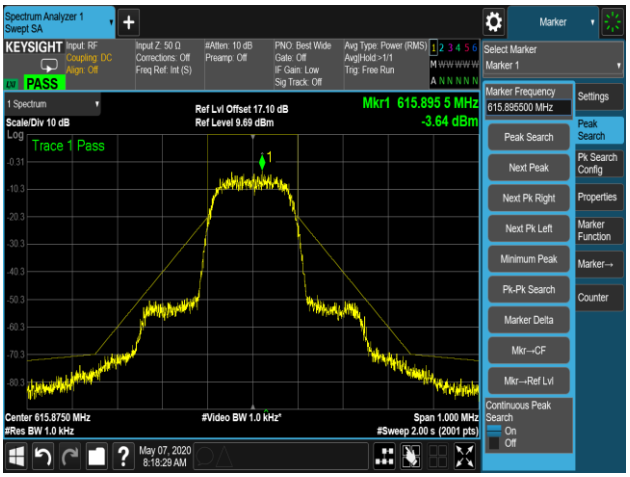
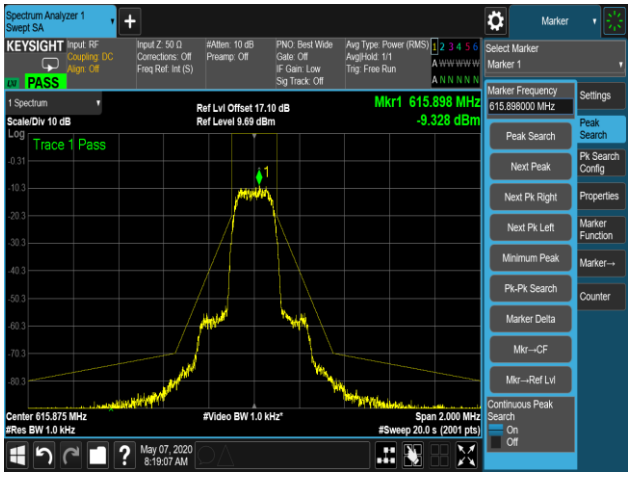
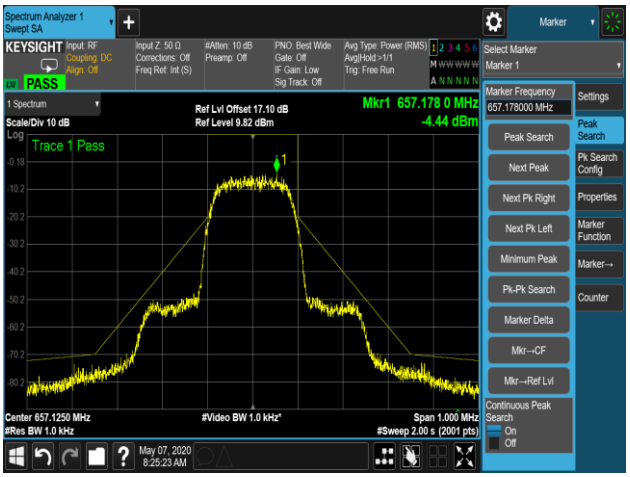
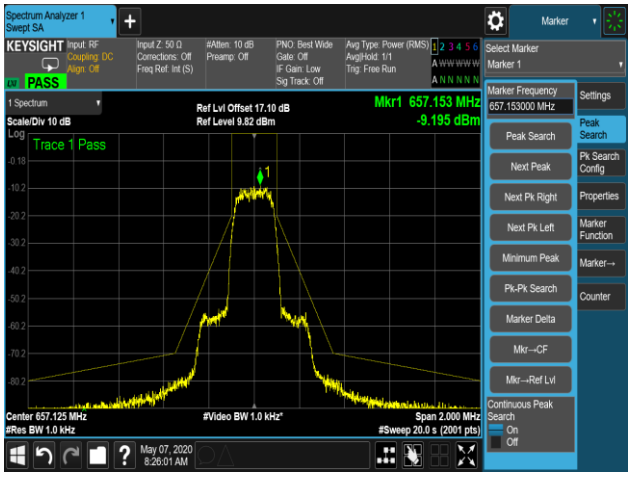
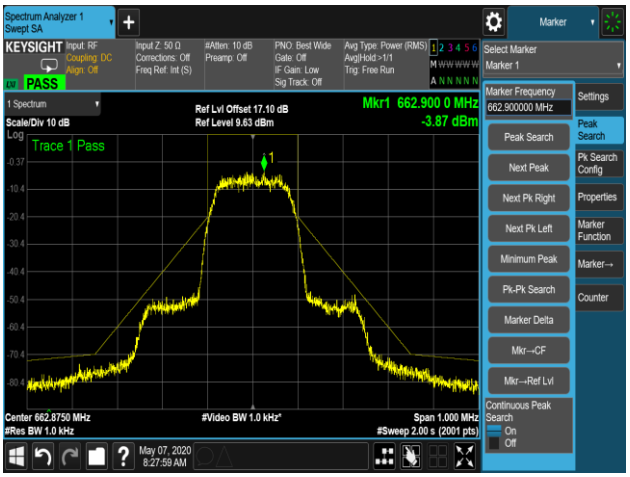
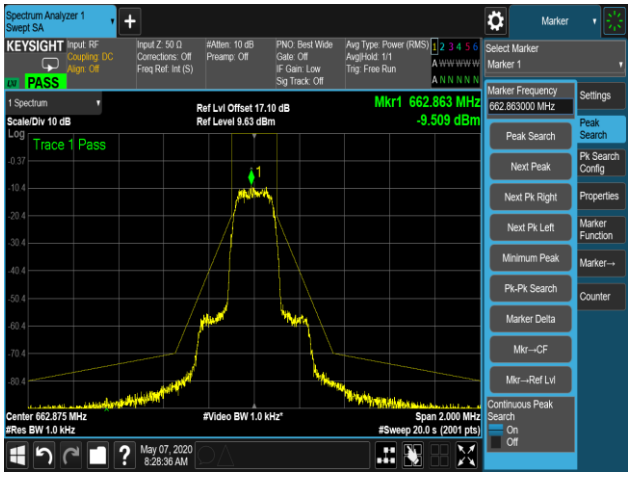
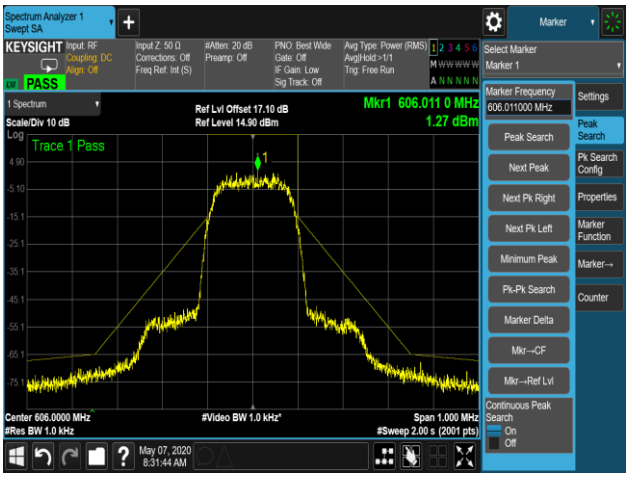
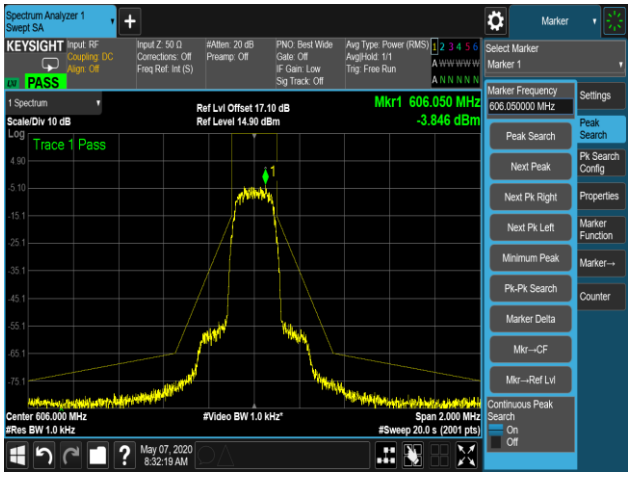
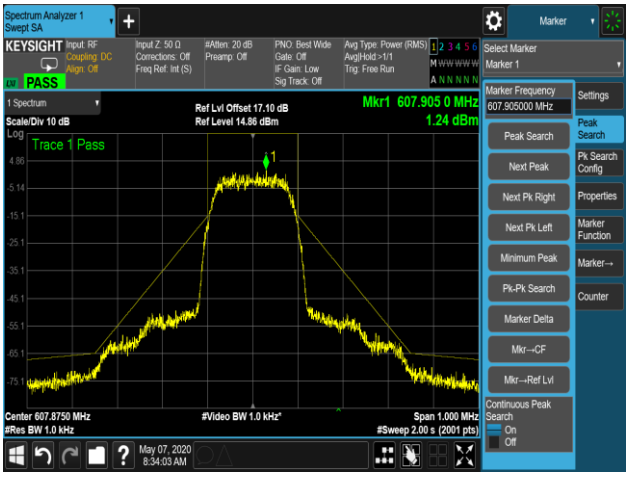
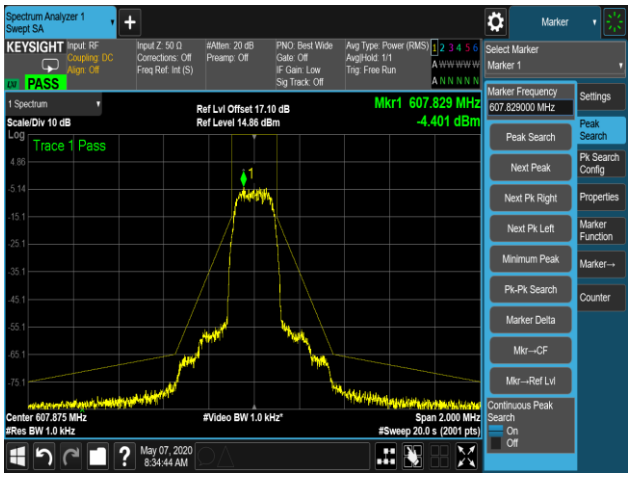
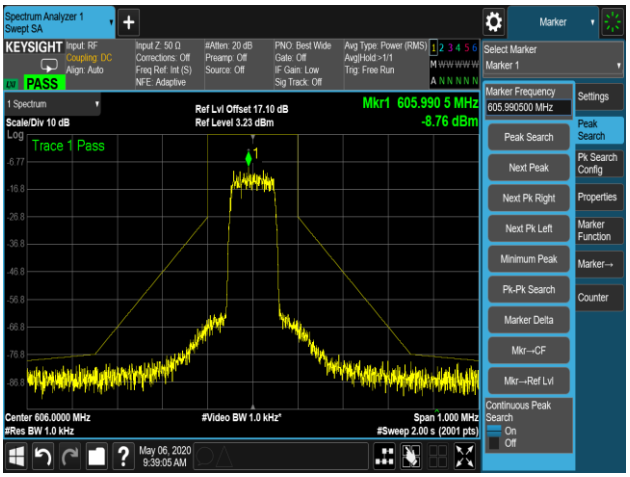
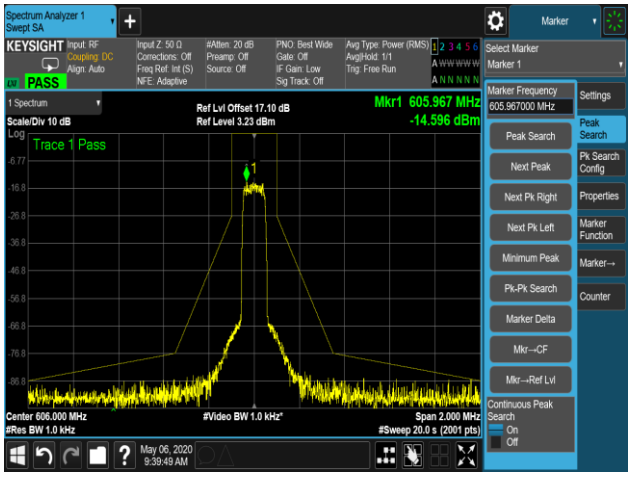
Necessary Bandwidth - STD Mode, 10mW, 615.875MHz	
Step 1	Step 2
	
