



### 3.6 RADIATED EMISSION MEASUREMENT

#### 3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB. The emission limit equal to  $-13\text{dBm}$ .

#### 3.6.2 TEST PROCEDURES

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G
- c.  $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$ .
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole,  $\text{E.R.P power} = \text{E.I.P.R power} - 2.15\text{dBi}$ .

**NOTE:** The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

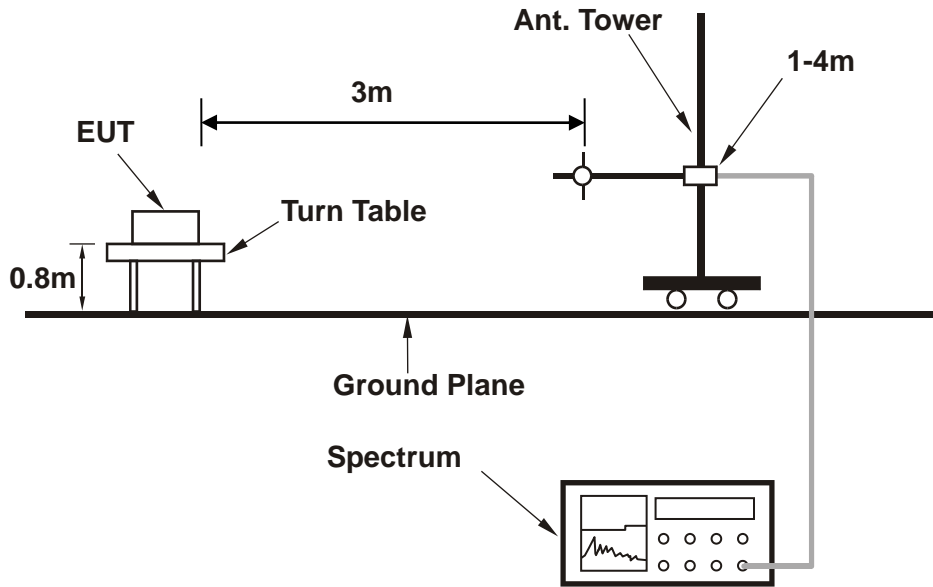
#### 3.6.3 DEVIATION FROM TEST STANDARD

No deviation

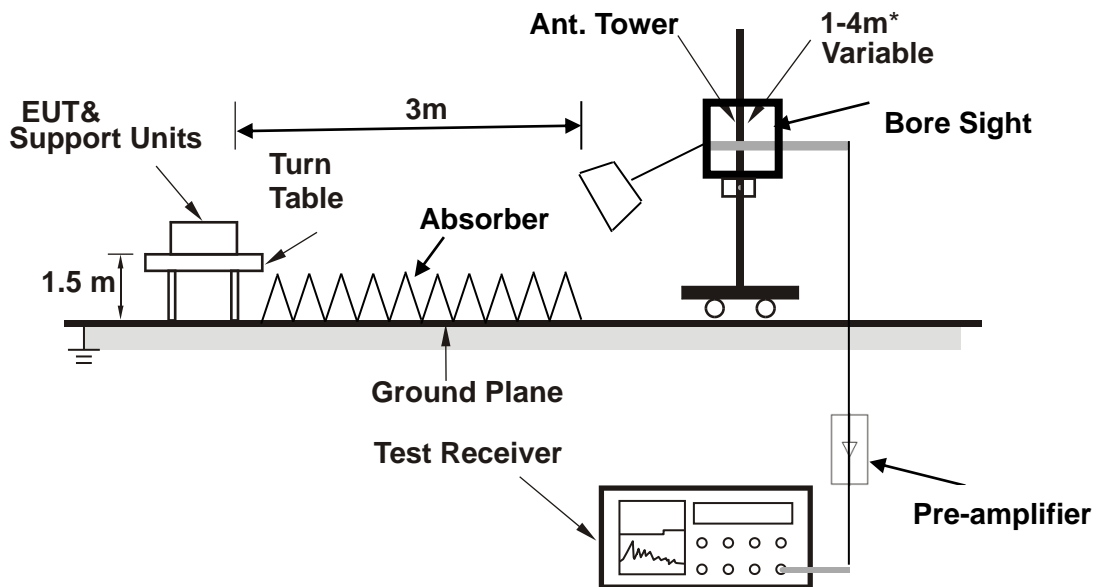


### 3.6.4 TEST SETUP

#### < Frequency Range 30MHz~1GHz >



#### <Frequency Range above 1GHz>



**Note:** Above 1G is a directional antenna

Depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

For the actual test configuration, please refer to the attached file (Test Setup Photo).



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### 3.6.5 TEST RESULTS

#### BELOW 1GHz WORST-CASE DATA

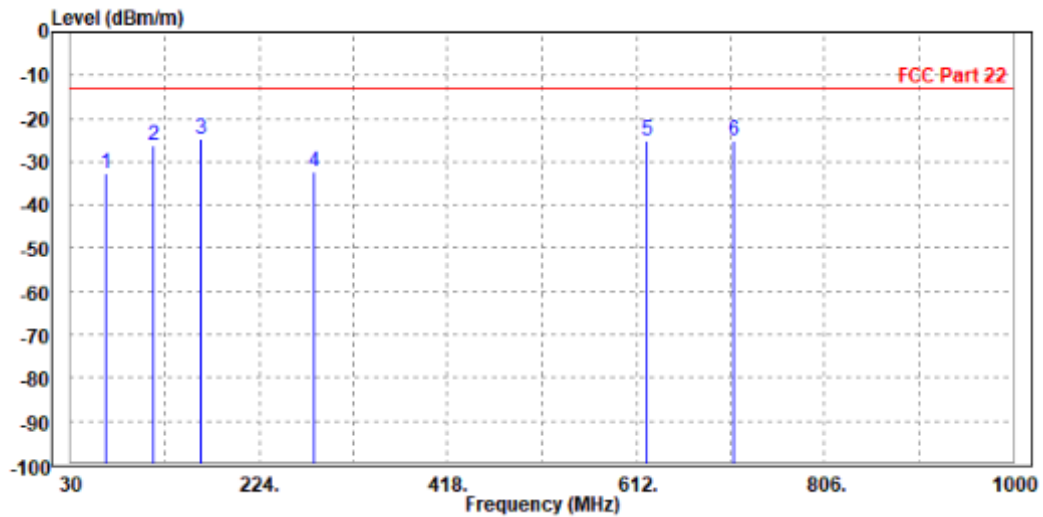
30 MHz – 1GHz data:

GSM 850

CHANNEL BANDWIDTH: 128 ~ 251

<b>MODE</b>	TX channel 128	<b>FREQUENCY RANGE</b>	Below 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	65.890	-32.66	-40.32	-13.00	-19.66	7.66	Peak	Horizontal
2	115.360	-26.08	-34.05	-13.00	-13.08	7.97	Peak	Horizontal
3 PP	164.830	-24.90	-35.63	-13.00	-11.90	10.73	Peak	Horizontal
4	280.260	-32.21	-45.89	-13.00	-19.21	13.68	Peak	Horizontal
5	623.640	-25.05	-46.22	-13.00	-12.05	21.17	Peak	Horizontal
6	711.910	-25.26	-48.04	-13.00	-12.26	22.78	Peak	Horizontal



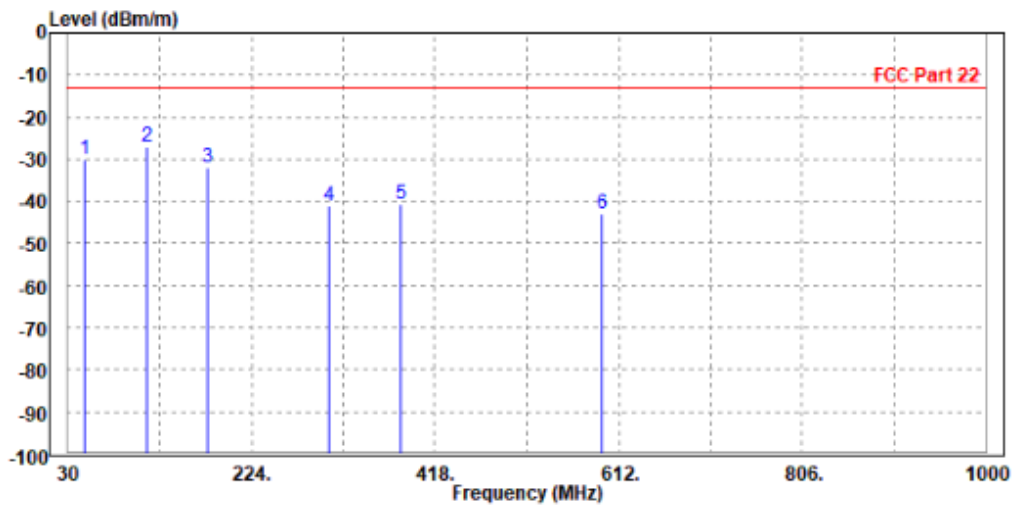


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**Test Report No.: W7L-P21080006RF15**

<b>MODE</b>	TX channel 128	<b>FREQUENCY RANGE</b>	Below 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	47.460	-30.09	-39.90	-13.00	-17.09	9.81	Peak	Vertical
2	PP 113.420	-26.87	-35.07	-13.00	-13.87	8.20	Peak	Vertical
3	177.440	-31.94	-42.39	-13.00	-18.94	10.45	Peak	Vertical
4	306.450	-40.88	-56.02	-13.00	-27.88	15.14	Peak	Vertical
5	381.140	-40.81	-57.60	-13.00	-27.81	16.79	Peak	Vertical
6	594.540	-42.80	-63.60	-13.00	-29.80	20.80	Peak	Vertical





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ABOVE 1GHz DATA

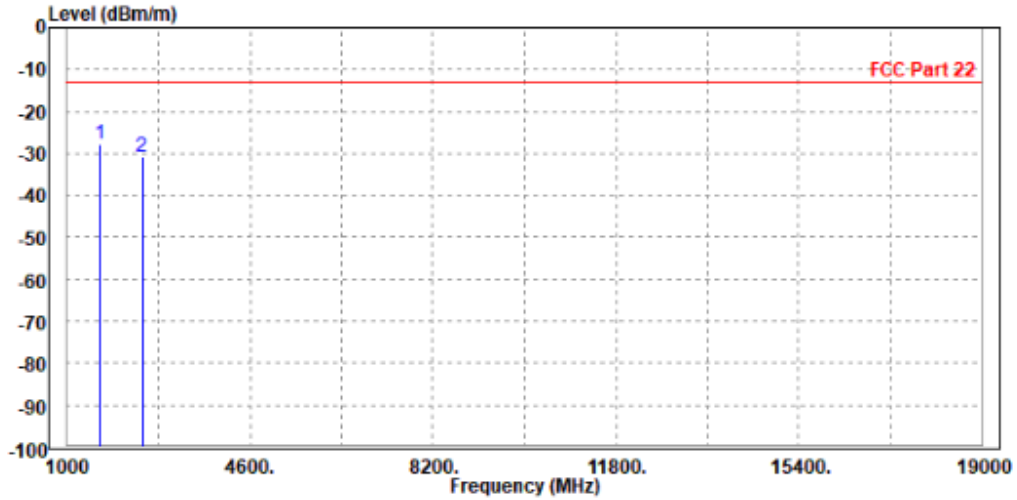
Note: For higher frequency, the emission is too low to be detected.

GSM 850

CH 128:

MODE	TX channel 128	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1648.000	-27.76	-31.01	-13.00	-14.76	3.25	Peak	Horizontal
2	2472.600	-30.89	-38.91	-13.00	-17.89	8.02	Peak	Horizontal



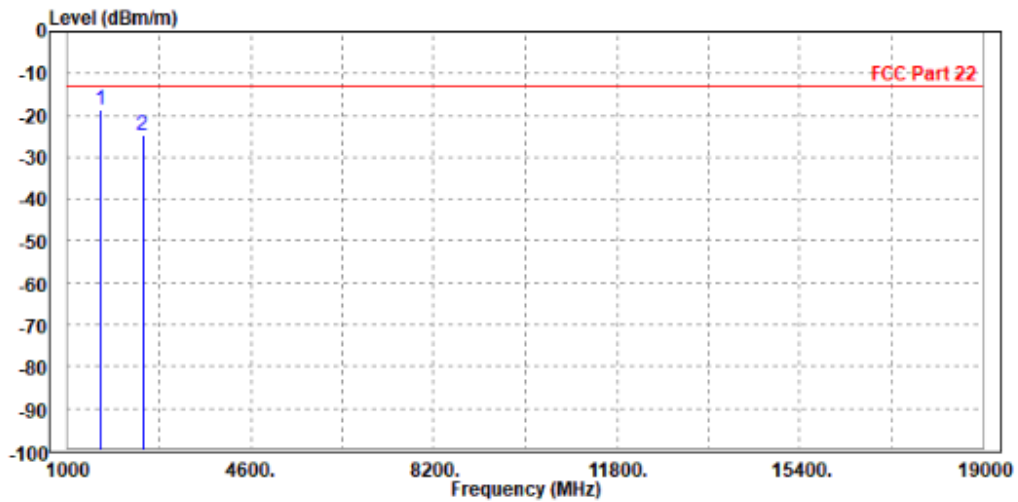


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**Test Report No.: W7L-P21080006RF15**

<b>MODE</b>	TX channel 128	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1648.000	-18.53	-21.91	-13.00	-5.53	3.38	Peak	Vertical
2	2472.600	-24.62	-31.66	-13.00	-11.62	7.04	Peak	Vertical





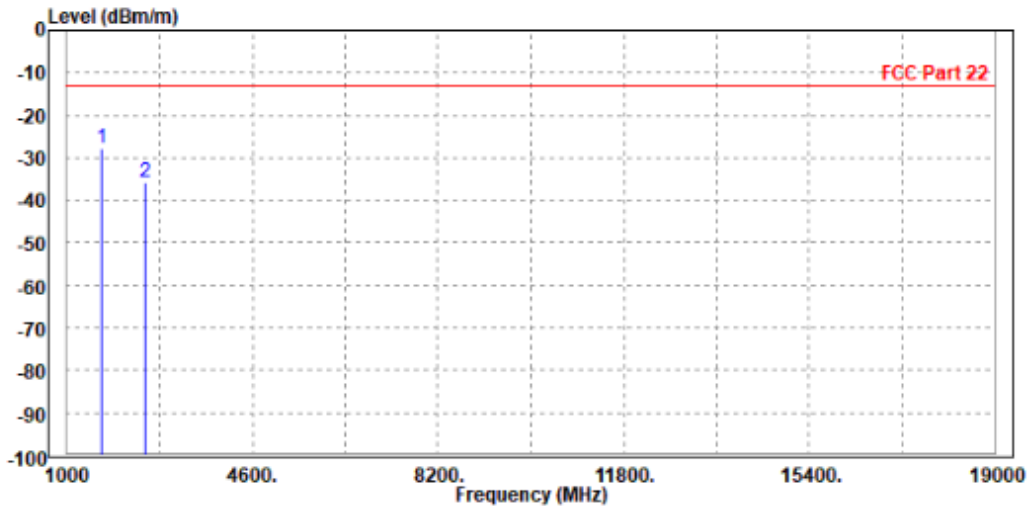
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**CH 189:**

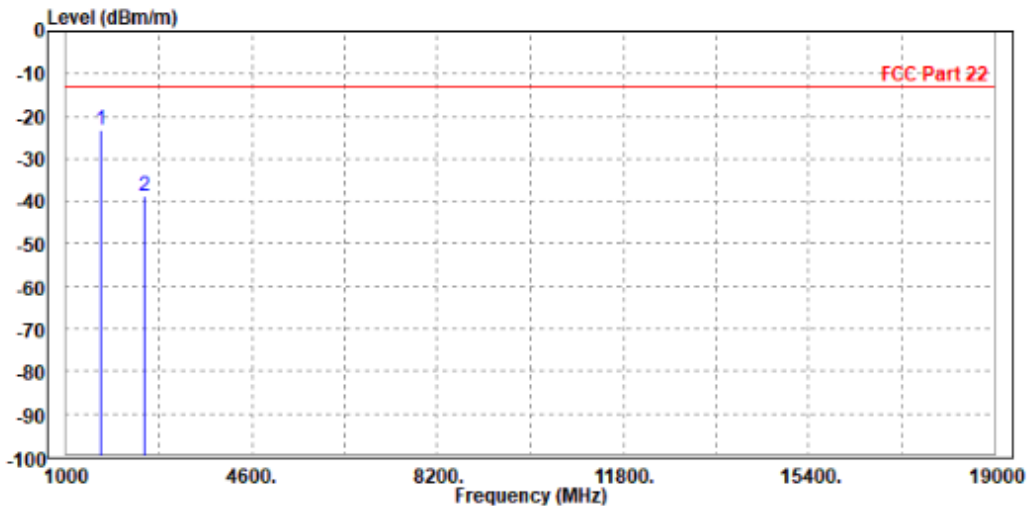
<b>MODE</b>	TX channel 189	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1666.000	-27.81	-31.28	-13.00	-14.81	3.47	Peak	Horizontal
2	2509.200	-35.93	-43.99	-13.00	-22.93	8.06	Peak	Horizontal



