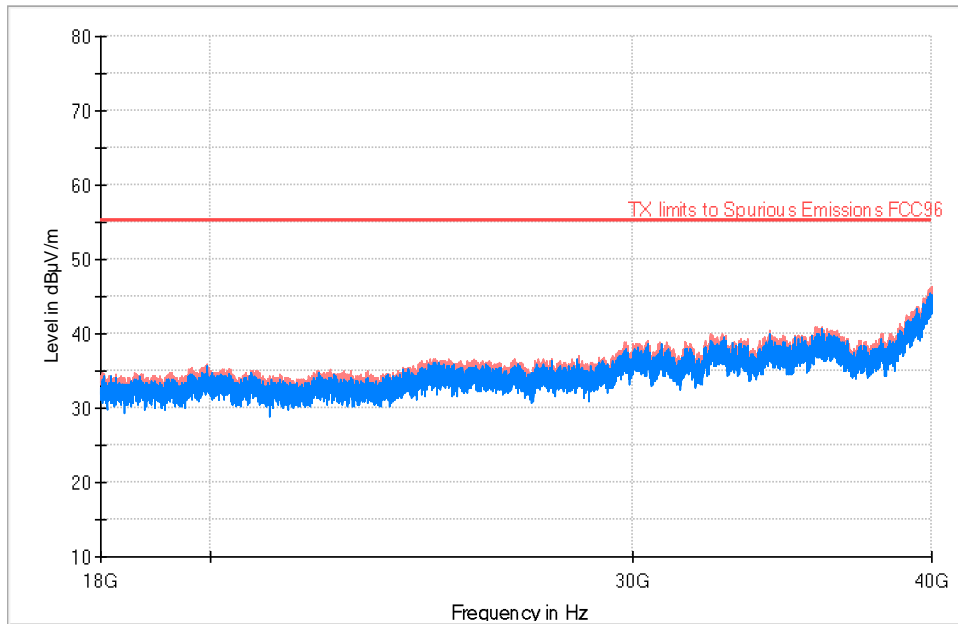
High Channel (3690 MHz)