Step 3	
	

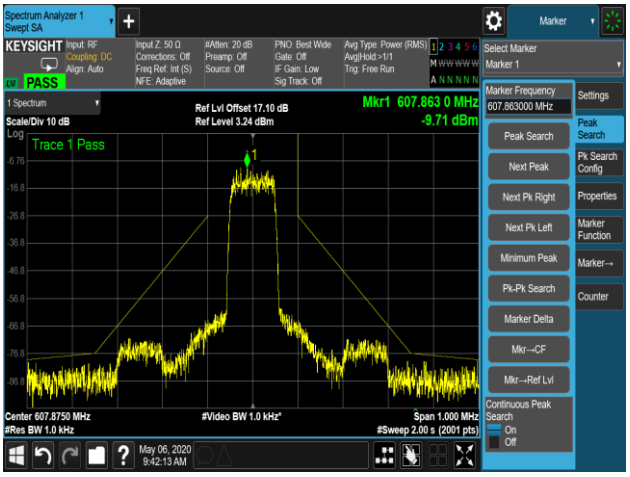
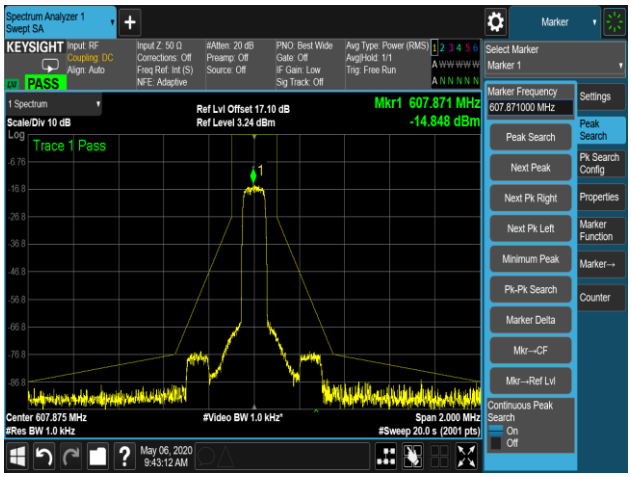
Necessary Bandwidth - STD Mode, 10mW, 657.125MHz	
Step 1	Step 2
	