<b>MODE</b>	TX channel 189	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1666.000	-23.28	-26.82	-13.00	-10.28	3.54	Peak	Vertical
2	2509.200	-38.89	-45.99	-13.00	-25.89	7.10	Peak	Vertical







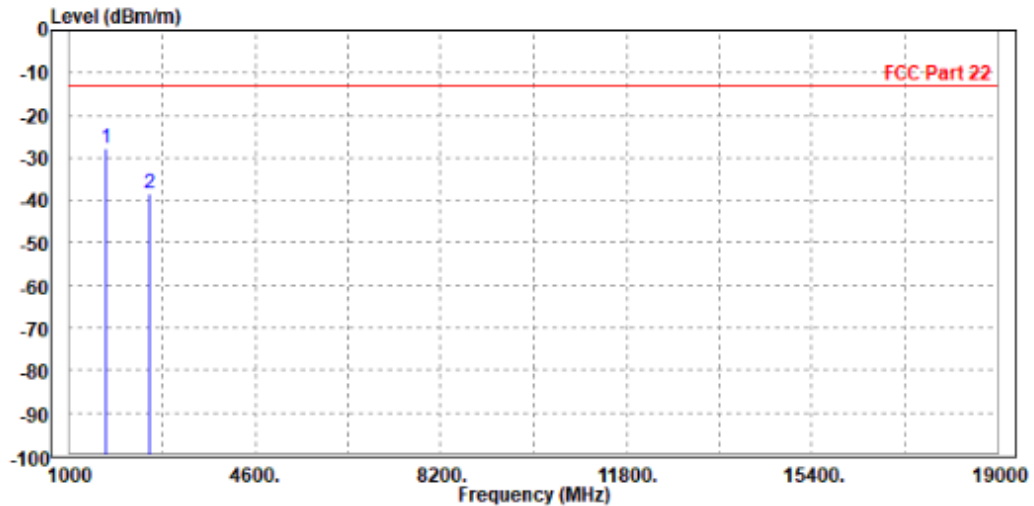
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**Test Report No.: W7L-P21080006RF15**

**CH 251:**

<b>MODE</b>	TX channel 251	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

		Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	Remark	Pol/Phase
MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1702.000	-27.71	-31.62	-13.00	-14.71	3.91 Peak	Horizontal
2	2546.400	-38.58	-46.69	-13.00	-25.58	8.11 Peak	Horizontal



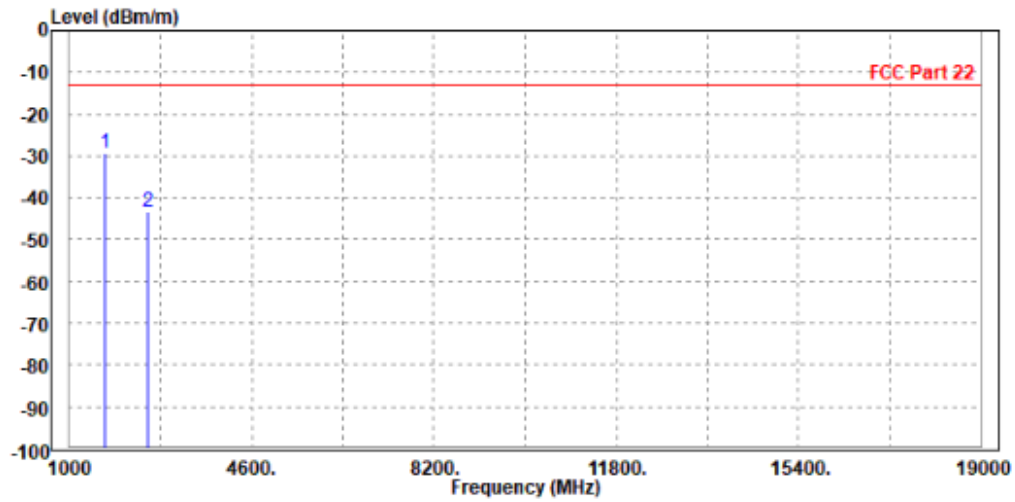


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**Test Report No.: W7L-P21080006RF15**

<b>MODE</b>	TX channel 251	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1702.000	-29.29	-33.16	-13.00	-16.29	3.87	Peak	Vertical
2	2546.400	-43.53	-50.75	-13.00	-30.53	7.22	Peak	Vertical





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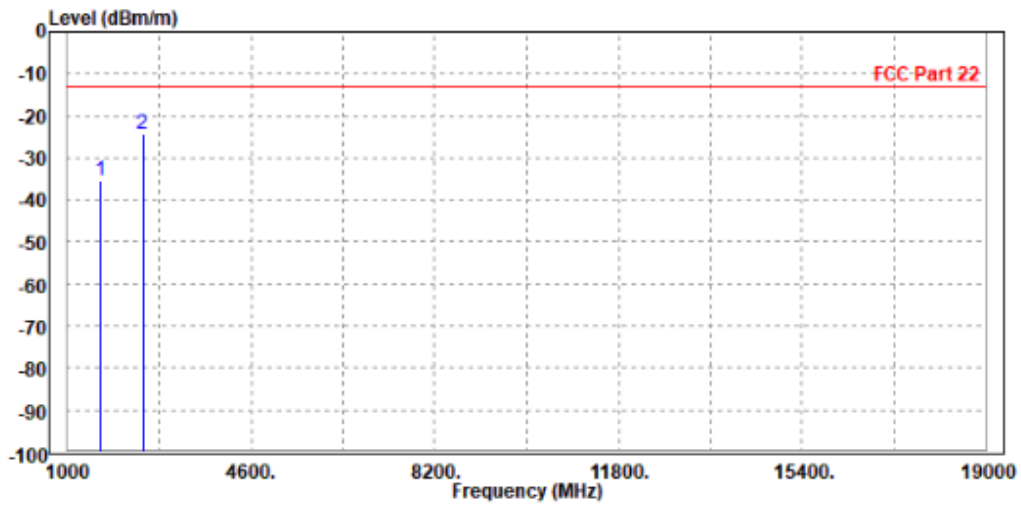
Test Report No.: W7L-P21080006RF15

EDGE 850:

CH 128:

MODE	TX channel 128	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1648.000	-35.42	-38.67	-13.00	-22.42	3.25	Peak	Horizontal
2 PP	2472.600	-24.39	-32.41	-13.00	-11.39	8.02	Peak	Horizontal



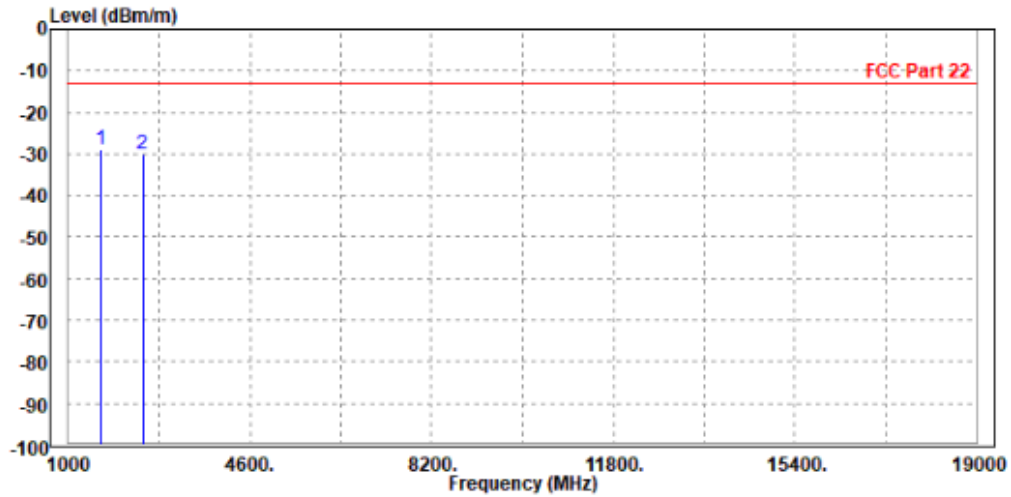


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Test Report No.: W7L-P21080006RF15

MODE	TX channel 128	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 PP 1648.000	-28.99	-32.37	-13.00	-15.99	3.38	Peak Vertical
2 2472.600	-29.90	-36.94	-13.00	-16.90	7.04	Peak Vertical





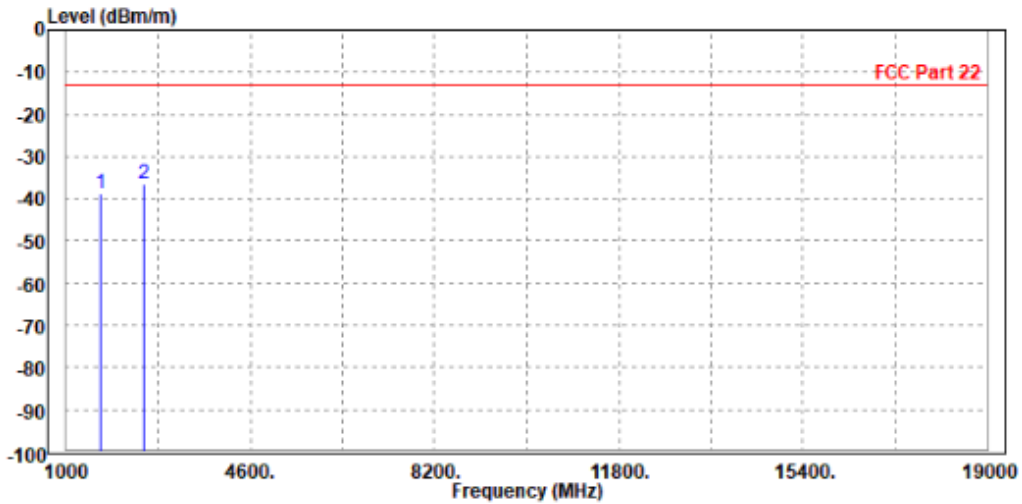
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Test Report No.: W7L-P21080006RF15

**CH 189:**

<b>MODE</b>	TX channel 189	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-38.71	-42.18	-13.00	-25.71	3.47	Peak	Horizontal
2 PP	2509.800	-36.46	-44.52	-13.00	-23.46	8.06	Peak	Horizontal



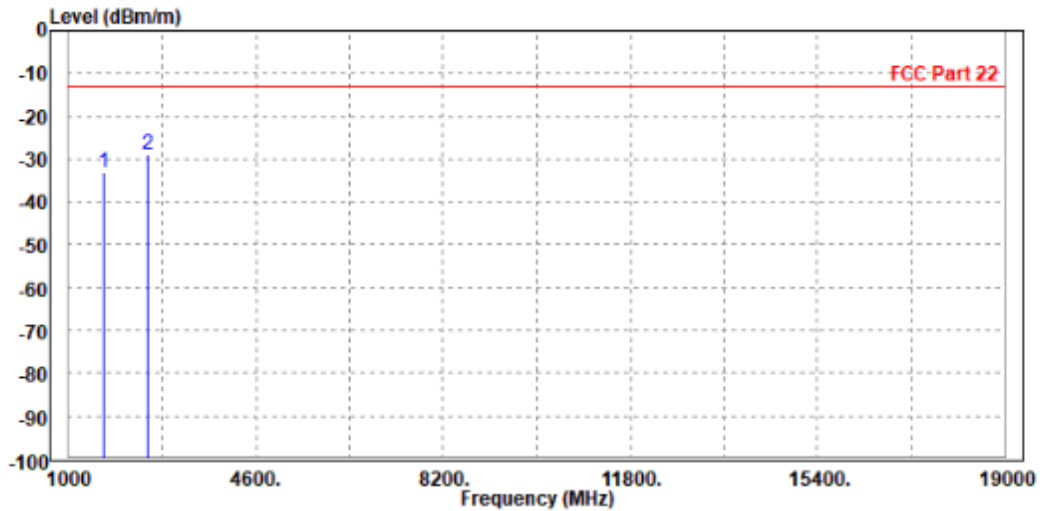


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Test Report No.: W7L-P21080006RF15

MODE	TX channel 189	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-33.18	-36.72	-13.00	-20.18	3.54	Peak	Vertical
2	PP 2509.200	-28.75	-35.85	-13.00	-15.75	7.10	Peak	Vertical





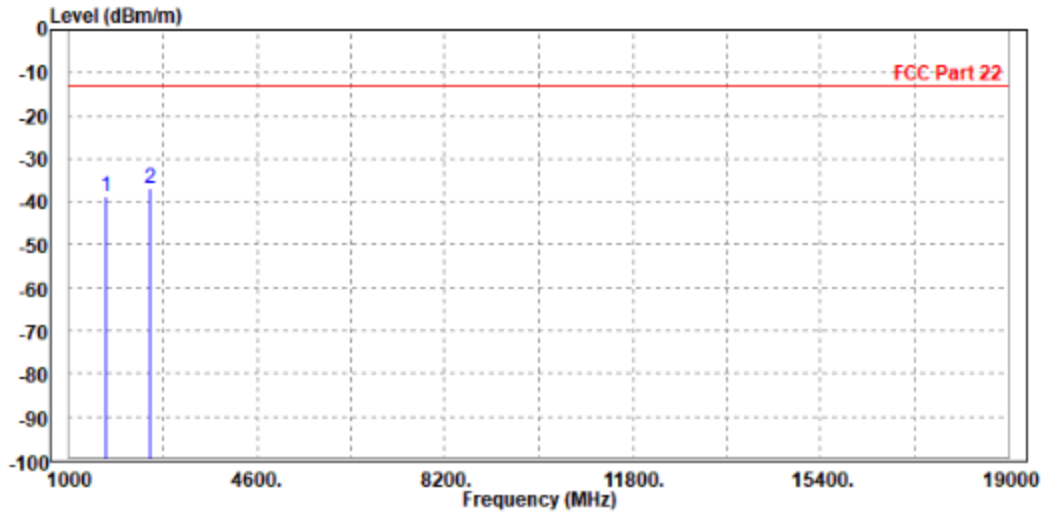
**BUREAU  
VERITAS**

Test Report No.: W7L-P21080006RF15

**CH 251:**

<b>MODE</b>	TX channel 251	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1702.000	-38.80	-42.71	-13.00	-25.80	3.91	Peak	Horizontal
2	PP 2546.400	-36.82	-44.93	-13.00	-23.82	8.11	Peak	Horizontal



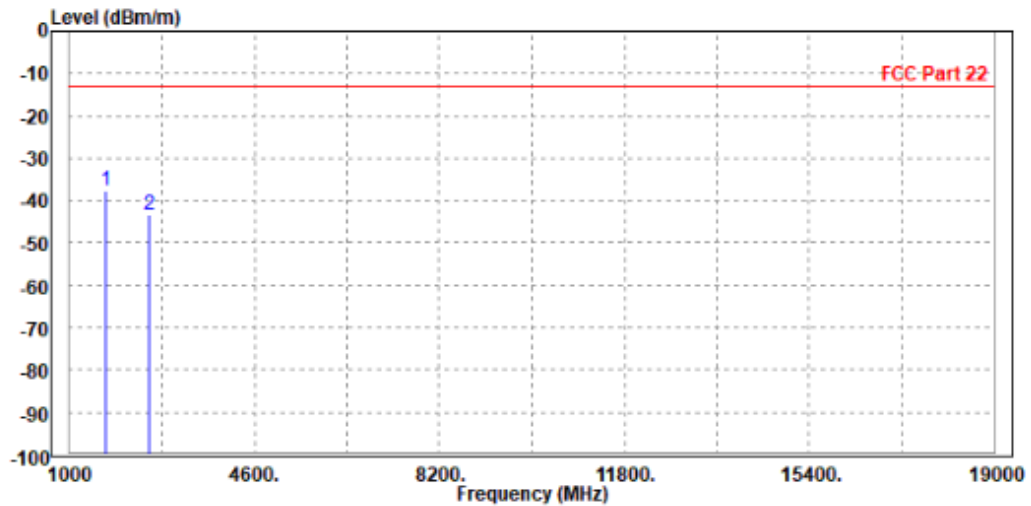


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**Test Report No.: W7L-P21080006RF15**

<b>MODE</b>	TX channel 251	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1702.000	-37.72	-41.59	-13.00	-24.72	3.87	Peak	Vertical
2	2546.400	-43.52	-50.74	-13.00	-30.52	7.22	Peak	Vertical