**TEST RESULTS (Cont.):**

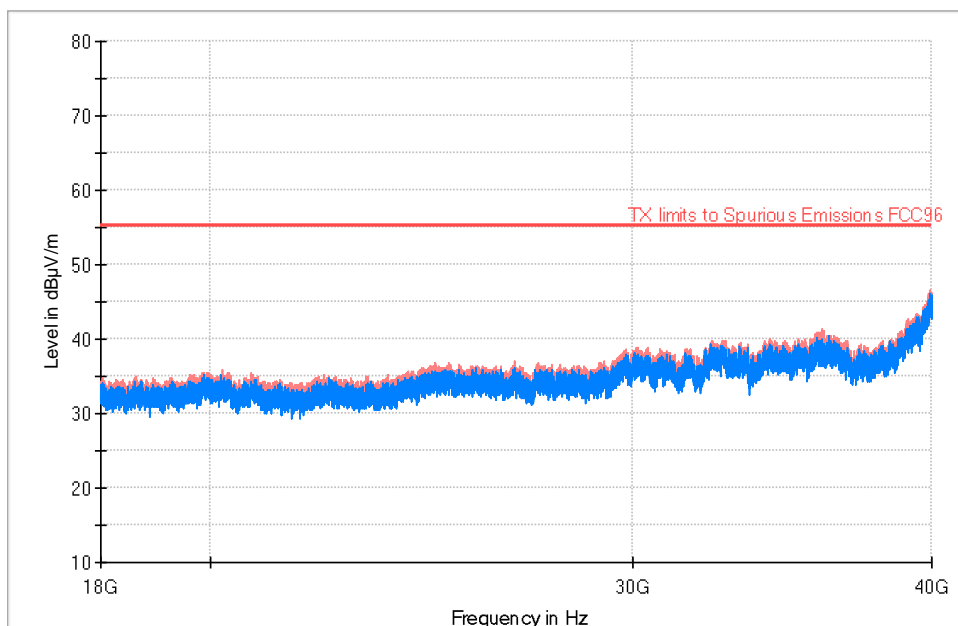
**10 MHz BW**

FREQUENCY RANGE 18-40 GHz  
**Lowest Channel (3555 MHz)**



— RMS\_MAXH — RMS\_CLPWR — TX limits to Spurious Emissions FCC96

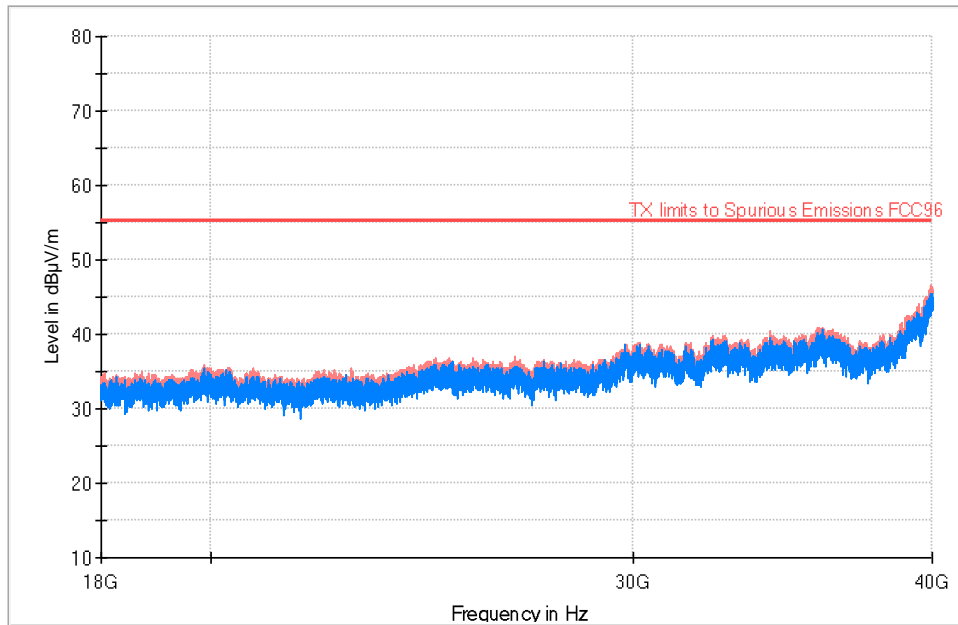
**Middle Channel (3625 MHz)**



— RMS\_MAXH — RMS\_CLPWR — TX limits to Spurious Emissions FCC96