Step 3	
	

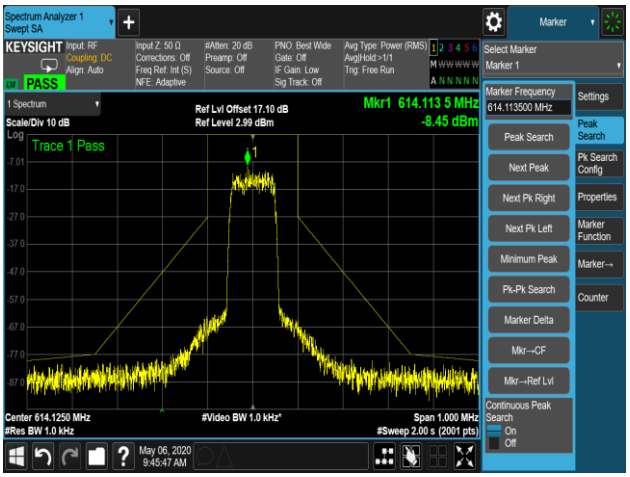
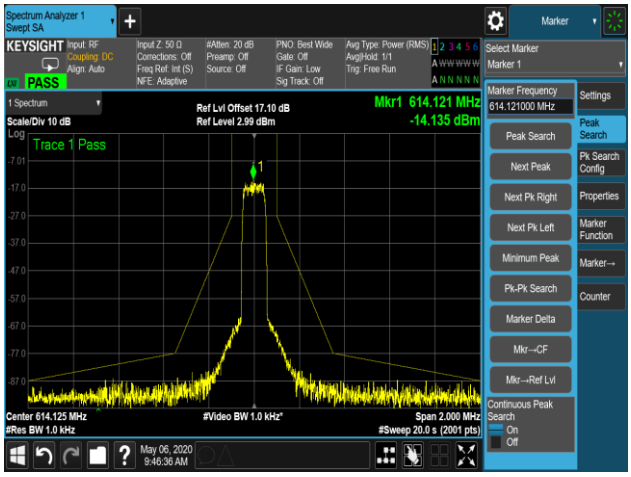
Necessary Bandwidth - STD Mode, 10mW, 662.875MHz	
Step 1	Step 2
	
Step 3	
	

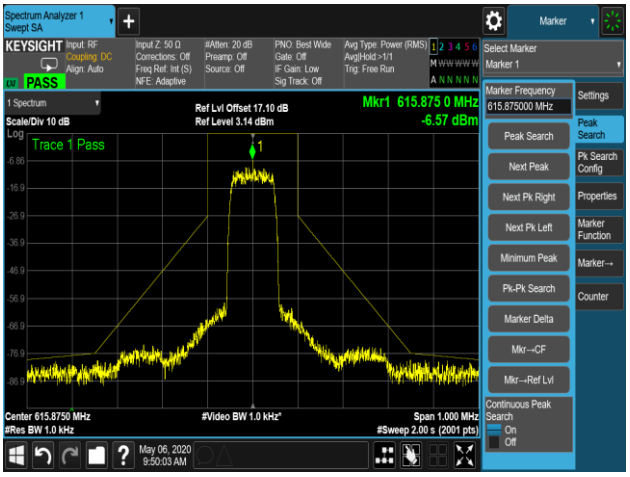
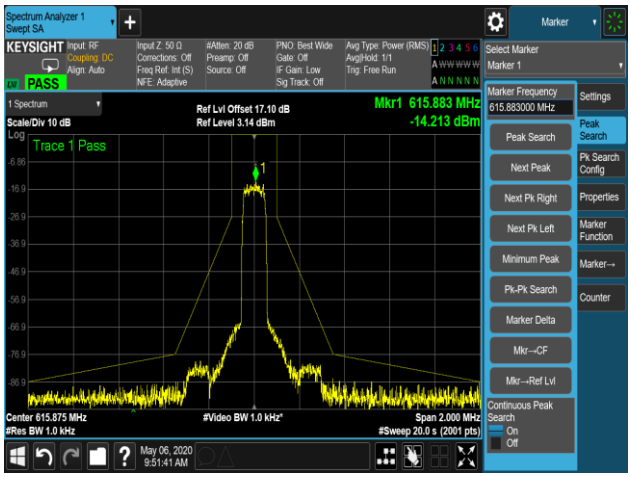
Necessary Bandwidth - STD Mode, 35mW, 606.000MHz	
Step 1	Step 2
	
Step 3	
	

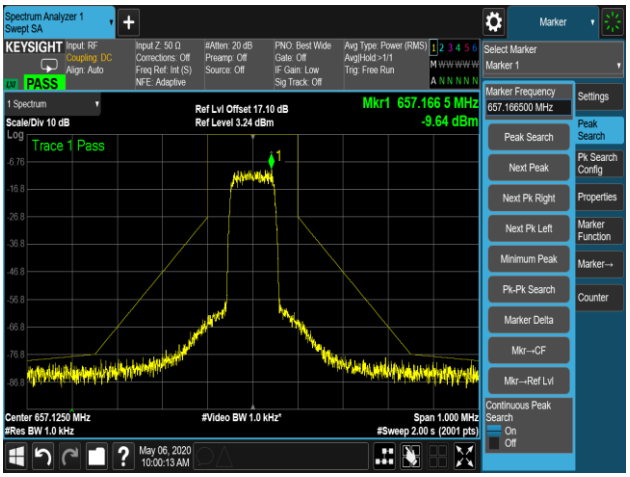
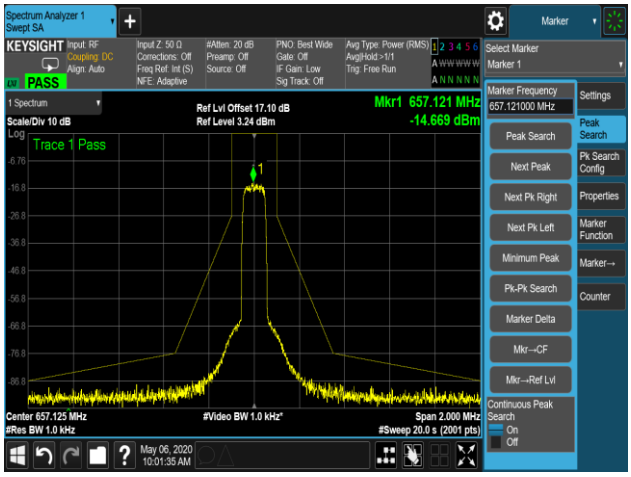
Necessary Bandwidth - STD Mode, 35mW, 607.875MHz	
Step 1	Step 2
	