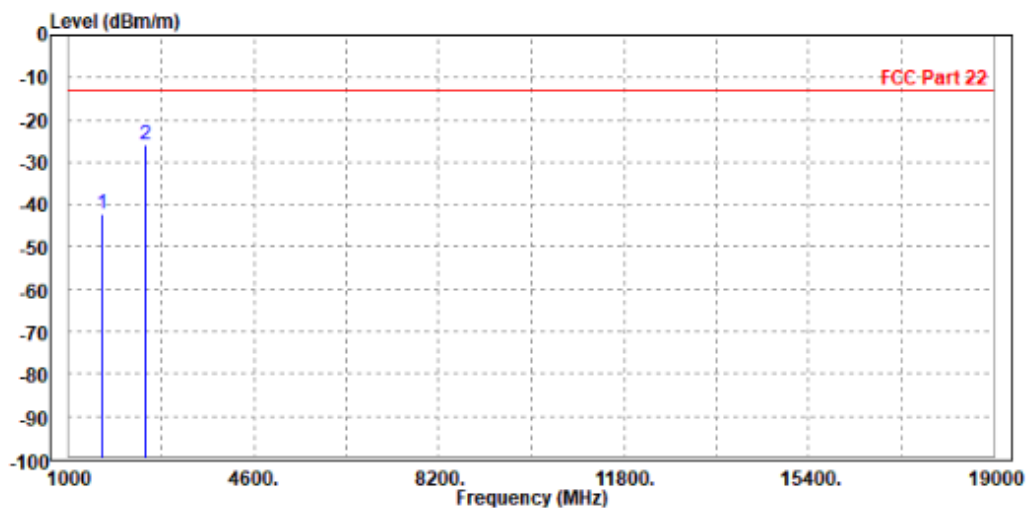


WCDMA Band V:

CH 4132:

<b>MODE</b>	TX channel 4132	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1648.000	-42.05	-45.30	-13.00	-29.05	3.25	Peak	Horizontal
2 PP	2479.200	-25.86	-33.89	-13.00	-12.86	8.03	Peak	Horizontal



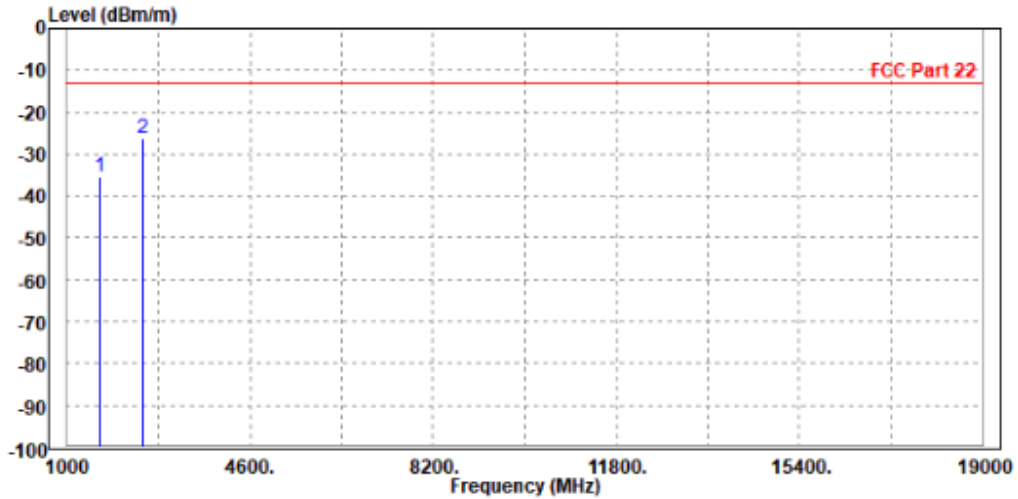


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**Test Report No.: W7L-P21080006RF15**

<b>MODE</b>	TX channel 4132	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1648.000	-35.31	-38.69	-13.00	-22.31	3.38	Peak	Vertical
2 PP	2479.200	-26.22	-33.27	-13.00	-13.22	7.05	Peak	Vertical





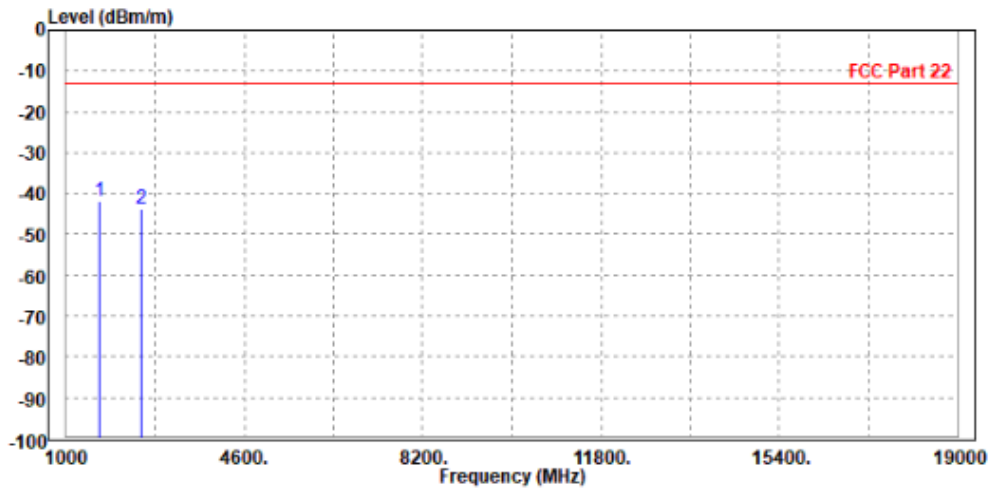
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VERITAS**

Test Report No.: W7L-P21080006RF15

**CH 4182:**

<b>MODE</b>	TX channel 4182	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1666.000	-41.88	-45.35	-13.00	-28.88	3.47	Peak	Horizontal
2	2509.200	-43.67	-51.73	-13.00	-30.67	8.06	Peak	Horizontal



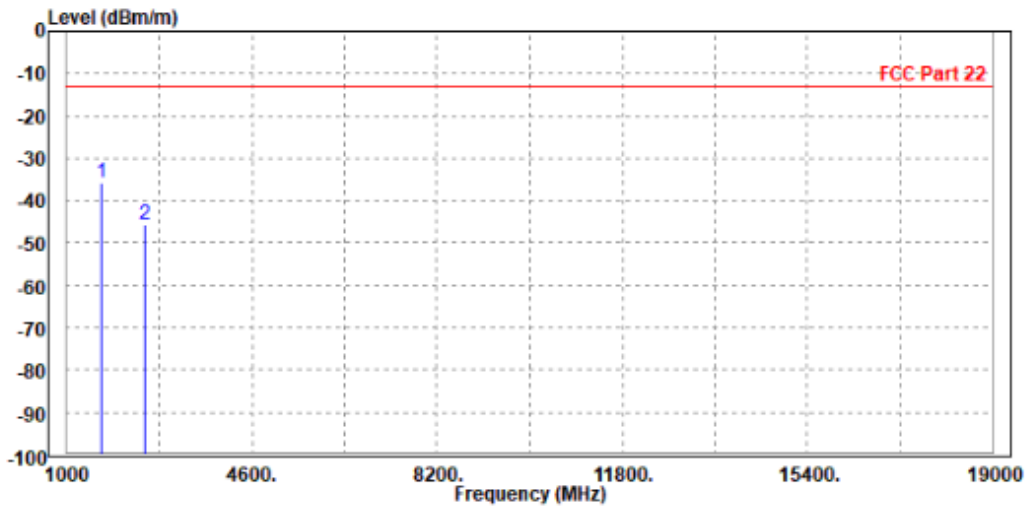


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**Test Report No.: W7L-P21080006RF15**

<b>MODE</b>	TX channel 4182	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1666.000	-35.73	-39.27	-13.00	-22.73	3.54	Peak	Vertical
2	2509.200	-45.80	-52.90	-13.00	-32.80	7.10	Peak	Vertical





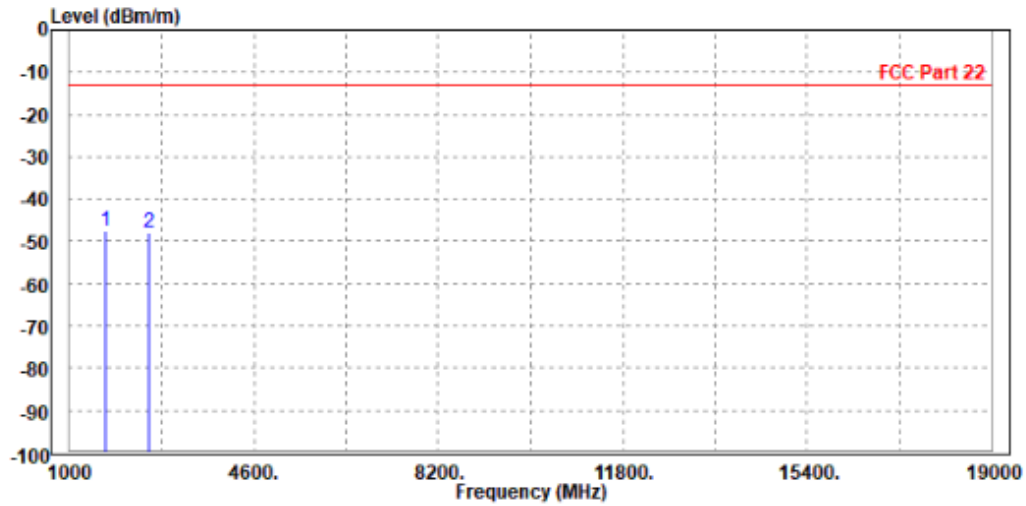
**BUREAU  
VERITAS**

Test Report No.: W7L-P21080006RF15

CH 4233:

<b>MODE</b>	TX channel 4233	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm/m	dBm	dBm/m	dB	dB/m	Pol/Phase
1 PP 1702.000	-47.66	-51.57	-13.00	-34.66	3.91	Peak Horizontal
2 2539.800	-47.97	-56.07	-13.00	-34.97	8.10	Peak Horizontal



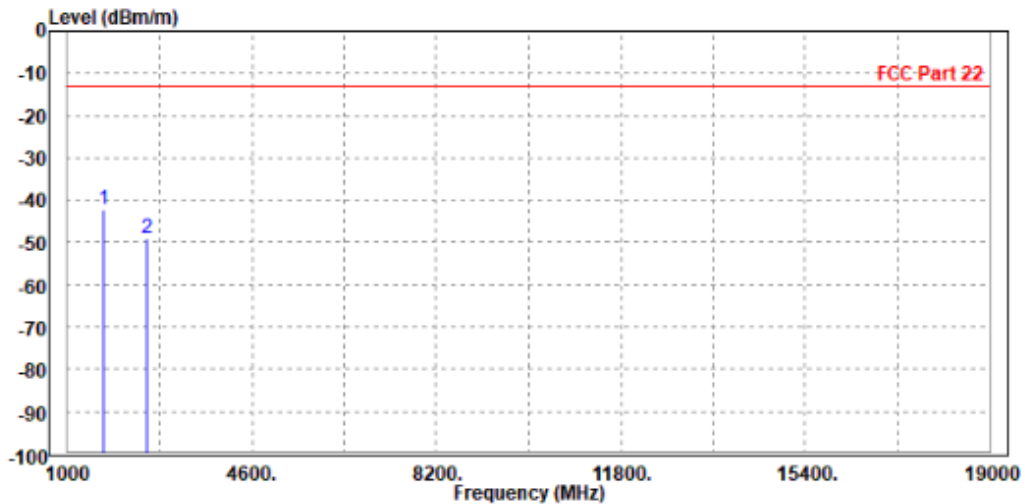


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Test Report No.: W7L-P21080006RF15

<b>MODE</b>	TX channel 4233	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1702.000	-42.06	-45.93	-13.00	-29.06	3.87	Peak	Vertical
2	2539.800	-48.91	-56.11	-13.00	-35.91	7.20	Peak	Vertical





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**Test Report No.: W7L-P21080006RF15**

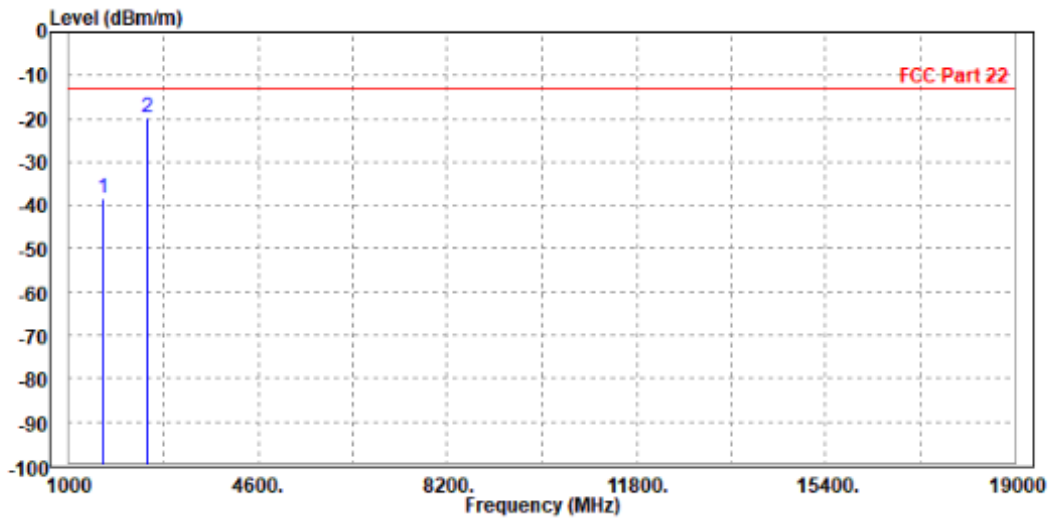
**LTE Band 5**

**CHANNEL BANDWIDTH: 1.4MHz / QPSK**

**CH 20407**

<b>MODE</b>	TX channel 20407	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1648.000	-38.25	-41.50	-13.00	-25.25	3.25	Peak	Horizontal
2 PP	2474.100	-19.83	-27.85	-13.00	-6.83	8.02	Peak	Horizontal



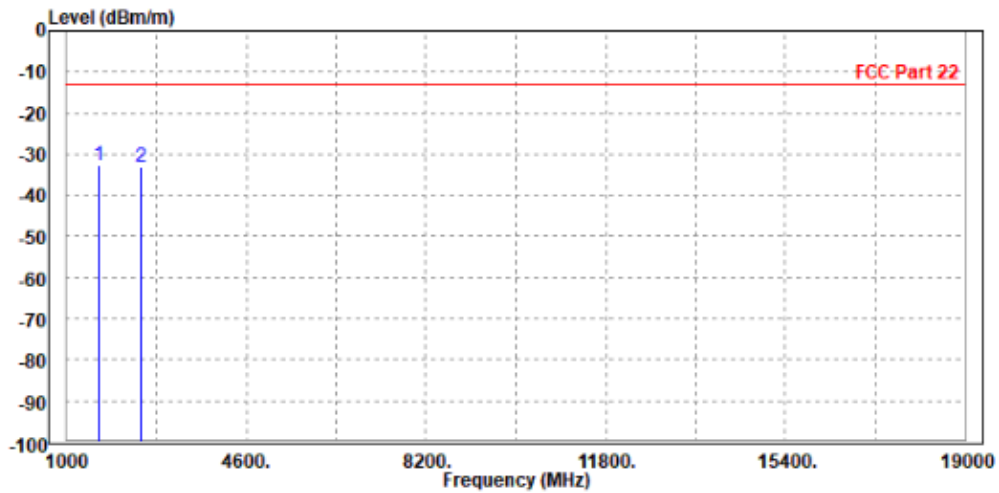


**BUREAU  
VERITAS**

**Test Report No.: W7L-P21080006RF15**

<b>MODE</b>	TX channel 20407	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1648.000	-32.72	-36.10	-13.00	-19.72	3.38	Peak	Vertical
2	2474.100	-32.98	-40.02	-13.00	-19.98	7.04	Peak	Vertical







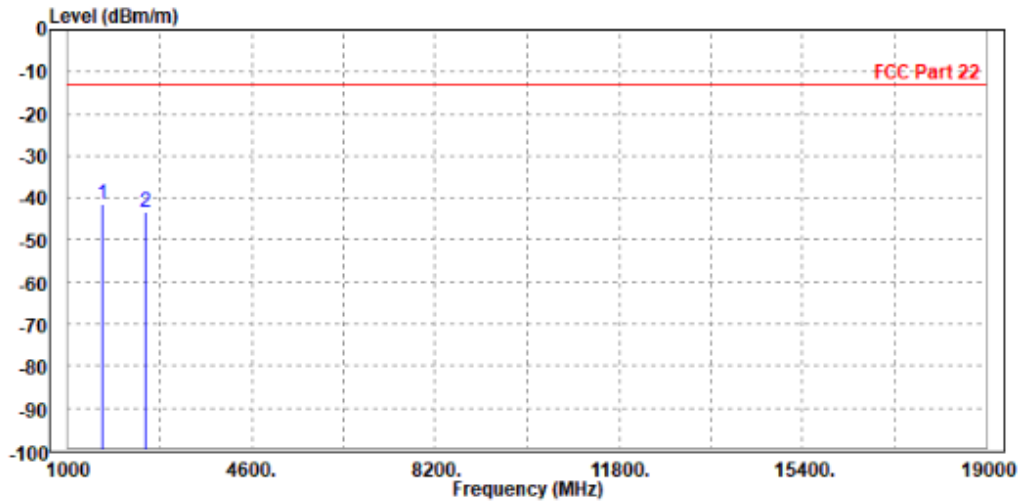
**BUREAU  
VERITAS**

Test Report No.: W7L-P21080006RF15

CH 20525

<b>MODE</b>	TX channel 20525	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1666.000	-41.29	-44.76	-13.00	-28.29	3.47	Peak	Horizontal
2	2509.500	-43.28	-51.34	-13.00	-30.28	8.06	Peak	Horizontal