**TEST RESULTS (Cont.):**

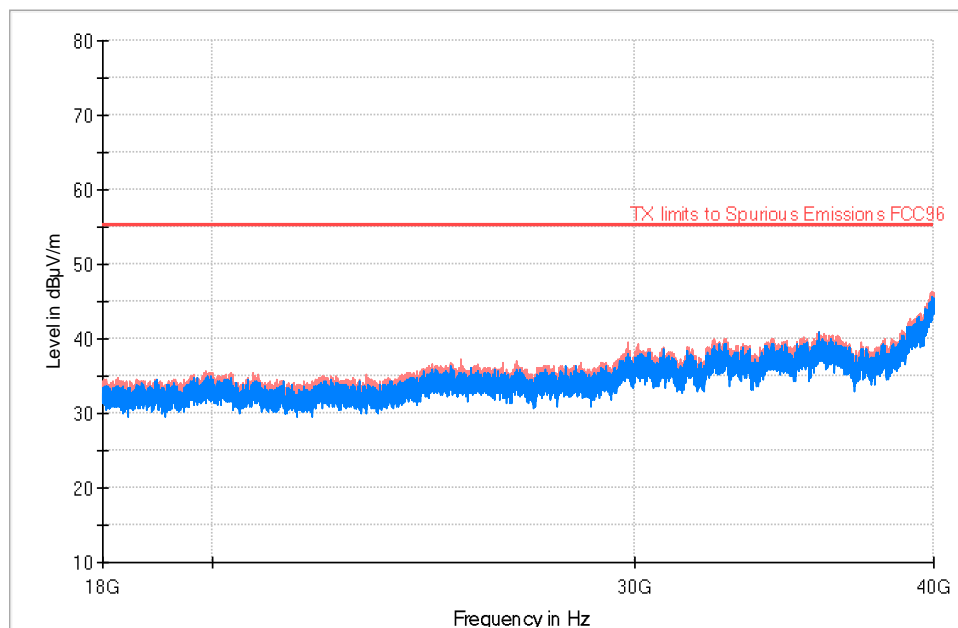
**High Channel (3695 MHz)**



— RMS\_MAXH — RMS\_CLRWR — TX limits to Spurious Emissions FCC96

**20 MHz BW**

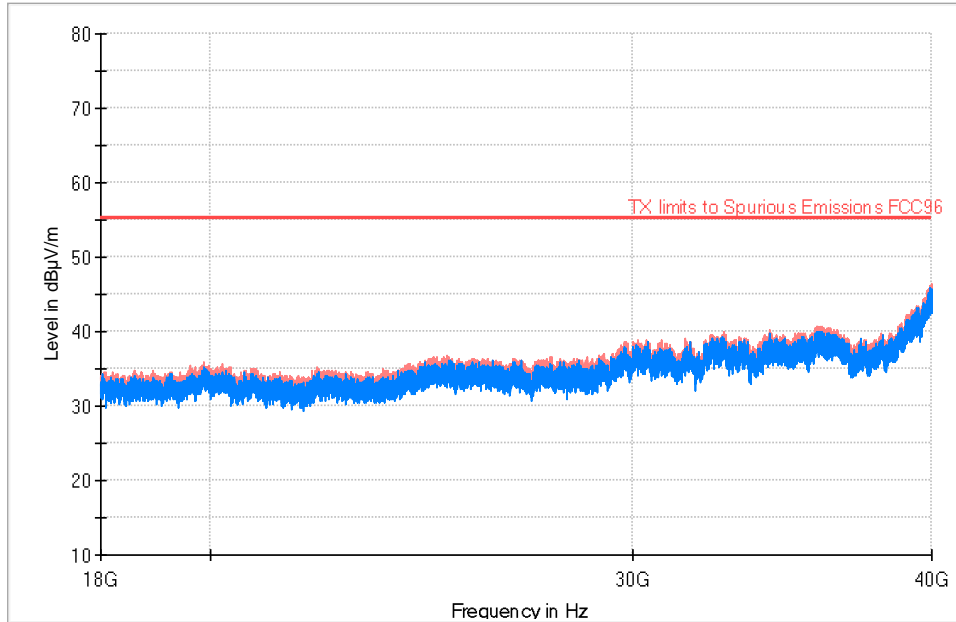
FREQUENCY RANGE 18-40 GHz  
**Lowest Channel (3560 MHz)**



— RMS\_MAXH — RMS\_CLRWR — TX limits to Spurious Emissions FCC96

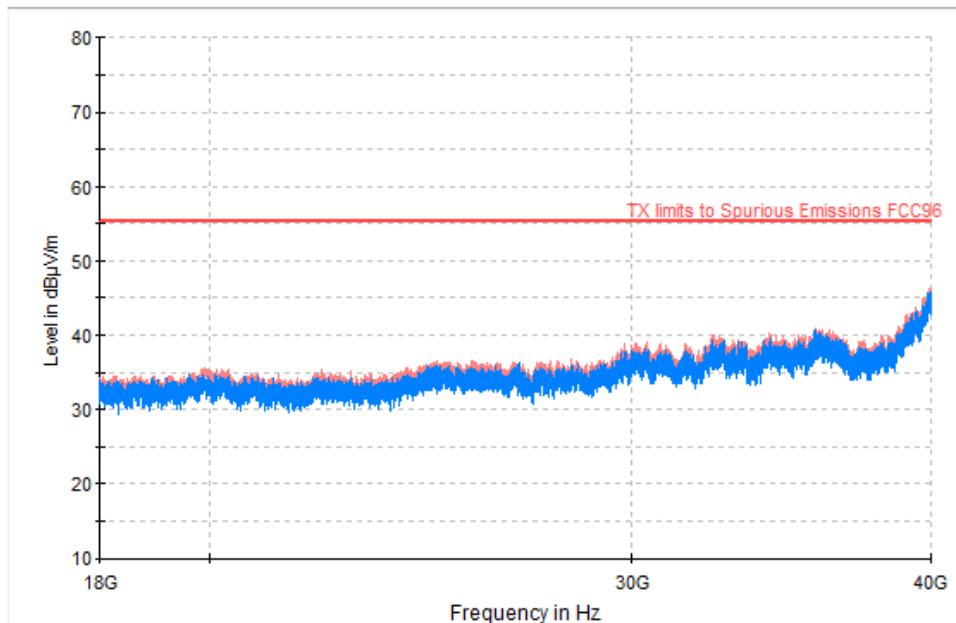
TEST RESULTS (Cont.):