Step 3	
	

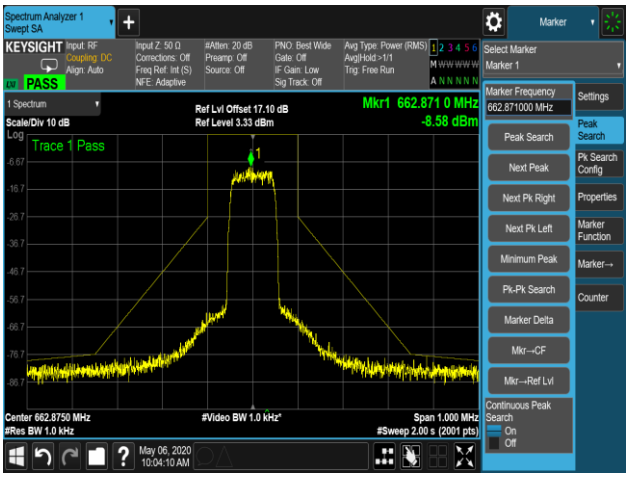
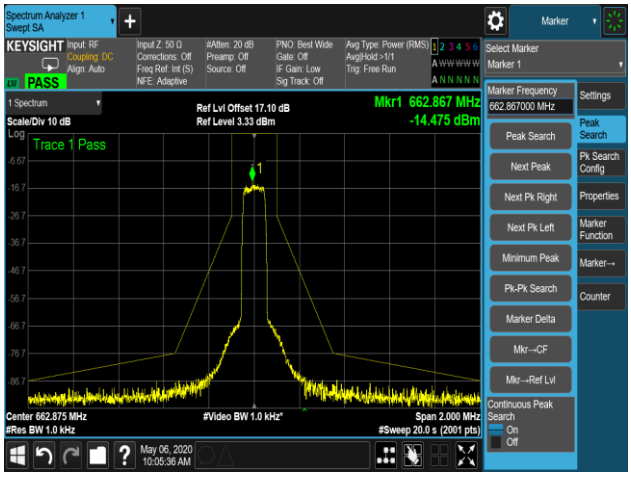
Necessary Bandwidth - HD Mode, 2mW, 606.000MHz	
Step 1	Step 2
	
Step 3	
	

Necessary Bandwidth - HD Mode, 2mW, 607.875MHz	
Step 1	Step 2
	
Step 3	
	

Necessary Bandwidth - HD Mode, 2mW, 614.125MHz	
Step 1	Step 2
	
Step 3	
	

Necessary Bandwidth - HD Mode, 2mW, 615.875MHz	
Step 1	Step 2
	
Step 3	
	

Necessary Bandwidth - HD Mode, 2mW, 657.125MHz	
Step 1	Step 2
	
Step 3	
	

Necessary Bandwidth - HD Mode, 2mW, 662.875MHz	
Step 1	Step 2
	
Step 3	
	

6.5. Output Power Measurement

6.5.1.Test Limit

In the bands allocated and assigned for broadcast television and in the 600 MHz service band: 50 mW EIRP.

In the 600 MHz guard band and the 600 MHz duplex gap: 20 mW EIRP.

6.5.2.Test Procedure Used

N/A

6.5.3.Test Setting

Radiated Measurement

The EUT was set to transmit on the bottom, middle, and top frequencies in each power level.

All significant broadband and narrowband signals found in the preliminary sweeps were measured using a peak detector at a test distance of 3 meters.

Allow trace to fully stabilize and use the peak search function on the instrument to find the peak of the spectrum, then mathematically convert the measured field strength level to an equivalent power level for comparison to the applicable limit.

Conducted Measurement

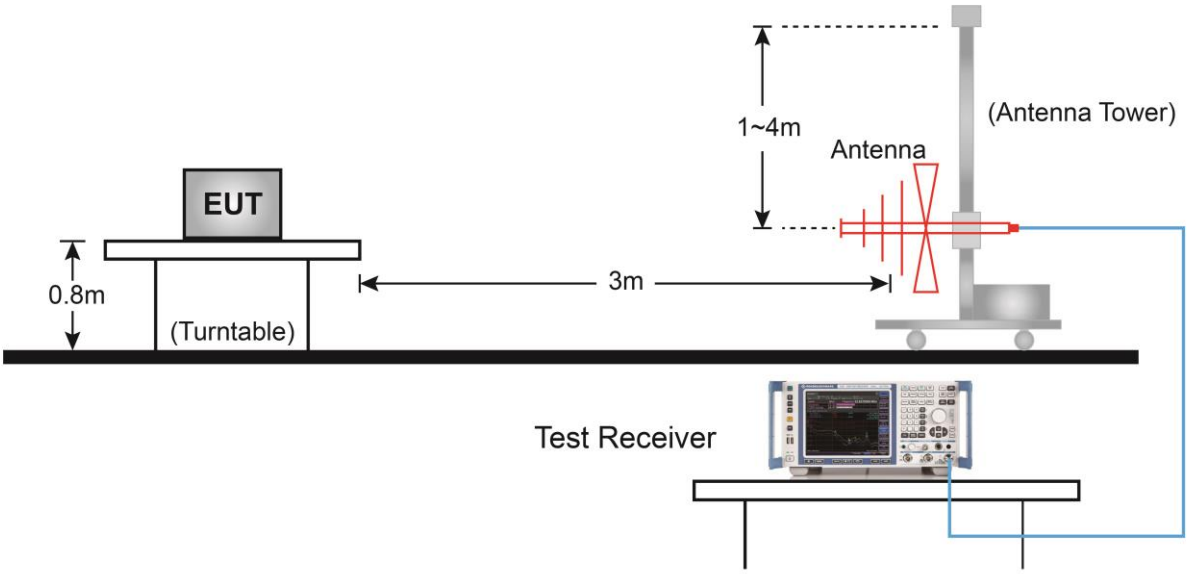
The EUT was set to transmit on the bottom, middle, and top frequencies in each power level.

All significant broadband and narrowband signals found in the preliminary sweeps were measured using a peak detector at a test distance of 3 meters.