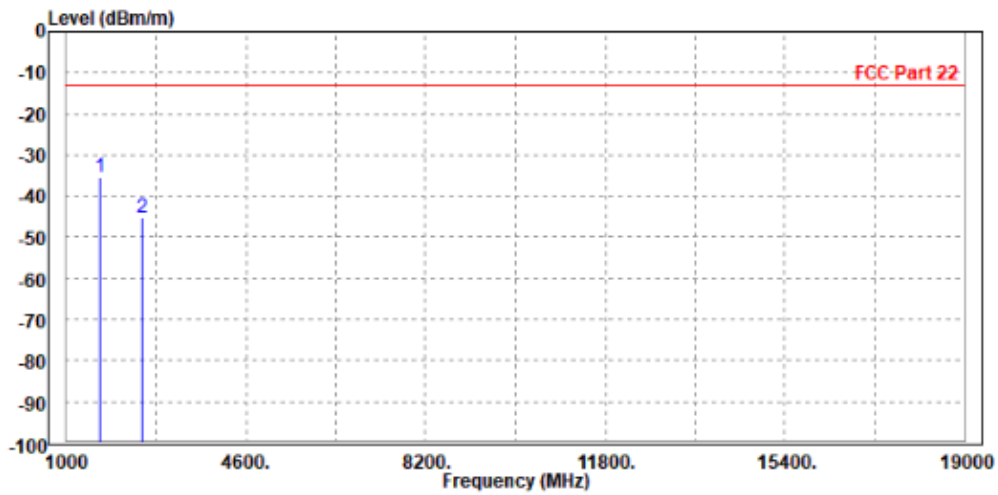


BUREAU VERITAS

Test Report No.: W7L-P21080006RF15

MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1666.000	-35.50	-39.04	-13.00	-22.50	3.54	Peak	Vertical
2	2509.500	-45.12	-52.22	-13.00	-32.12	7.10	Peak	Vertical





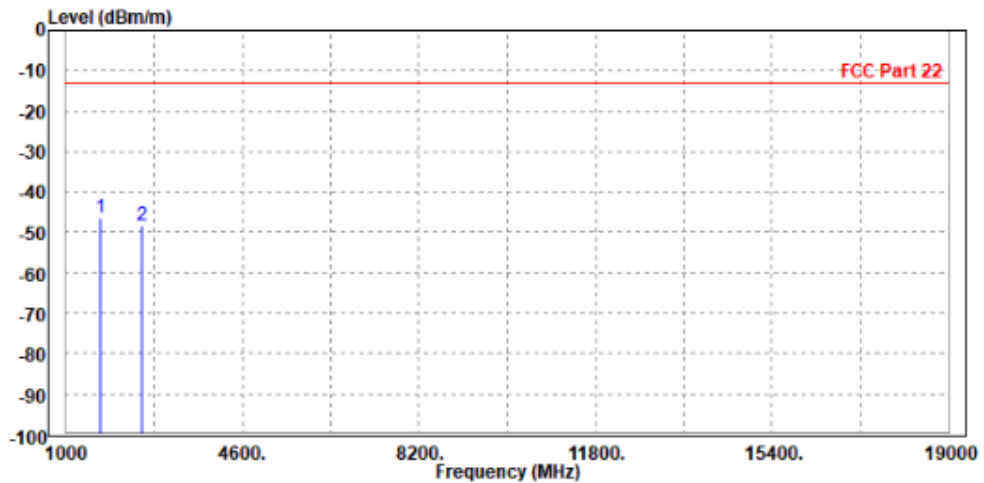
BUREAU  
VERITAS

Test Report No.: W7L-P21080006RF15

CH 20643

MODE	TX channel 20643	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1702.000	-46.51	-50.42	-13.00	-33.51	3.91	Peak	Horizontal
2	2544.900	-48.26	-56.37	-13.00	-35.26	8.11	Peak	Horizontal



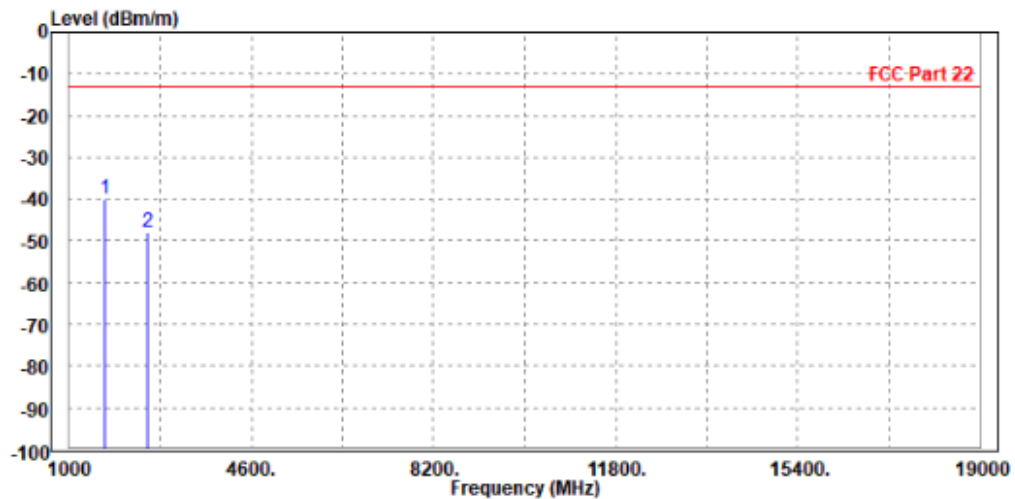


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VERITAS**

**Test Report No.: W7L-P21080006RF15**

<b>MODE</b>	TX channel 20643	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1702.000	-39.90	-43.77	-13.00	-26.90	3.87	Peak	Vertical
2	2544.900	-48.09	-55.30	-13.00	-35.09	7.21	Peak	Vertical





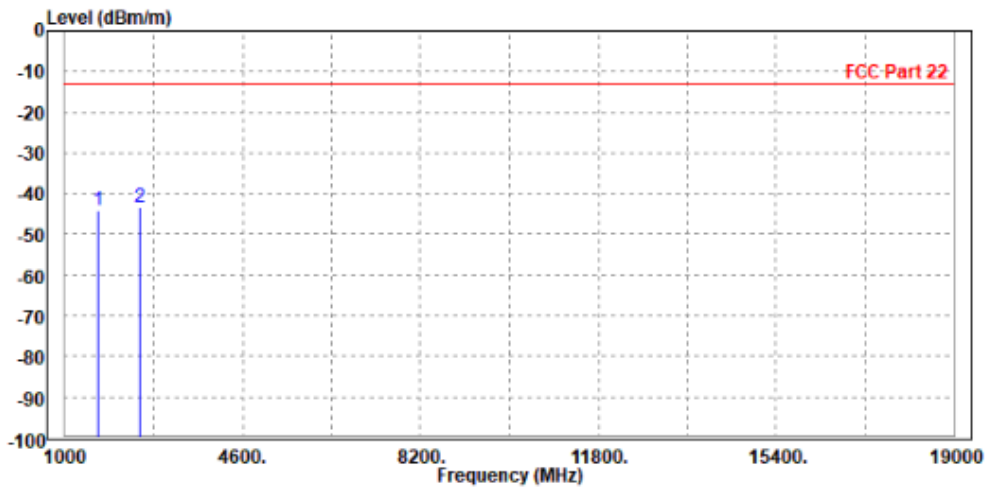
BUREAU VERITAS

Test Report No.: W7L-P21080006RF15

CHANNEL BANDWIDTH: 3MHz / QPSK

MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-44.09	-47.56	-13.00	-31.09	3.47	Peak	Horizontal
2 PP	2509.500	-43.26	-51.32	-13.00	-30.26	8.06	Peak	Horizontal



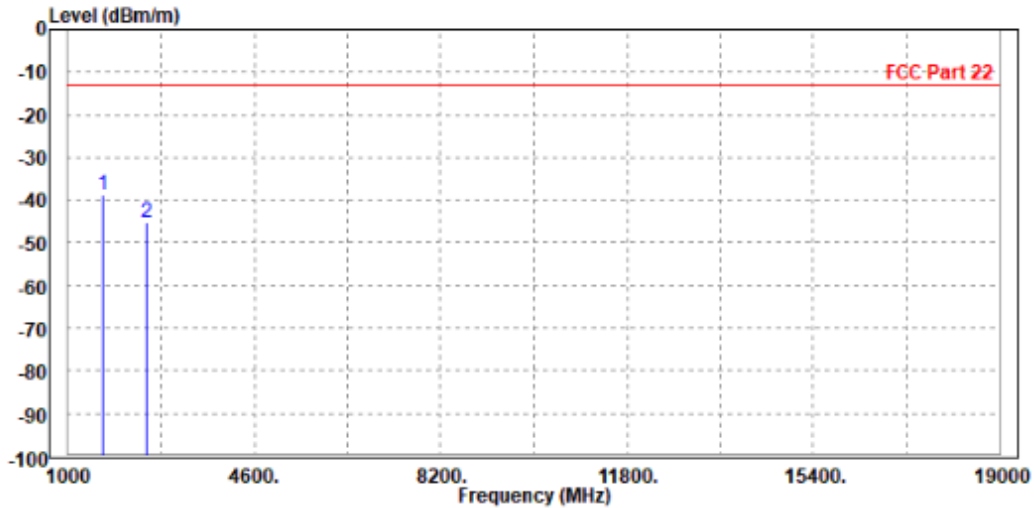


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VERITAS**

**Test Report No.: W7L-P21080006RF15**

<b>MODE</b>	TX channel 20525	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1666.000	-38.77	-42.31	-13.00	-25.77	3.54	Peak	Vertical
2	2509.500	-45.09	-52.19	-13.00	-32.09	7.10	Peak	Vertical





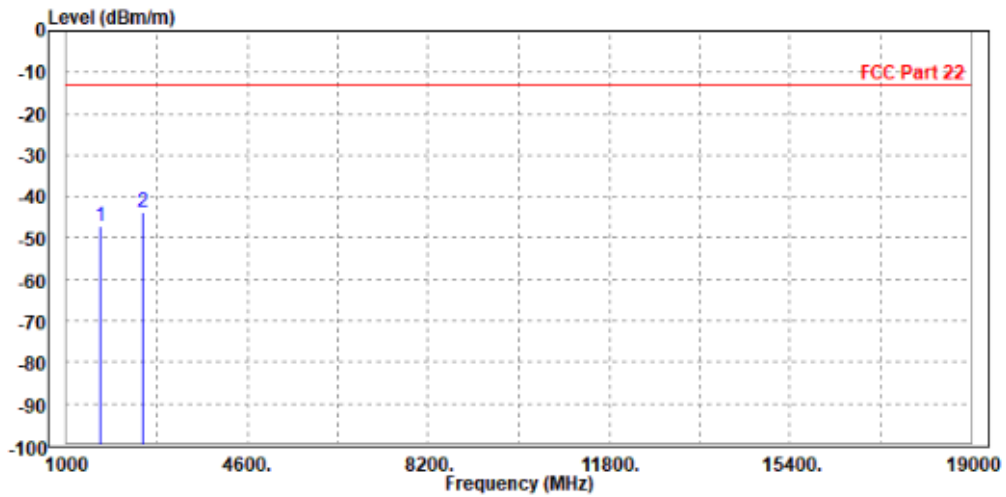
BUREAU VERITAS

Test Report No.: W7L-P21080006RF15

CHANNEL BANDWIDTH: 5MHz / QPSK

MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-47.11	-50.58	-13.00	-34.11	3.47	Peak	Horizontal
2 PP	2509.500	-43.59	-51.65	-13.00	-30.59	8.06	Peak	Horizontal



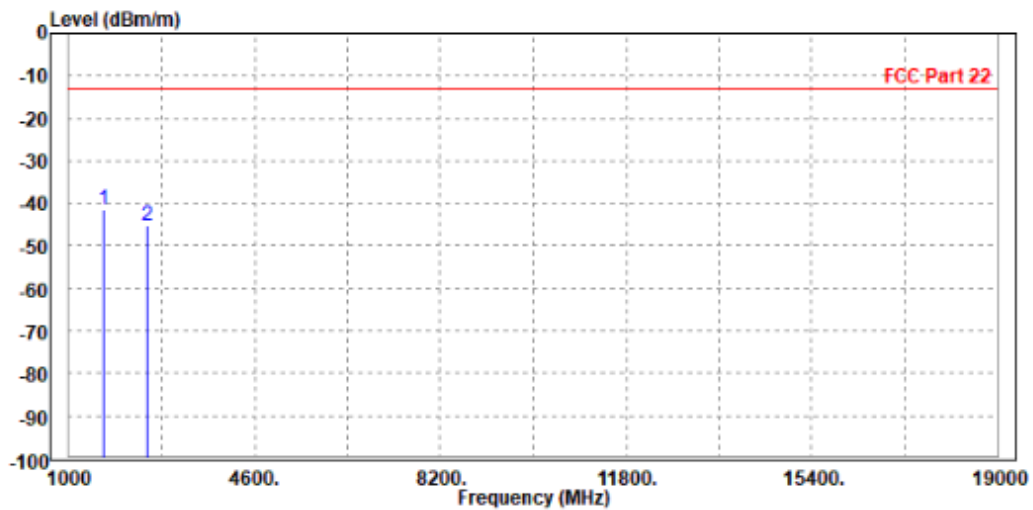


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VERITAS**

**Test Report No.: W7L-P21080006RF15**

<b>MODE</b>	TX channel 20525	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1666.000	-41.45	-44.99	-13.00	-28.45	3.54	Peak	Vertical
2	2509.500	-45.37	-52.47	-13.00	-32.37	7.10	Peak	Vertical







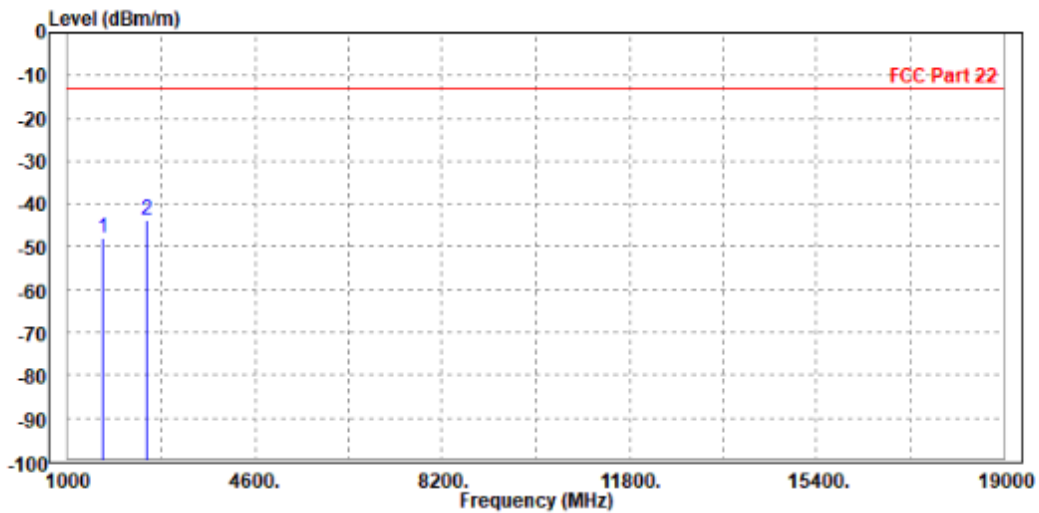
**BUREAU  
VERITAS**

Test Report No.: W7L-P21080006RF15

**CHANNEL BANDWIDTH: 10MHz / QPSK**

<b>MODE</b>	TX channel 20525	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-47.96	-51.43	-13.00	-34.96	3.47	Peak	Horizontal
2 PP	2509.500	-43.67	-51.73	-13.00	-30.67	8.06	Peak	Horizontal



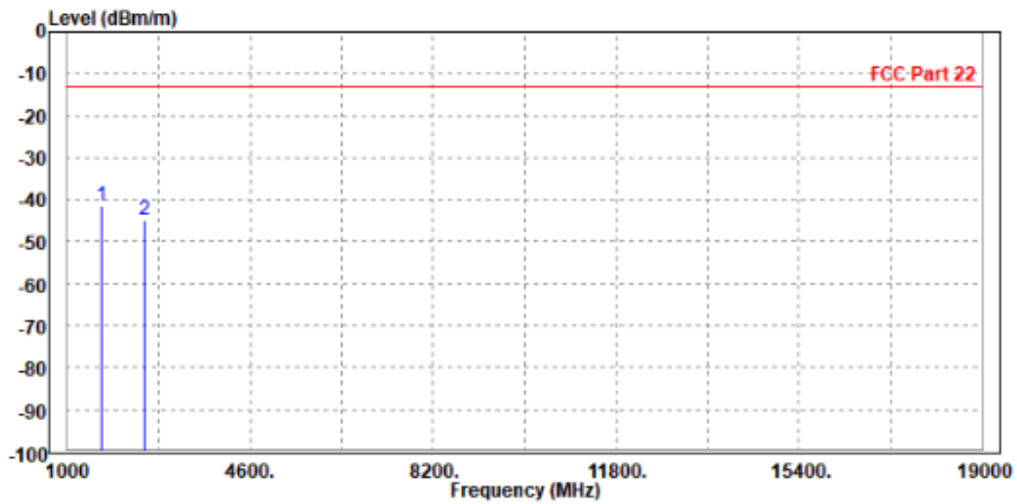


**BUREAU  
VERITAS**

**Test Report No.: W7L-P21080006RF15**

<b>MODE</b>	TX channel 20525	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 PP 1666.000	-41.46	-45.00	-13.00	-28.46	3.54	Peak Vertical
2 2509.500	-45.03	-52.13	-13.00	-32.03	7.10	Peak Vertical