Middle Channel (3625 MHz)



— RMS\_MAXH    — RMS\_CLRWR    — TX limits to Spurious Emissions FCC96

High Channel (3690 MHz)



— RMS\_MAXH    — RMS\_CLRWR    — TX limits to Spurious Emissions FCC96

## TEST A.9: FREQUENCY STABILITY

<b>LIMITS:</b>	Product standard:	Part 2.1055
	Test standard:	ANSI C63.26-2015

### LIMITS

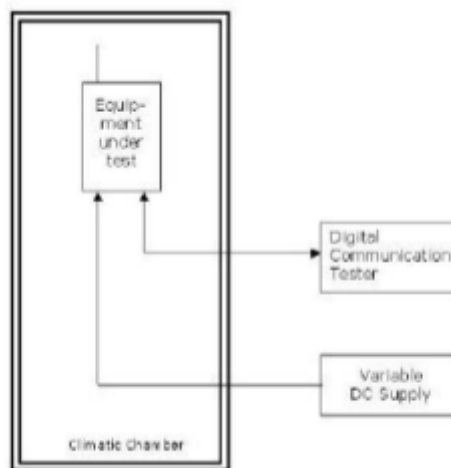
The frequency stability shall be measured with variation of ambient temperature from -30° to +50° centigrade for all equipment except that specified in paragraphs (a) (2) and (3) of this section.

The frequency stability was measured under the following conditions:

- a) At 10°C intervals of temperatures between -30°C and +50°C at the manufacturer's rated supply voltage, and
- b) At +20°C temperature and ±15% supply voltage variations. If a product is specified to operate over a range of input voltage, then the -15% variation is applied to the lowermost voltage and the +15% is applied to the uppermost voltage.

### TEST SETUP

The frequency stability was measured by following the procedure stated in the section 5.6 of ANSI C63.26-2015 and the section 9 of FCC KDB 971168 D01 v03 r01.



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

**10 MHz BW**

Temperature (°C)	Input Voltage (V)	Lowest Frequency 3555 MHz			
		Frequency Low (MHz)	Delta to Tnom-Vnom (%)	Frequency High (MHz)	Delta to Tnom-Vnom (%)
50	48	3550.610	0.003943	3559.270	-0.004495
40	48	3550.590	0.003380	3559.370	-0.001686
30	48	3550.570	0.002817	3559.330	-0.002809
20 (Tnom)	48	3550.470	----	3559.430	----
20	40.8	3550.450	-0.000563	3559.450	0.000562
20	55	3550.490	0.000563	3559.410	-0.000562
10	48	3550.510	0.001127	3559.390	-0.001124
0	48	3550.550	0.002253	3559.310	-0.003371
-10	48	3550.530	0.001690	3559.370	-0.001686
-20	48	3550.570	0.002817	3559.290	-0.003933
-30	48	3550.550	0.002253	3559.350	-0.002248

**TEST RESULTS (Cont.):**

**10 MHz BW**

Temperature (°C)	Input Voltage (V)	Highest Frequency 3695 MHz			
		Frequency Low (MHz)	Delta to Tnom-Vnom (%)	Frequency High (MHz)	Delta to Tnom-Vnom (%)
50	48	3690.570	0.000000	3699.390	-0.000541
40	48	3690.550	-0.000542	3699.410	0.000000
30	48	3690.570	0.000000	3699.430	0.000541
20 (Tnom)	48	3690.570	----	3699.410	----
20	40.8	3690.550	-0.000542	3699.430	0.000541
20	55	3690.530	-0.001084	3699.450	0.001081
10	48	3690.550	-0.000542	3699.430	0.000541
0	48	3690.550	-0.000542	3699.430	0.000541
-10	48	3690.590	0.000542	3699.390	-0.000541
-20	48	3690.530	-0.001084	3699.450	0.001081
-30	48	3690.550	-0.000542	3699.430	0.000541