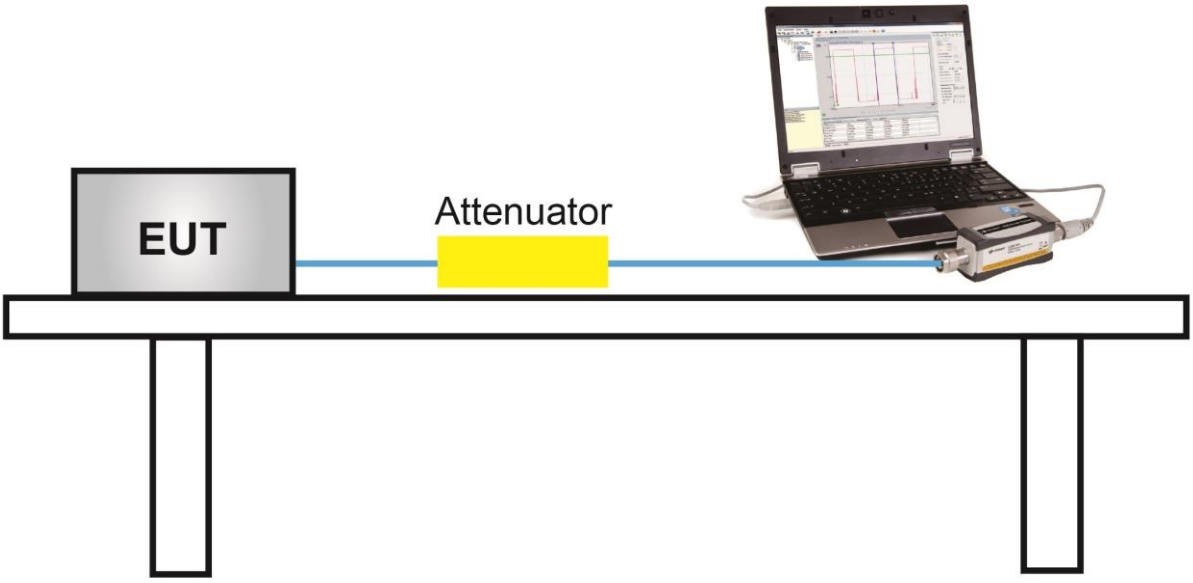
Allow trace to fully stabilize and use the peak search function on the instrument to find the peak of the spectrum.

6.5.4.Test Setup

Radiated Measurement



Conducted Measurement



6.5.5.Test Result

Test Engineer	Buter Shi	Temperature	25°C
Test Site	AC1	Relative Humidity	44 ~ 68%
Model No.	AD3 K54	Test Date	2020/05/11

Frequency (MHz)	Measurement Level (dBuV/m)	Factor (dB)	EIRP (dBm)	Limit (dBm)	Test Result
STD Mode (35mW)					
606.000	111.24	95.2	16.04	16.99	Pass
607.875	111.36	95.2	16.16	16.99	Pass
STD Mode (10mW)					
614.125	105.97	95.2	10.77	13.01	Pass
615.875	106.13	95.2	10.93	13.01	Pass
STD Mode (10mW)					
657.125	105.77	95.2	10.57	13.01	Pass
662.875	105.73	95.2	10.53	13.01	Pass
HD Mode (2mW)					
606.000	100.88	95.2	5.68	16.99	Pass
607.875	100.22	95.2	5.02	16.99	Pass
HD Mode (2mW)					
614.125	99.59	95.2	4.39	13.01	Pass
615.875	99.74	95.2	4.42	13.01	Pass
HD Mode (2mW)					
657.125	99.04	95.2	3.84	13.01	Pass
662.875	99.66	95.2	4.46	13.01	Pass

Note 1: Limit = 10*Log (50mW) = 16.99 dBm.

Note 2: Limit = 10*Log (20mW) = 13.01 dBm.

Note 3: EIRP (dBm) = Measurement Level (dBuV/m) - Factor (dB).

Test Result of Average Output Power (Reporting Only)

Frequency (MHz)	Conducted Output Power (dBm)	
	STD Mode - 35mW	HD Mode - 2mW
606.000	15.12	3.04
607.875	14.91	3.05
Frequency (MHz)	Conducted Output Power (dBm)	
	STD Mode - 10mW	HD Mode - 2mW
614.125	9.77	3.01
615.875	9.81	2.79
657.125	9.53	2.71
662.875	9.47	2.77

6.6. Radiated Spurious Emission Measurement

6.6.1.Test Limit

According to FCC Part 15.236(g), emissions outside of this band shall comply with the limits specified in section 8.4 of ETSI EN 300 422-1 V1.4.2.

State	Frequency		
	47MHz to 74MHz, 87.5MHz to 137MHz 174MHz to 230MHz, 470MHz to 862MHz	Other Frequencies below 1000MHz	Frequencies above 1000MHz
Operation	4nW	250nW	1uW
Standby	2nW	2nW	20nW

6.6.2.Test Procedure Used

ETSI EN 300 422-1 V1.4.2 clause 8.4.2.

6.6.3.Test Setting

Table 1 - RBW as a function of frequency

Frequency	RBW
25 ~ 30 MHz	9 kHz
30 ~ 1000 MHz	100 kHz
1000 ~ 6000 MHz	1 MHz

Emissions shall be investigated up to the 10th harmonic of the fundamental.

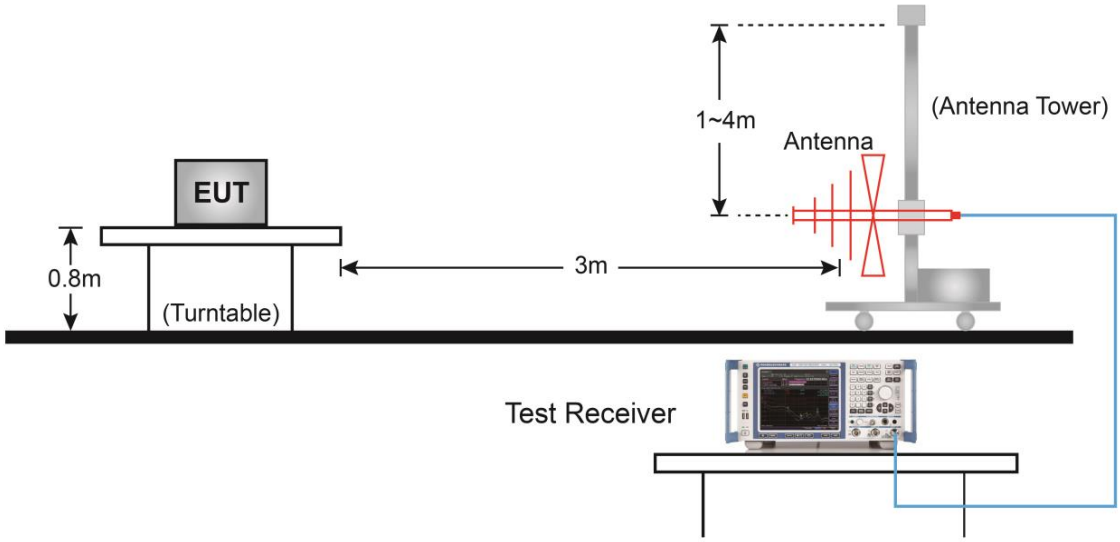
All the emissions shall be demonstrated using a QP detector below 1 GHz and a RMS Average detector above 1 GHz.

All significant broadband and narrowband signals found in the preliminary sweeps were measured using a peak detector at a test distance of 3 meters.