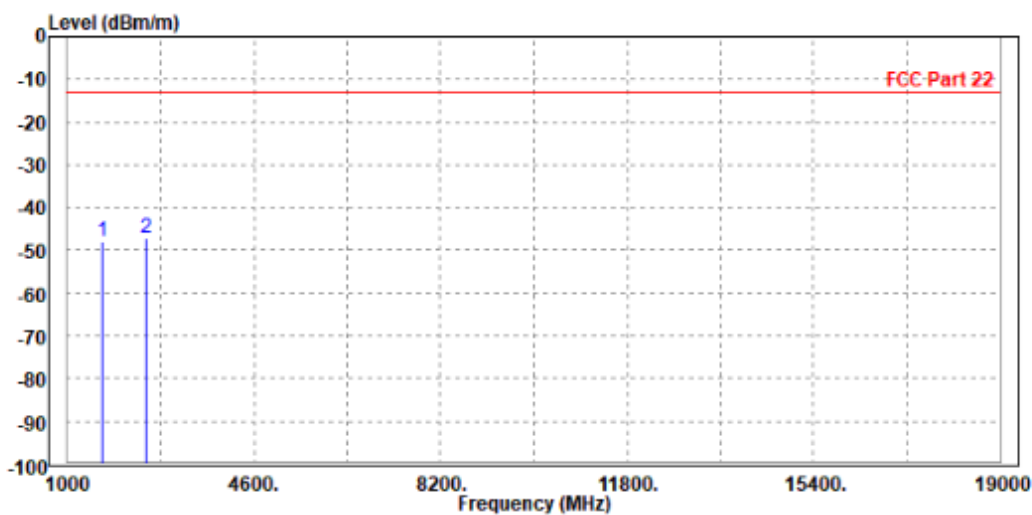
Test Report No.: W7L-P21080006RF15

LTE Band 26

CHANNEL BANDWIDTH: 1.4MHz / QPSK

MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-47.90	-51.37	-13.00	-34.90	3.47	Peak	Horizontal
2 PP	2509.200	-47.23	-55.29	-13.00	-34.23	8.06	Peak	Horizontal

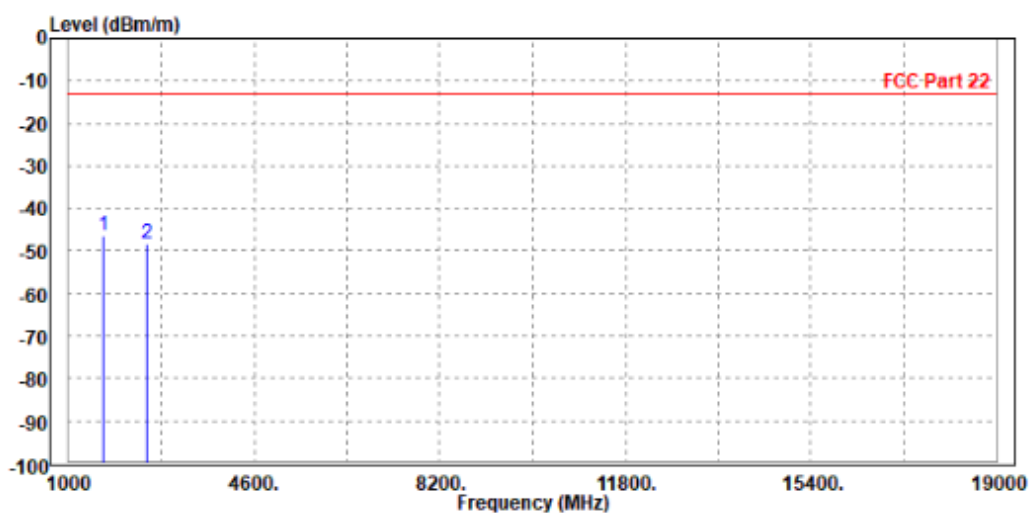




Test Report No.: W7L-P21080006RF15

<b>MODE</b>	TX channel 26915	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 PP 1666.000	-46.40	-49.94	-13.00	-33.40	3.54	Peak Vertical
2 2509.200	-48.25	-55.35	-13.00	-35.25	7.10	Peak Vertical



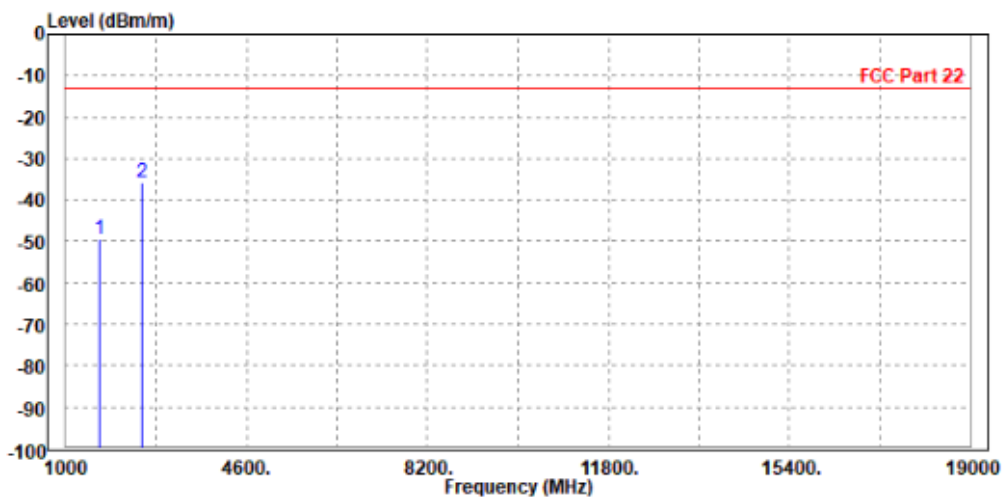


Test Report No.: W7L-P21080006RF15

**CHANNEL BANDWIDTH: 3MHz / QPSK**

<b>MODE</b>	TX channel 26915	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-49.46	-52.93	-13.00	-36.46	3.47	Peak	Horizontal
2 PP	2509.200	-35.60	-43.66	-13.00	-22.60	8.06	Peak	Horizontal



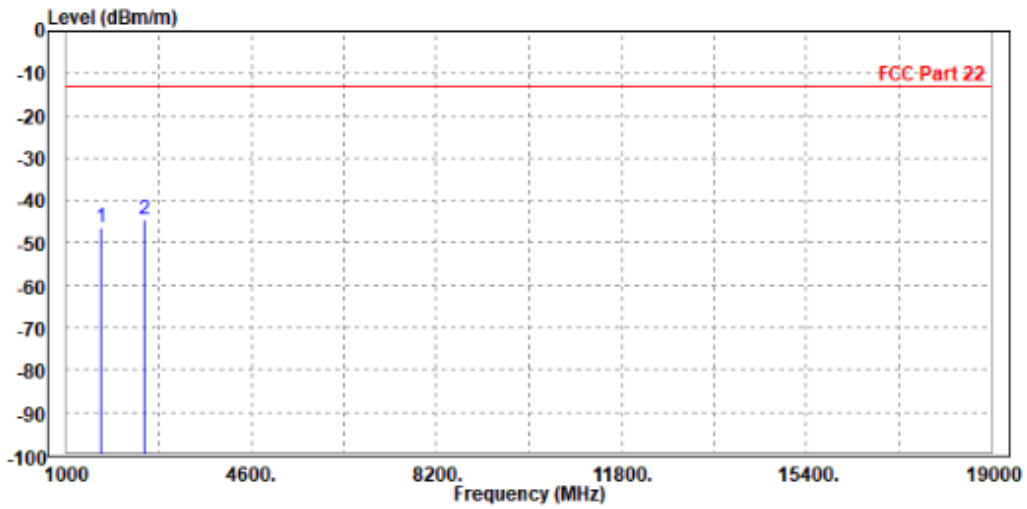


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VERITAS**

**Test Report No.: W7L-P21080006RF15**

<b>MODE</b>	TX channel 26915	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-46.23	-49.77	-13.00	-33.23	3.54	Peak	Vertical
2 PP	2509.200	-44.44	-51.54	-13.00	-31.44	7.10	Peak	Vertical





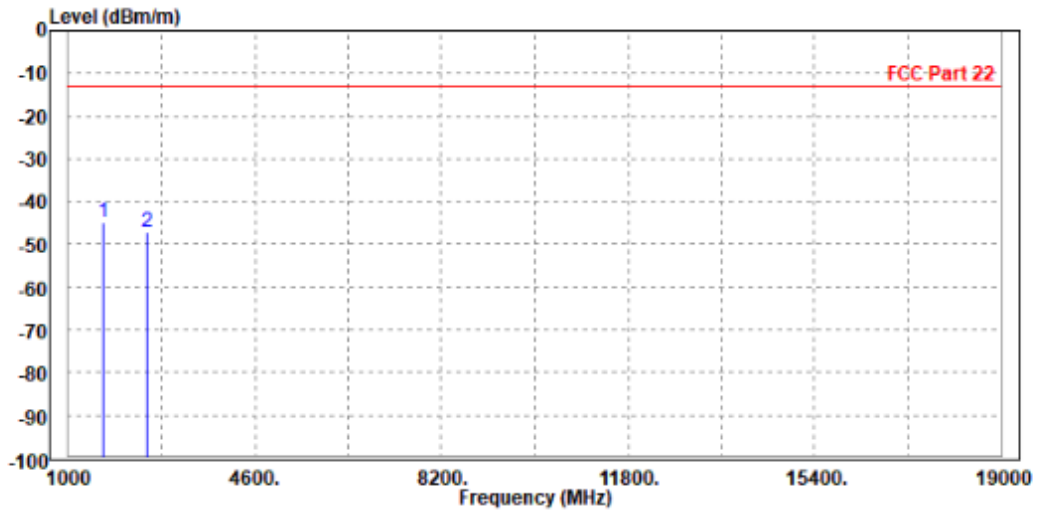
**BUREAU  
VERITAS**

Test Report No.: W7L-P21080006RF15

**CHANNEL BANDWIDTH: 5MHz / QPSK**

<b>MODE</b>	TX channel 26915	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

		Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	Remark	Pol/Phase
MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP 1666.000	-44.98	-48.45	-13.00	-31.98	3.47	Peak	Horizontal
2 2509.200	-47.25	-55.31	-13.00	-34.25	8.06	Peak	Horizontal



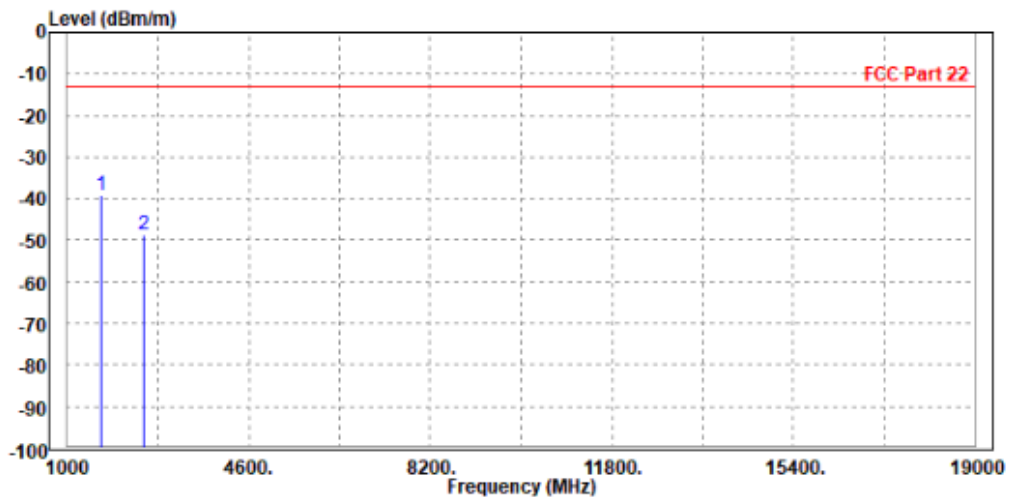


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VERITAS

Test Report No.: W7L-P21080006RF15

MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1666.000	-39.24	-42.78	-13.00	-26.24	3.54	Peak	Vertical
2	2509.200	-48.50	-55.60	-13.00	-35.50	7.10	Peak	Vertical



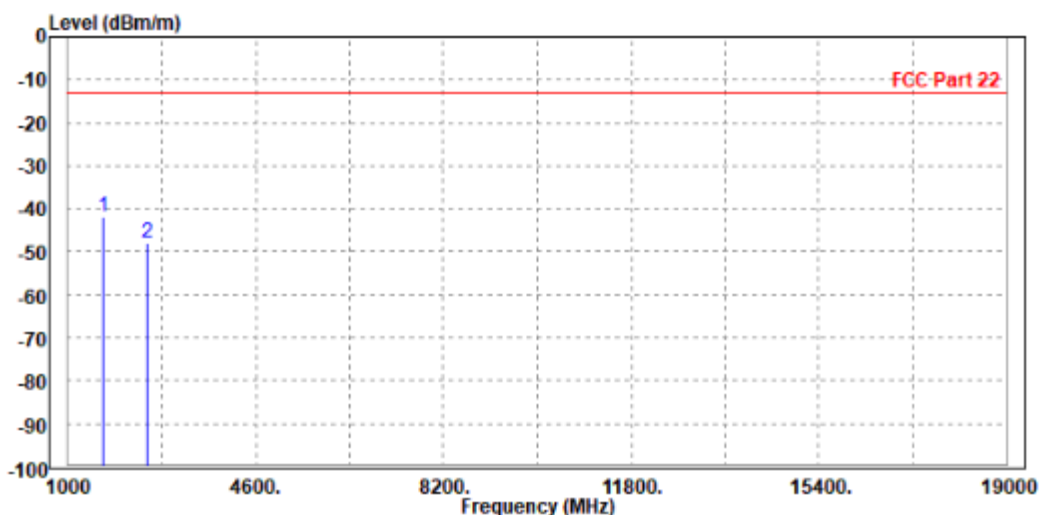




CHANNEL BANDWIDTH: 10MHz / QPSK

MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1666.000	-41.96	-45.50	-13.00	-28.96	3.54	Peak	Horizontal
2	2509.200	-47.86	-54.96	-13.00	-34.86	7.10	Peak	Horizontal

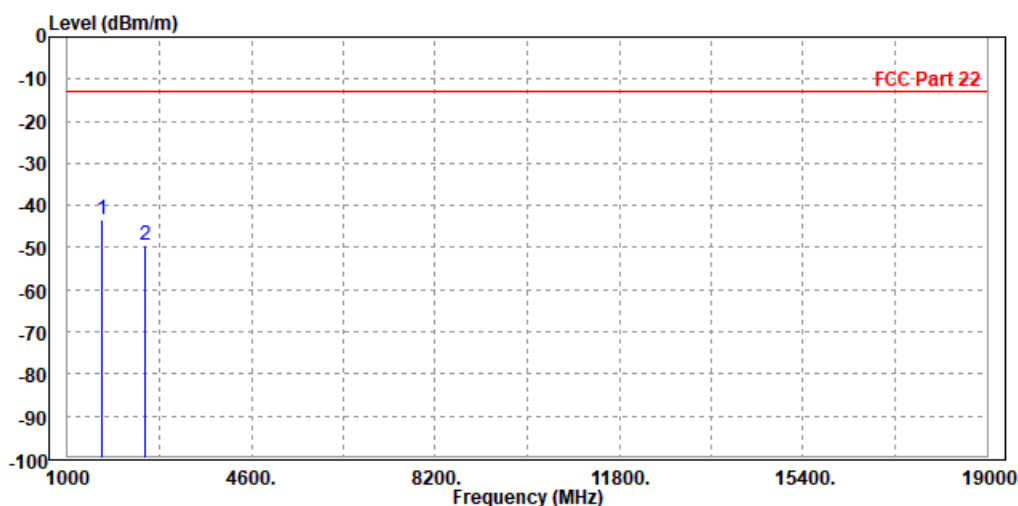




**Test Report No.: W7L-P21080006RF15**

<b>MODE</b>	TX channel 26915	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1666.000	-43.20	-46.74	-13.00	-30.20	3.54	Peak	Vertical
2	2509.200	-49.39	-56.49	-13.00	-36.39	7.10	Peak	Vertical