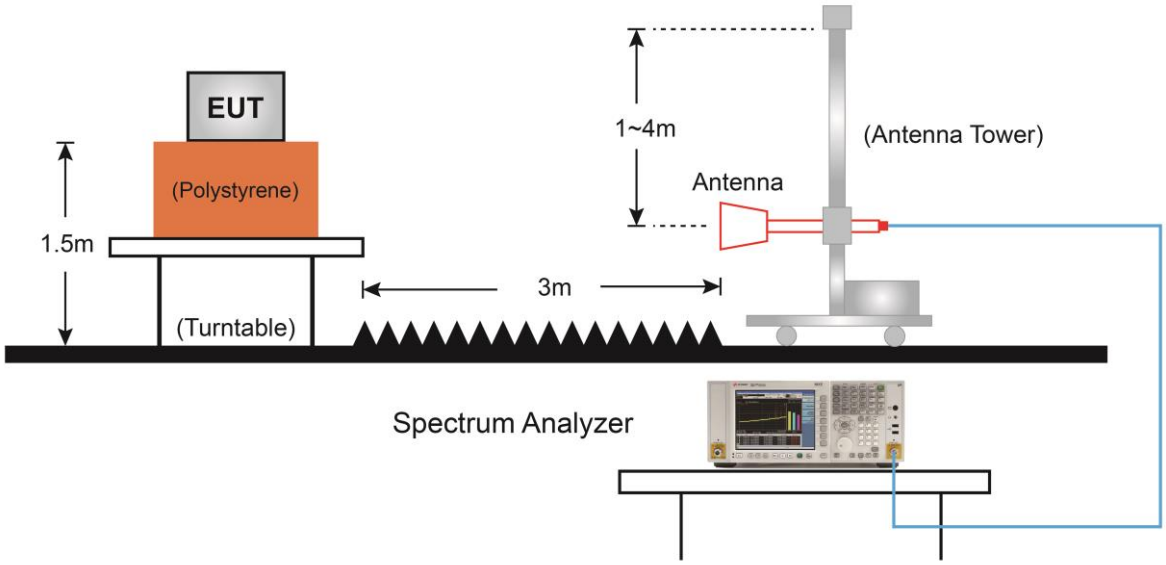
at each frequency at which a component is detected, the sample shall be rotated to obtain maximum response and the effective radiated power of that component determined by a substitution measurement.

6.6.4.Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



6.6.5.Test Result

Test Site	AC1	Temperature	25°C
Test Engineer	Buter Shi	Relative Humidity	54%
Test Mode	STD Mode - 35mW	Test Date	2020/05/16

Test Channel (MHz)	Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Substitute Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
606.000	1818.0	H	-65.5	0.6	9.9	-56.2	-30.0	-26.2
	2424.0	H	-61.9	0.6	10.4	-52.1	-30.0	-22.1
	3030.0	H	-66.6	0.7	11.1	-56.2	-30.0	-26.2
	1818.0	V	-68.0	0.6	9.9	-58.7	-30.0	-28.7
	2424.0	V	-64.8	0.6	10.4	-55.0	-30.0	-25.0
	3030.0	V	-66.3	0.7	11.1	-55.9	-30.0	-25.9
607.875	1215.8	H	-64.3	0.5	6.4	-58.4	-30.0	-28.4
	1823.6	H	-65.2	0.6	9.9	-55.9	-30.0	-25.9
	4863.0	H	-67.2	0.9	12.7	-55.4	-30.0	-25.4
	1215.8	V	-63.6	0.5	6.4	-57.7	-30.0	-27.7
	1823.6	V	-68.2	0.6	9.9	-58.9	-30.0	-28.9
	4863.0	V	-66.6	0.9	12.7	-54.8	-30.0	-24.8

Note 1: EIRP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBi)

Note 2: Margin (dB) = EIRP (dBm) - Limit (dBm)

Note 3: All data in this table is based on peak detection. Due to peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak and RMS detector. Thus, the data measured using the peak detector of a spectrum analyzer or EMI receiver will represent the worst-case results.

Test Site	AC1	Temperature	25°C
Test Engineer	Buter Shi	Relative Humidity	54%
Test Mode	STD Mode - 10mW	Test Date	2020/05/16

Test Channel (MHz)	Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Substitute Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
614.125	1842.4	H	-64.2	0.6	10.0	-54.8	-30.0	-24.8
	2456.5	H	-67.7	0.6	10.5	-57.8	-30.0	-27.8
	4913.0	H	-66.0	0.9	12.7	-54.2	-30.0	-24.2
	1842.4	V	-67.9	0.6	10.0	-58.5	-30.0	-28.5
	2456.5	V	-67.4	0.6	10.5	-57.5	-30.0	-27.5
	4913.0	V	-65.3	0.9	12.7	-53.5	-30.0	-23.5
615.875	1847.6	H	-66.4	0.6	10.0	-57.0	-30.0	-27.0
	2463.5	H	-68.3	0.6	10.6	-58.3	-30.0	-28.3
	4927.0	H	-66.8	0.9	12.8	-54.9	-30.0	-24.9
	1847.6	V	-68.6	0.6	10.0	-59.2	-30.0	-29.2
	2463.5	V	-67.6	0.6	10.6	-57.6	-30.0	-27.6
	4927.0	V	-65.8	0.9	12.8	-53.9	-30.0	-23.9
657.125	1971.4	H	-68.1	0.6	10.2	-58.5	-30.0	-28.5
	2628.5	H	-67.9	0.7	11.1	-57.5	-30.0	-27.5
	5257.0	H	-66.8	0.9	13.2	-54.5	-30.0	-24.5
	1971.4	V	-68.9	0.6	10.2	-59.3	-30.0	-29.3
	2628.5	V	-67.8	0.7	11.1	-57.4	-30.0	-27.4
	5257.0	V	-66.7	0.9	13.2	-54.4	-30.0	-24.4
662.875	1988.6	H	-68.0	0.6	10.2	-58.4	-30.0	-28.4
	2651.5	H	-68.0	0.7	11.1	-57.6	-30.0	-27.6
	5303.0	H	-66.1	0.9	13.4	-53.6	-30.0	-23.6
	1988.6	V	-68.1	0.6	10.2	-58.5	-30.0	-28.5
	2651.5	V	-68.2	0.7	11.1	-57.8	-30.0	-27.8
	5303.0	V	-66.4	0.9	13.4	-53.9	-30.0	-23.9

Note 1: EIRP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBi)

Note 2: Margin (dB) = EIRP (dBm) - Limit (dBm)

Note 3: All data in this table is based on peak detection. Due to peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak and RMS detector. Thus, the data measured using the peak detector of a spectrum analyzer or EMI receiver will represent the worst-case results.

Test Site	AC1	Temperature	25°C
Test Engineer	Buter Shi	Relative Humidity	54%
Test Mode	HD Mode - 2mW	Test Date	2020/05/16

Test Channel (MHz)	Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Substitute Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
606.000	1818.0	H	-66.4	0.6	9.9	-57.1	-30.0	-27.1
	2424.0	H	-65.4	0.6	10.4	-55.6	-30.0	-25.6
	3030.0	H	-66.1	0.7	11.1	-55.7	-30.0	-25.7
	1818.0	V	-68.7	0.6	9.9	-59.4	-30.0	-29.4
	2424.0	V	-66.0	0.6	10.4	-56.2	-30.0	-26.2
	3030.0	V	-66.8	0.7	11.1	-56.4	-30.0	-26.4
607.875	1215.8	H	-64.0	0.5	6.4	-58.1	-30.0	-28.1
	1823.6	H	-66.5	0.6	9.9	-57.2	-30.0	-27.2
	4863.0	H	-66.9	0.9	12.7	-55.1	-30.0	-25.1
	1215.8	V	-64.7	0.5	6.4	-58.8	-30.0	-28.8
	1823.6	V	-68.5	0.6	9.9	-59.2	-30.0	-29.2
	4863.0	V	-67.3	0.9	12.7	-55.5	-30.0	-25.5

Note 1: EIRP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBi)

Note 2: Margin (dB) = EIRP (dBm) - Limit (dBm)

Note 3: All data in this table is based on peak detection. Due to peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak and RMS detector. Thus, the data measured using the peak detector of a spectrum analyzer or EMI receiver will represent the worst-case results.

Test Site	AC1	Temperature	25°C
Test Engineer	Buter Shi	Relative Humidity	54%
Test Mode	HD Mode - 2mW	Test Date	2020/05/16

Test Channel (MHz)	Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Substitute Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
614.125	1842.4	H	-63.3	0.6	10.0	-53.9	-30.0	-23.9
	2456.5	H	-68.0	0.6	10.5	-58.1	-30.0	-28.1
	4913.0	H	-66.0	0.9	12.7	-54.2	-30.0	-24.2
	1842.4	V	-67.7	0.6	10.0	-58.3	-30.0	-28.3
	2456.5	V	-67.4	0.6	10.5	-57.5	-30.0	-27.5
	4913.0	V	-65.9	0.9	12.7	-54.1	-30.0	-24.1
615.875	1847.6	H	-68.0	0.6	10.0	-58.6	-30.0	-28.6
	2463.5	H	-67.8	0.6	10.6	-57.8	-30.0	-27.8
	4927.0	H	-66.0	0.9	12.8	-54.1	-30.0	-24.1
	1847.6	V	-68.8	0.6	10.0	-59.4	-30.0	-29.4
	2463.5	V	-67.7	0.6	10.6	-57.7	-30.0	-27.7
	4927.0	V	-66.0	0.9	12.8	-54.1	-30.0	-24.1
657.125	1971.4	H	-67.8	0.6	10.2	-58.2	-30.0	-28.2
	2628.5	H	-68.2	0.7	11.1	-57.8	-30.0	-27.8
	5257.0	H	-66.6	0.9	13.2	-54.3	-30.0	-24.3
	1971.4	V	-68.2	0.6	10.2	-58.6	-30.0	-28.6
	2628.5	V	-67.4	0.7	11.1	-57.0	-30.0	-27.0
	5257.0	V	-65.7	0.9	13.2	-53.4	-30.0	-23.4
662.875	1988.6	H	-68.1	0.6	10.2	-58.5	-30.0	-28.5
	2651.5	H	-67.9	0.7	11.1	-57.5	-30.0	-27.5
	5303.0	H	-66.7	0.9	13.4	-54.2	-30.0	-24.2
	1988.6	V	-68.1	0.6	10.2	-58.5	-30.0	-28.5
	2651.5	V	-67.6	0.7	11.1	-57.2	-30.0	-27.2
	5303.0	V	-66.7	0.9	13.4	-54.2	-30.0	-24.2

Note 1: EIRP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBi)

Note 2: Margin (dB) = EIRP (dBm) - Limit (dBm)

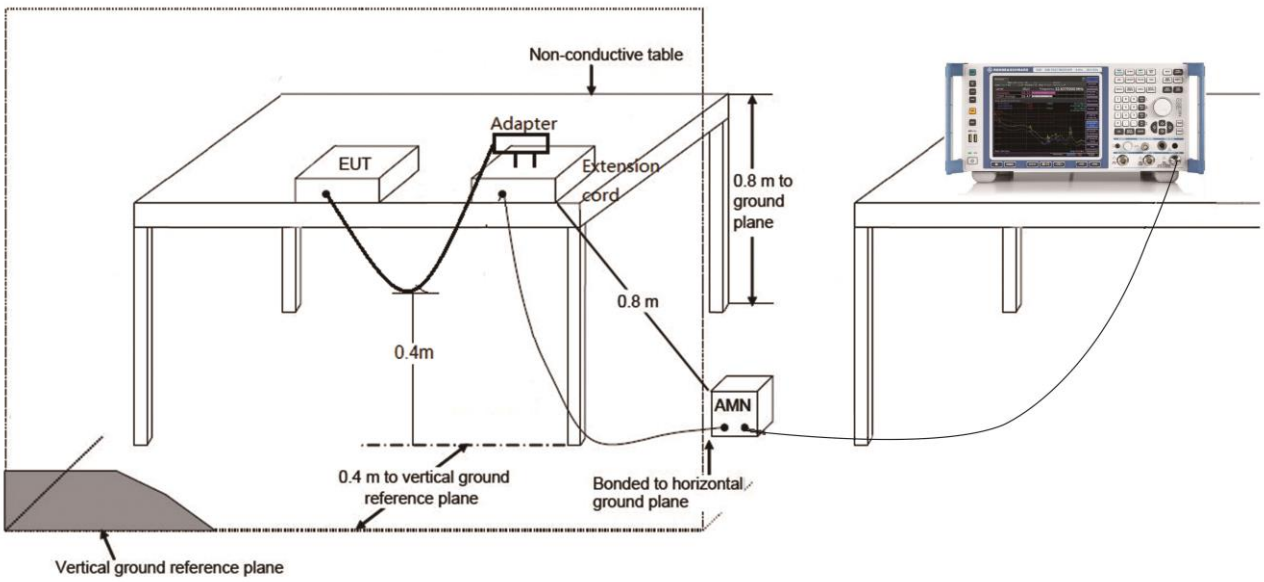
Note 3: All data in this table is based on peak detection. Due to peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak and RMS detector. Thus, the data measured using the peak detector of a spectrum analyzer or EMI receiver will represent the worst-case results.