BUREAU VERITAS

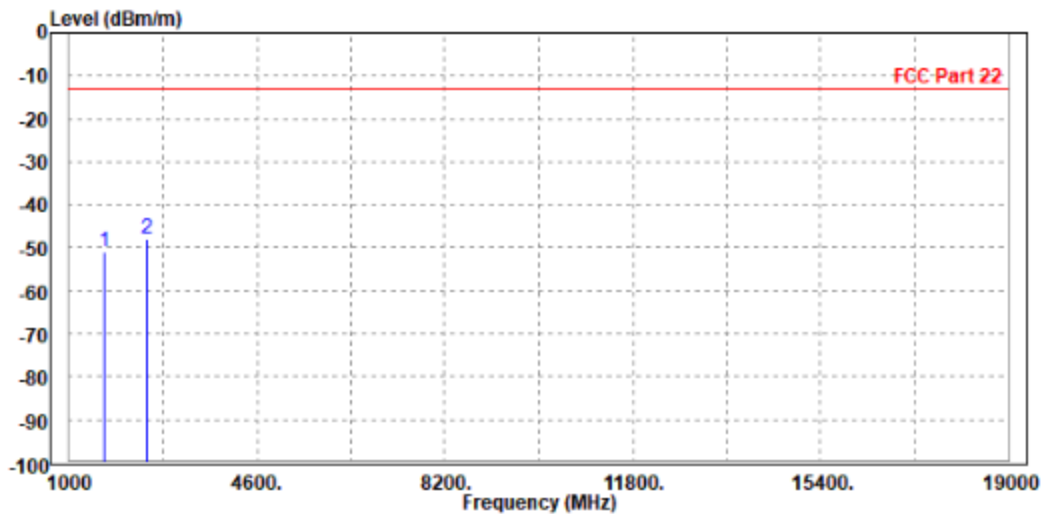
Test Report No.: W7L-P21080006RF15

CHANNEL BANDWIDTH: 15MHz / QPSK

CH26839

MODE	TX channel 26839	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz r
TESTED BY	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-50.86	-54.33	-13.00	-37.86	3.47	Peak	Horizontal
2 PP	2486.700	-47.79	-55.83	-13.00	-34.79	8.04	Peak	Horizontal

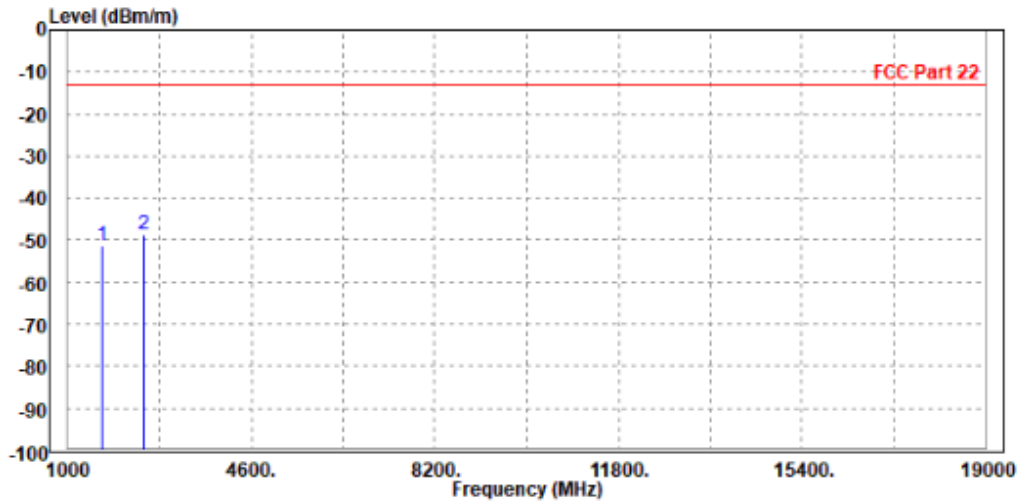




Test Report No.: W7L-P21080006RF15

<b>MODE</b>	TX channel 26839	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-51.46	-55.00	-13.00	-38.46	3.54	Peak	Vertical
2 PP	2486.700	-48.63	-55.68	-13.00	-35.63	7.05	Peak	Vertical



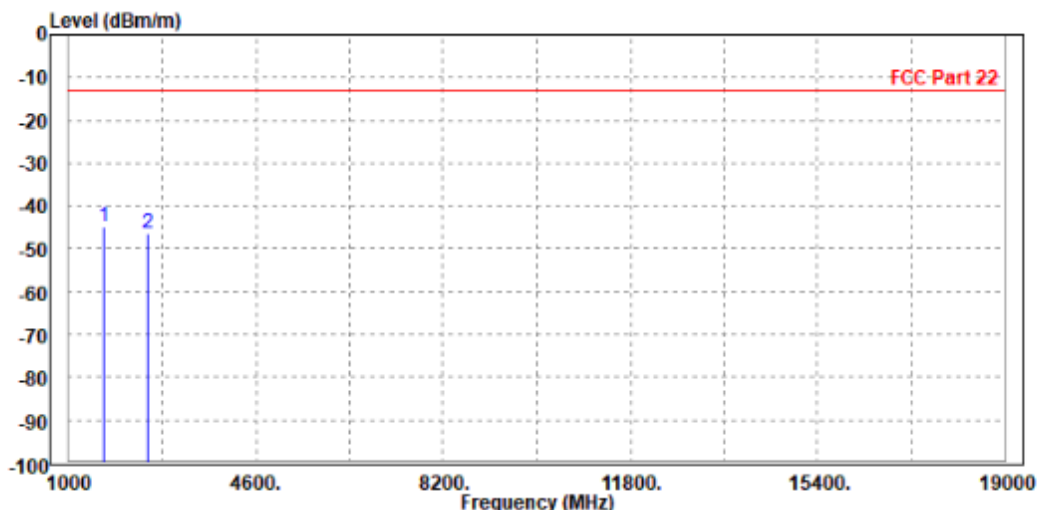


Test Report No.: W7L-P21080006RF15

CH26915

<b>MODE</b>	TX channel 26915	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1666.000	-44.76	-48.23	-13.00	-31.76	3.47	Peak	Horizontal
2	2509.200	-46.34	-54.40	-13.00	-33.34	8.06	Peak	Horizontal

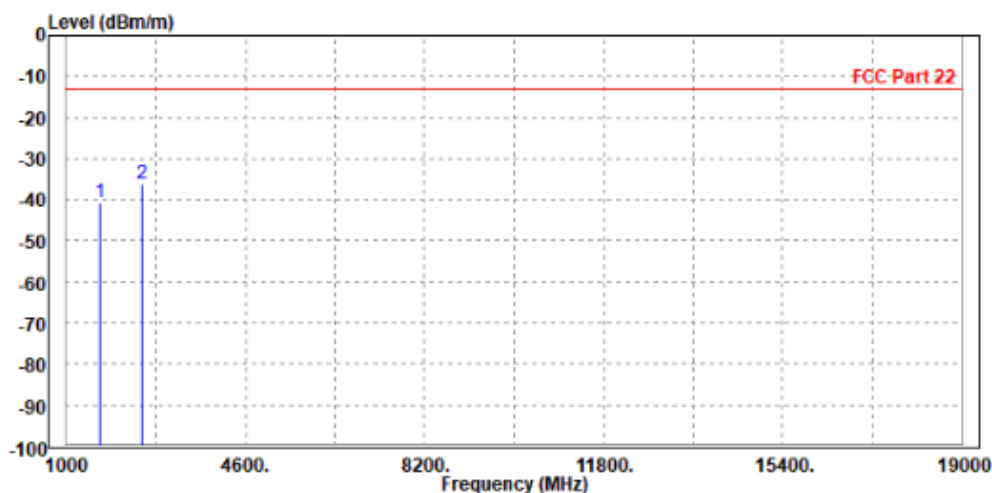




Test Report No.: W7L-P21080006RF15

<b>MODE</b>	TX channel 26915	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-40.63	-44.17	-13.00	-27.63	3.54	Peak	Vertical
2 PP	2509.200	-36.19	-43.29	-13.00	-23.19	7.10	Peak	Vertical



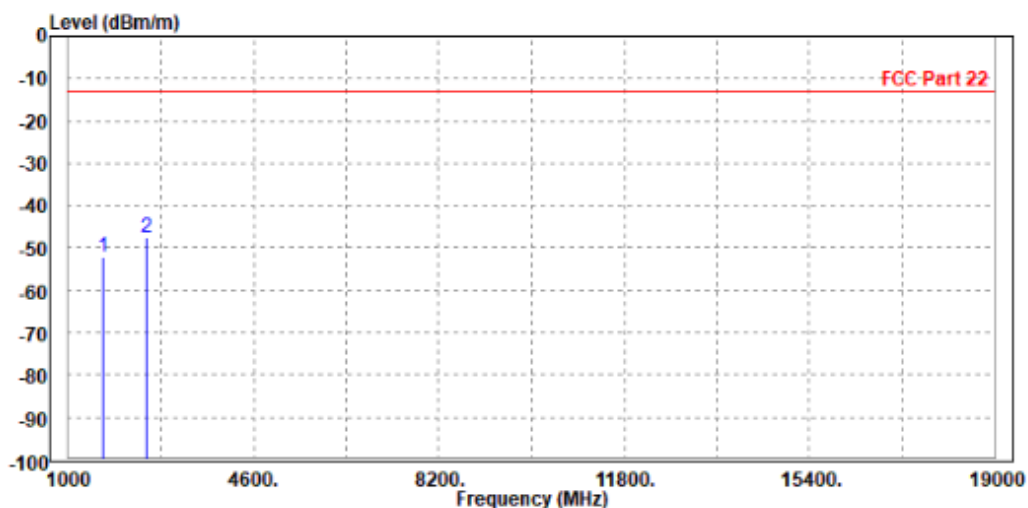


Test Report No.: W7L-P21080006RF15

CH26989

<b>MODE</b>	TX channel 26989	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1684.000	-51.92	-55.61	-13.00	-38.92	3.69	Peak	Horizontal
2 PP	2531.700	-47.55	-55.64	-13.00	-34.55	8.09	Peak	Horizontal

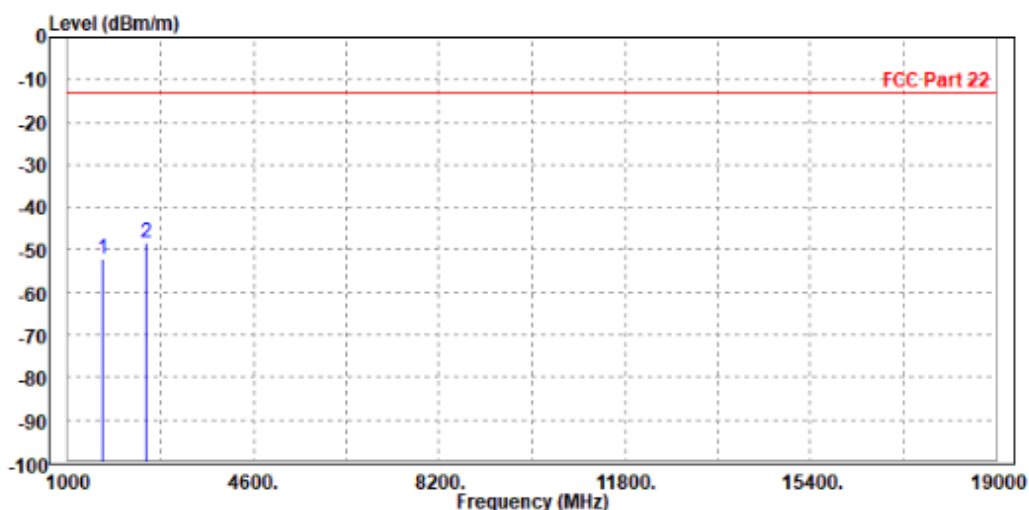




Test Report No.: W7L-P21080006RF15

<b>MODE</b>	TX channel 26989	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60Hz
<b>TESTED BY</b>	Jace Hu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1684.000	-51.91	-55.62	-13.00	-38.91	3.71	Peak	Vertical
2 PP	2531.700	-48.42	-55.59	-13.00	-35.42	7.17	Peak	Vertical



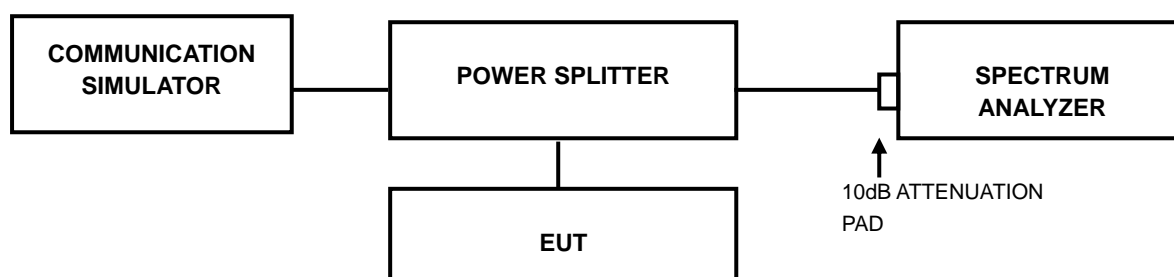


### 3.7 PEAK TO AVERAGE RATIO

#### 3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

#### 3.7.2 TEST SETUP



#### 3.7.3 TEST PROCEDURES

1. Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.



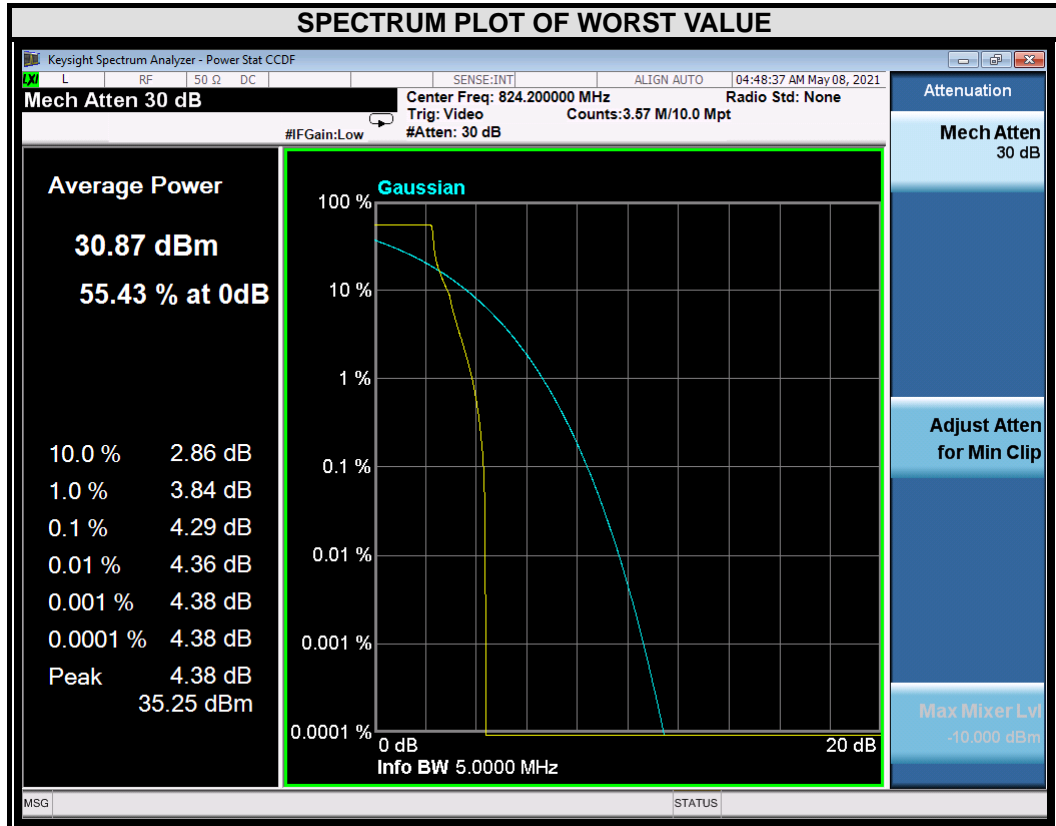
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### 3.7.4 TEST RESULTS

#### GSM

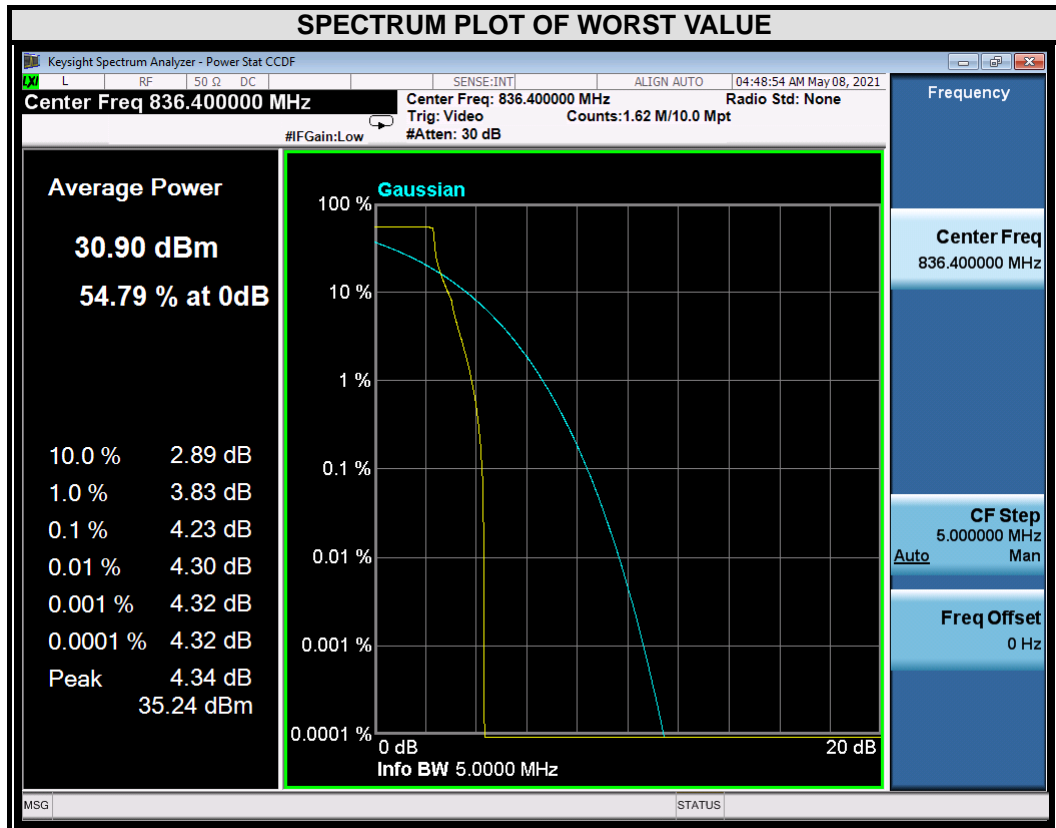
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
128	824.2	4.29