6.7. AC Conducted Emissions Measurement

6.7.1.Test Limit

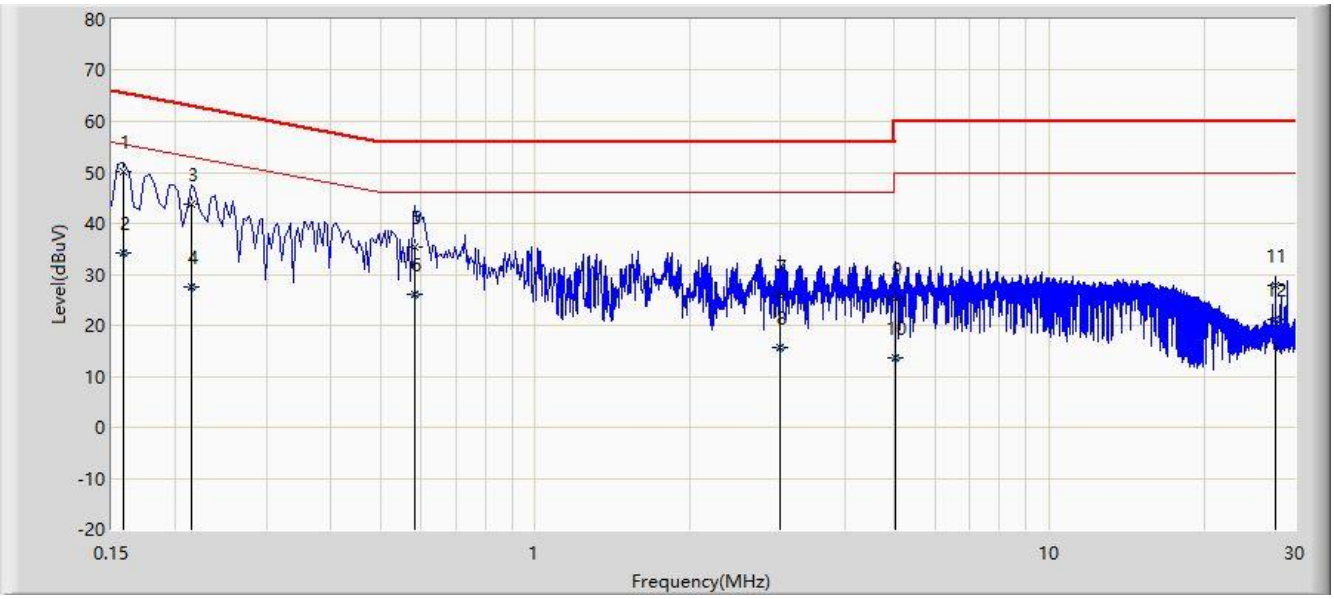
FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	QP (dBμV)	Average (dBμV)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50
Note 1: The lower limit shall apply at the transition frequencies. Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.		

6.7.2.Test Setup



6.7.3.Test Result of Conducted Emissions

Site: SR2	Time: 2020/05/26 - 14:21
Limit: FCC_Part15.207_CE_AC Power	Engineer: Messiah Li
Probe: ENV216_101684_Filter On	Polarity: Line
EUT: Digital Plug-on Transmitter	Power: AC 120V/60Hz
Note: STD mode, 35mW, Transmit at 606.000MHz	

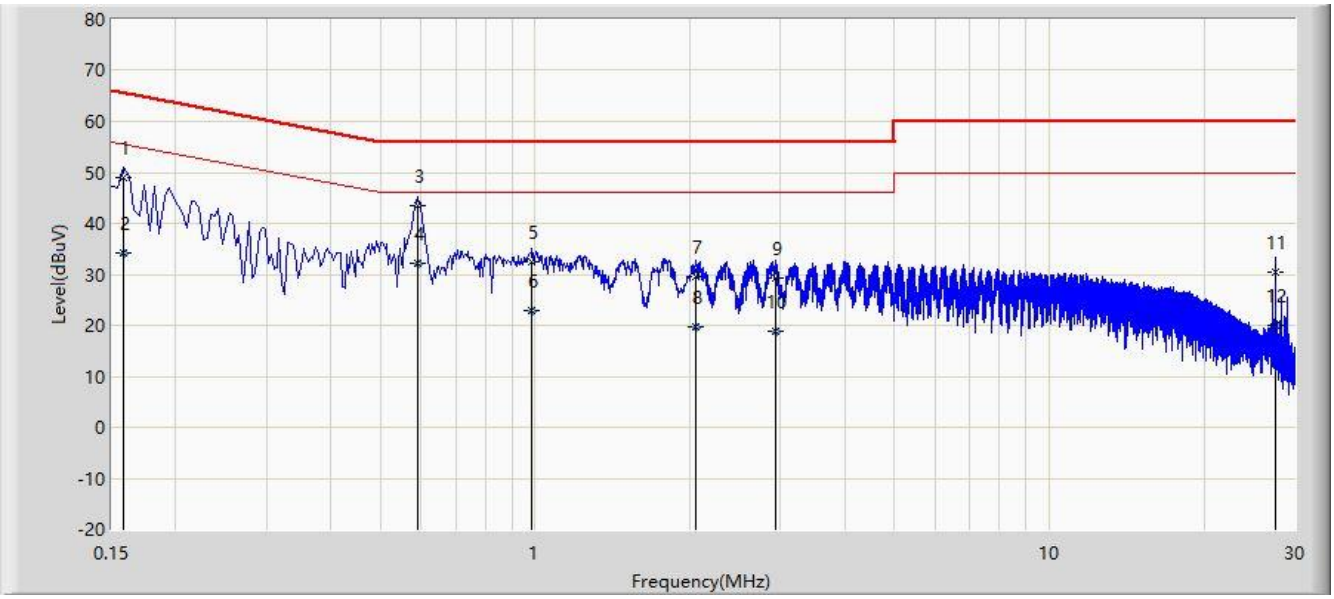


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV)	Factor (dB)	Type
1		*	0.158	50.266	39.986	-15.302	65.568	10.281	QP
2			0.158	34.166	23.886	-21.402	55.568	10.281	AV
3			0.214	43.868	33.899	-19.180	63.049	9.969	QP
4			0.214	27.535	17.566	-25.514	53.049	9.969	AV
5			0.582	35.377	25.229	-20.623	56.000	10.147	QP
6			0.582	26.096	15.949	-19.904	46.000	10.147	AV
7			2.986	25.695	15.790	-30.305	56.000	9.906	QP
8			2.986	15.746	5.840	-30.254	46.000	9.906	AV
9			5.022	25.075	15.247	-34.925	60.000	9.828	QP
10			5.022	13.748	3.920	-36.252	50.000	9.828	AV
11			27.502	27.827	17.702	-32.173	60.000	10.125	QP
12			27.502	21.082	10.957	-28.918	50.000	10.125	AV

Note: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

Site: SR2	Time: 2020/05/26 - 14:28
Limit: FCC_Part15.207_CE_AC Power	Engineer: Messiah Li
Probe: ENV216_101684_Filter On	Polarity: Neutral
EUT: Digital Plug-on Transmitter	Power: AC 120V/60Hz
Note: STD mode, 35mW, Transmit at 606.000MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.158	49.095	38.802	-16.474	65.568	10.293	QP
2			0.158	34.187	23.894	-21.382	55.568	10.293	AV
3		*	0.590	43.381	33.211	-12.619	56.000	10.171	QP
4			0.590	32.059	21.889	-13.941	46.000	10.171	AV
5			0.986	32.443	22.469	-23.557	56.000	9.973	QP
6			0.986	22.857	12.883	-23.143	46.000	9.973	AV
7			2.046	29.601	19.656	-26.399	56.000	9.944	QP
8			2.046	19.593	9.648	-26.407	46.000	9.944	AV
9			2.930	29.241	19.309	-26.759	56.000	9.932	QP
10			2.930	18.786	8.854	-27.214	46.000	9.932	AV
11			27.498	30.415	20.165	-29.585	60.000	10.250	QP
12			27.498	19.956	9.706	-30.044	50.000	10.250	AV

Note: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

7. CONCLUSION

The data collected relate only the item(s) tested and show that the unit is compliance with Part 15C of the FCC rules.

The End

Appendix A - Test Setup Photograph

Refer to “2004RSU052-UT” file.

Appendix B - EUT Photograph

Refer to “2004RSU052-UE” file.