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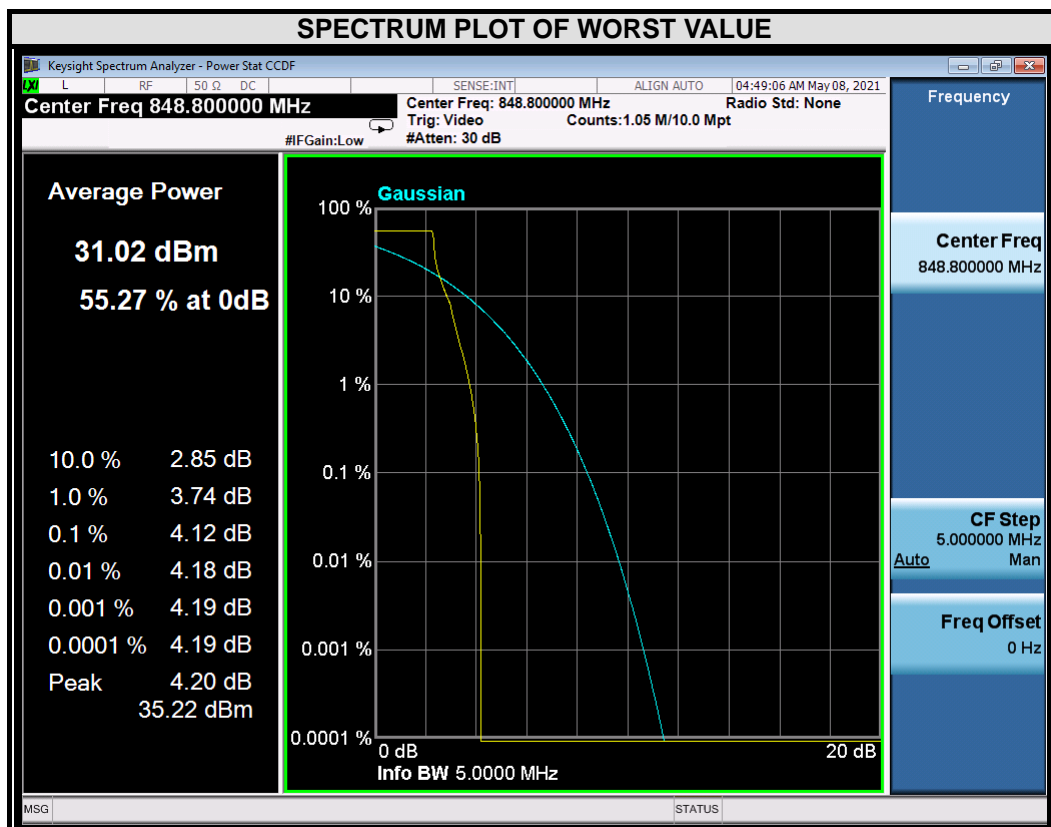
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
189	836.4	4.23





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CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
251	848.8	4.12



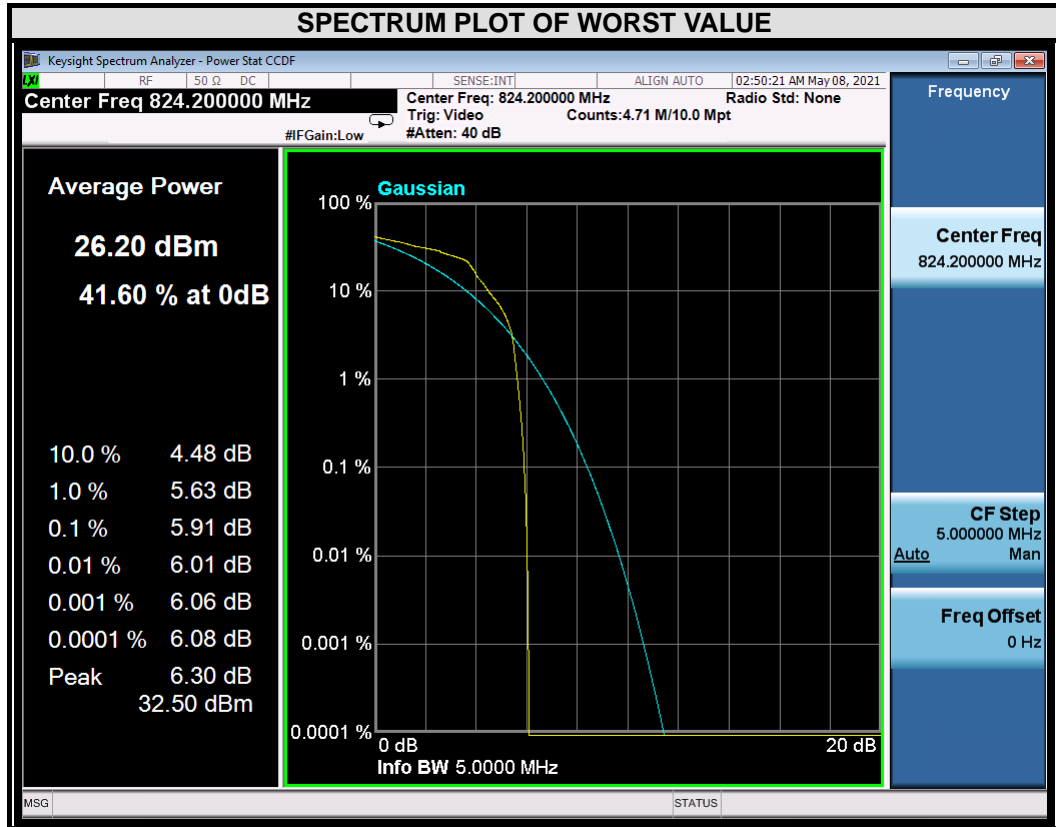


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Test Report No.: W7L-P21080006RF15

EDGE

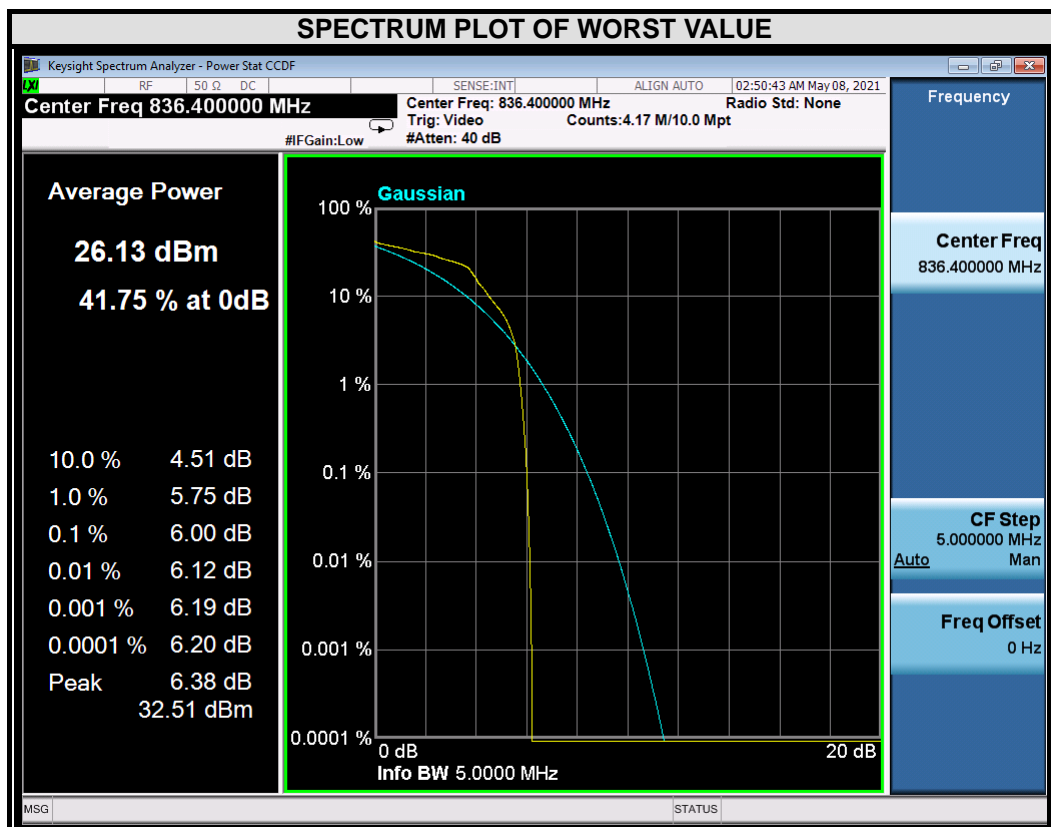
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
128	824.2	5.91





Test Report No.: W7L-P21080006RF15

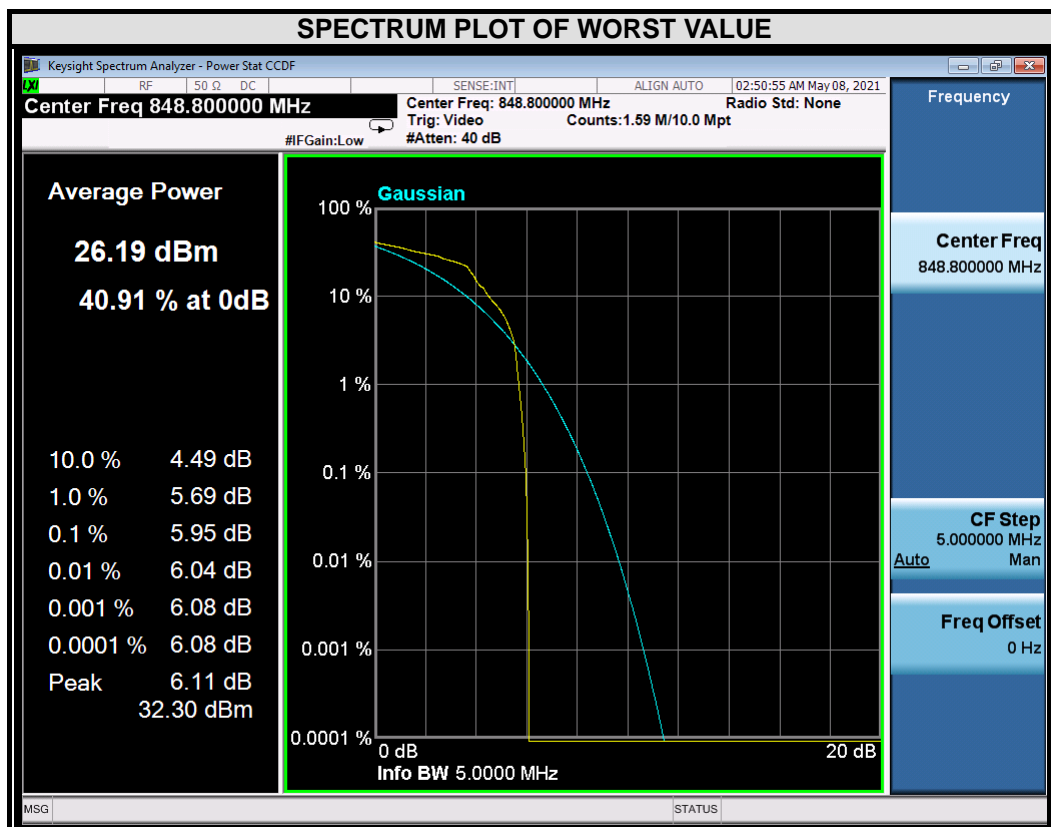
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
189	836.4	6.00





Test Report No.: W7L-P21080006RF15

CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
251	848.8	5.95



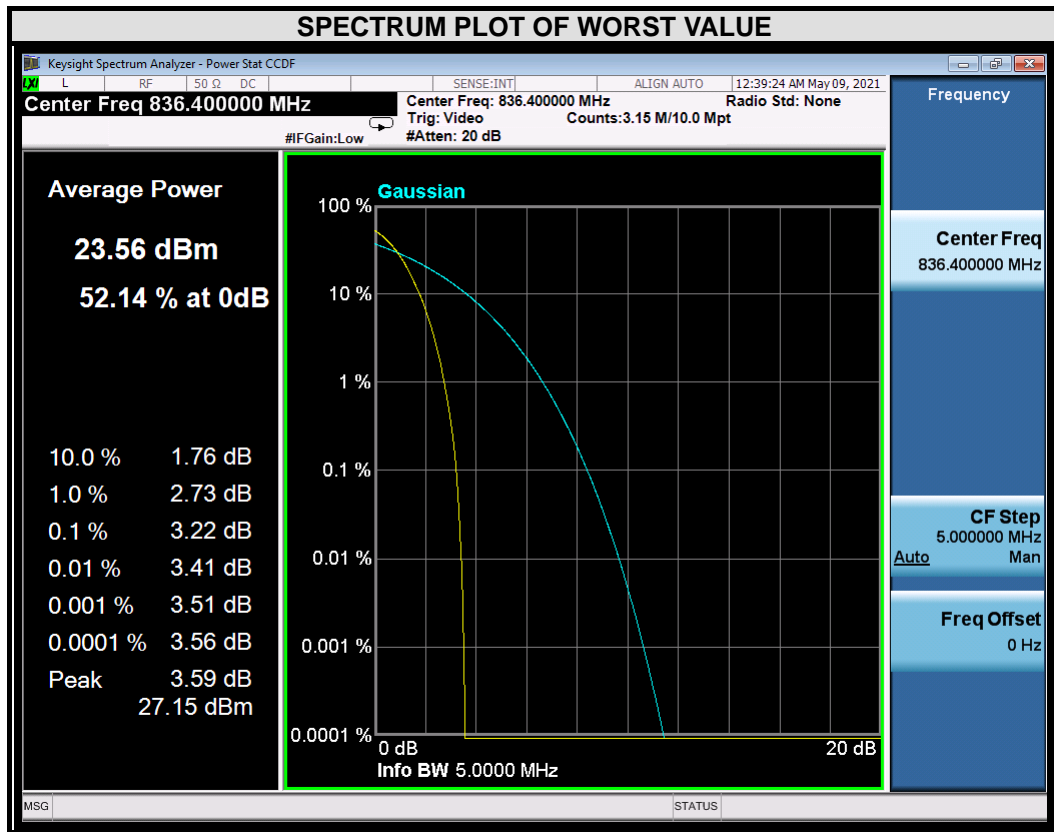


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Test Report No.: W7L-P21080006RF15

WCDMA

CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
4132	826.4	3.22

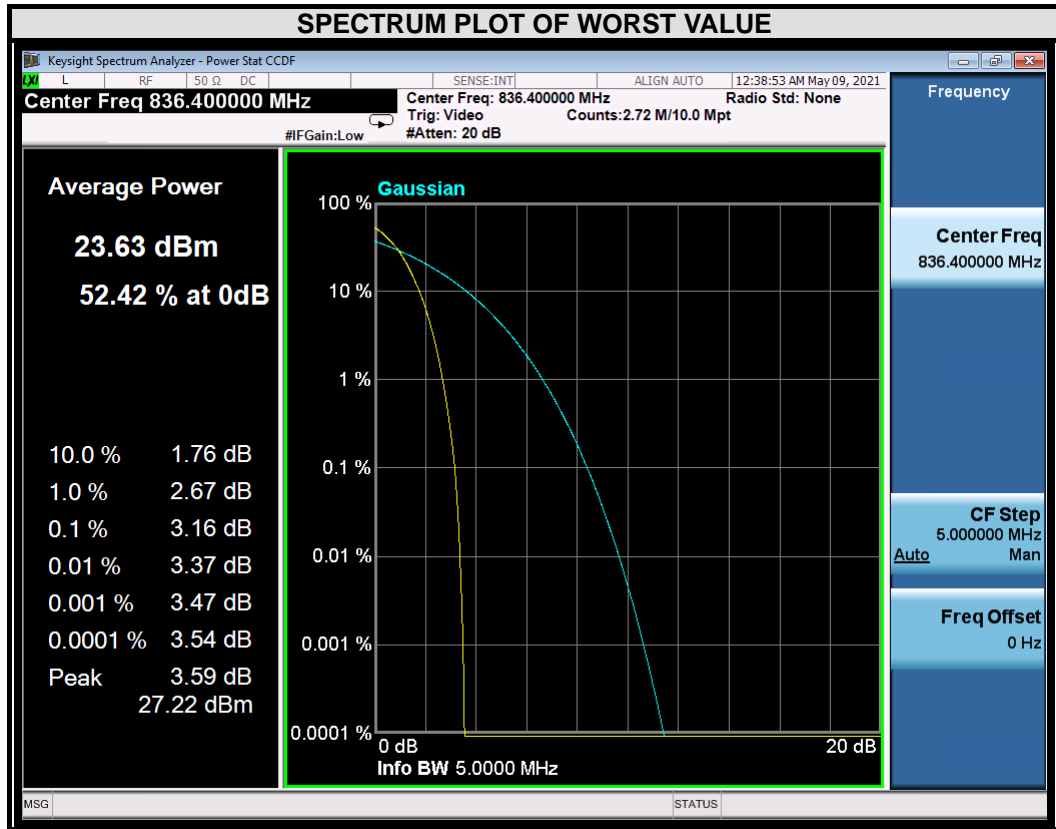






Test Report No.: W7L-P21080006RF15

CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
4182	836.4	3.16

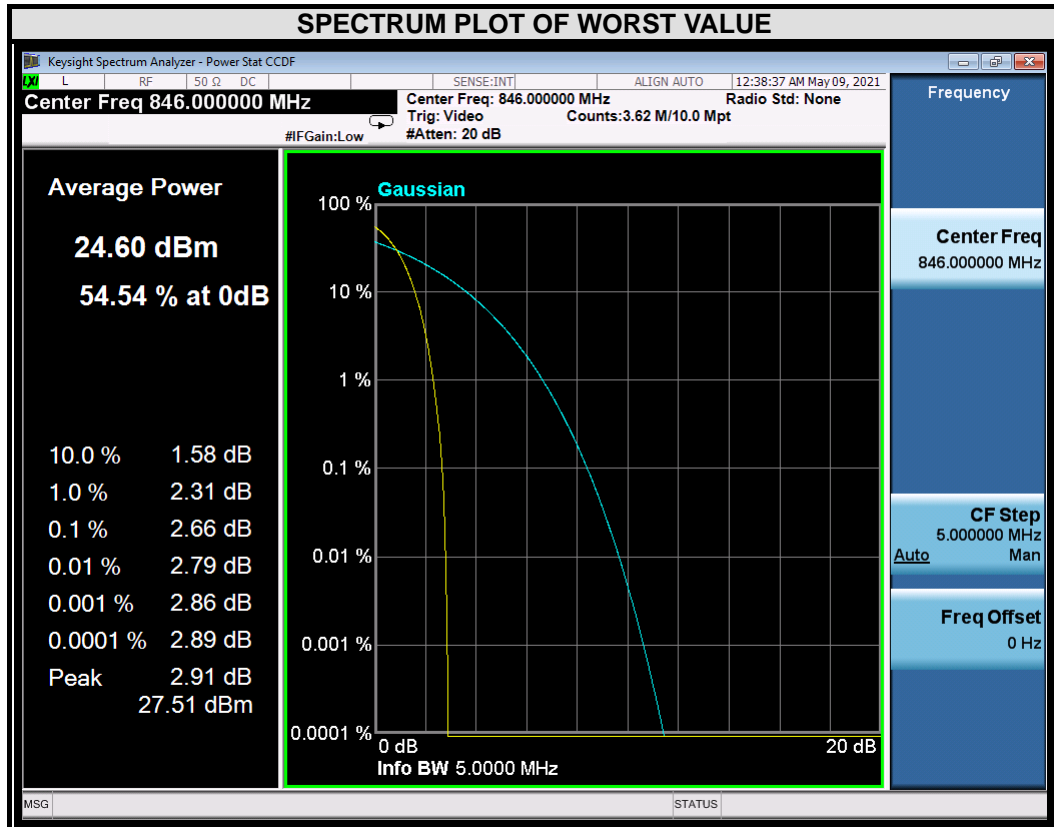




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Test Report No.: W7L-P21080006RF15

CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
4233	846.6	2.66



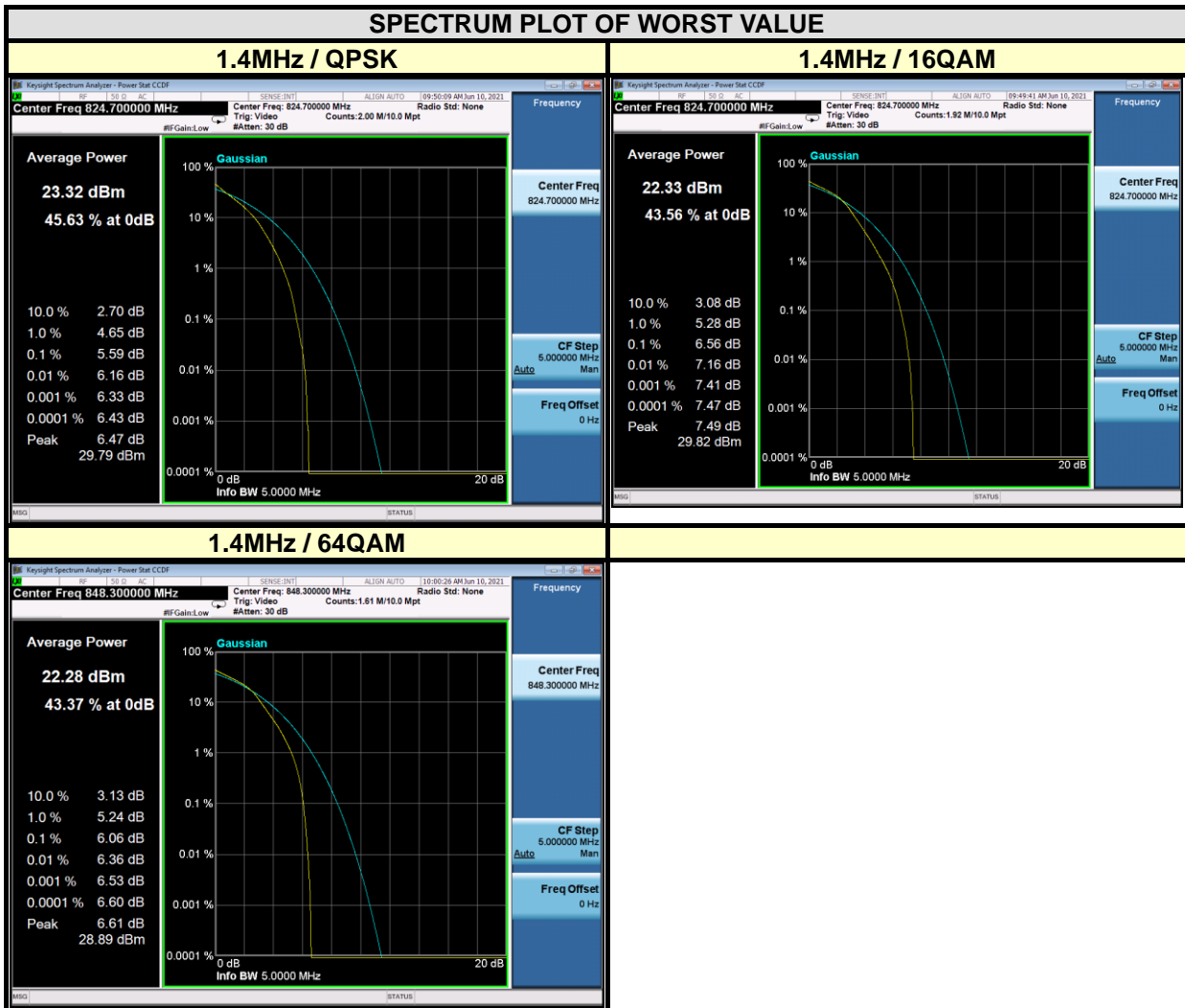


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Test Report No.: W7L-P21080006RF15

**LTE BAND 5**

CHANNEL BANDWIDTH: 1.4MHz				
CHANNEL	Frequency (MHz)	PEAK TO AVERAGE RATIO (dB)		
		QPSK	16QAM	64QAM
20407	824.7	5.59	6.56	5.31
20525	836.5	5.13	5.93	5.91
20643	848.3	5.18	6.05	6.06

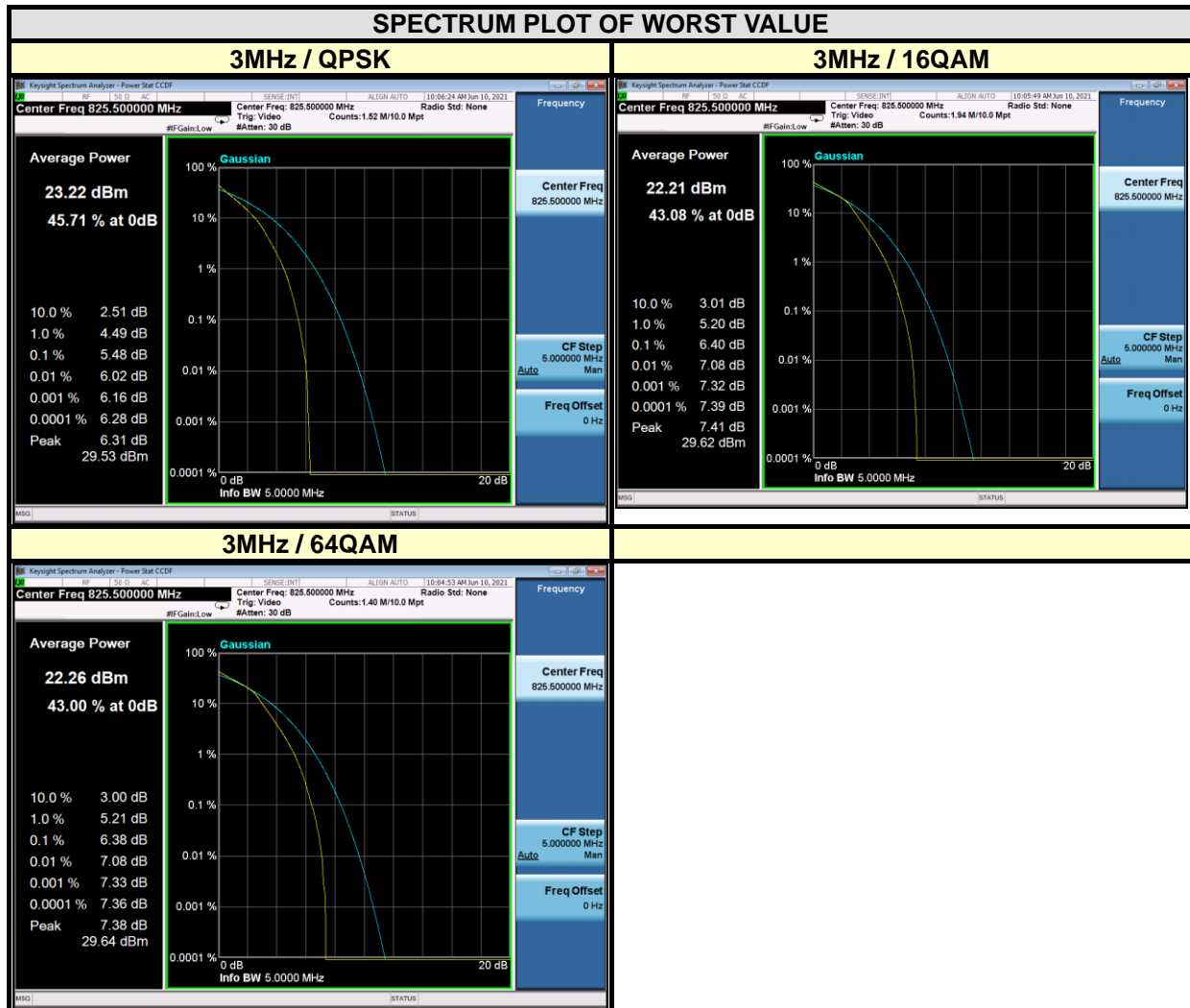




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Test Report No.: W7L-P21080006RF15

CHANNEL BANDWIDTH: 3MHz				
CHANNEL	Frequency (MHz)	PEAK TO AVERAGE RATIO (dB)		
		QPSK	16QAM	64QAM
20415	825.5	5.48	6.40	6.38
20525	836.5	5.31	6.13	6.11
20635	847.5	5.00	5.81	5.80

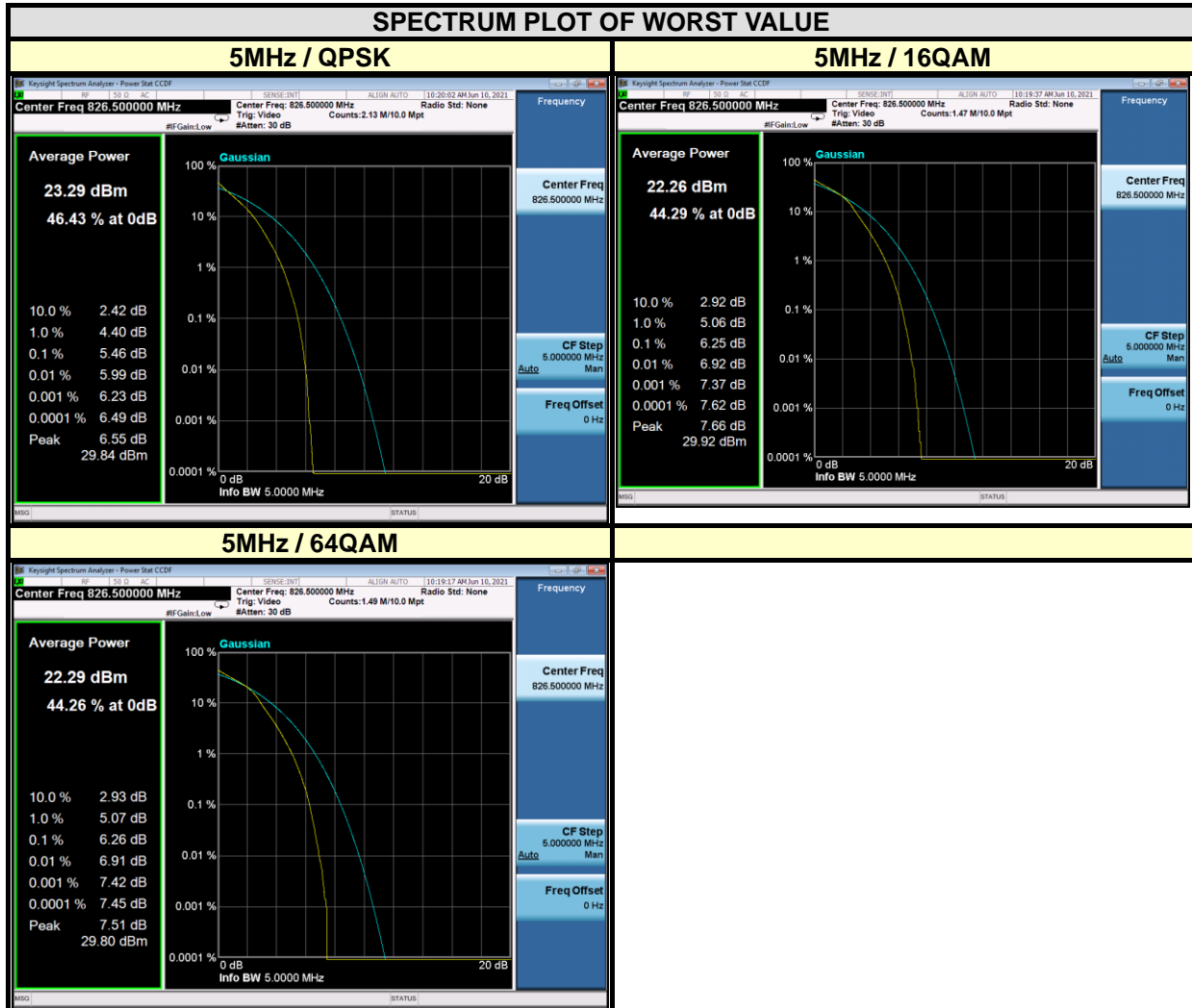




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Test Report No.: W7L-P21080006RF15

CHANNEL BANDWIDTH: 5MHz				
CHANNEL	Frequency (MHz)	PEAK TO AVERAGE RATIO (dB)		
		QPSK	16QAM	64QAM
20425	826.5	5.46	6.25	6.26
20525	836.5	5.41	6.17	6.16
20625	846.5	5.06	5.85	5.87





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Test Report No.: W7L-P21080006RF15

CHANNEL BANDWIDTH: 10MHz				
CHANNEL	Frequency (MHz)	PEAK TO AVERAGE RATIO (dB)		
		QPSK	16QAM	64QAM
20450	829	4.76	5.61	5.59
20525	836.5	5.18	6.02	6.00
20600	844	5.37	6.20	6.23

