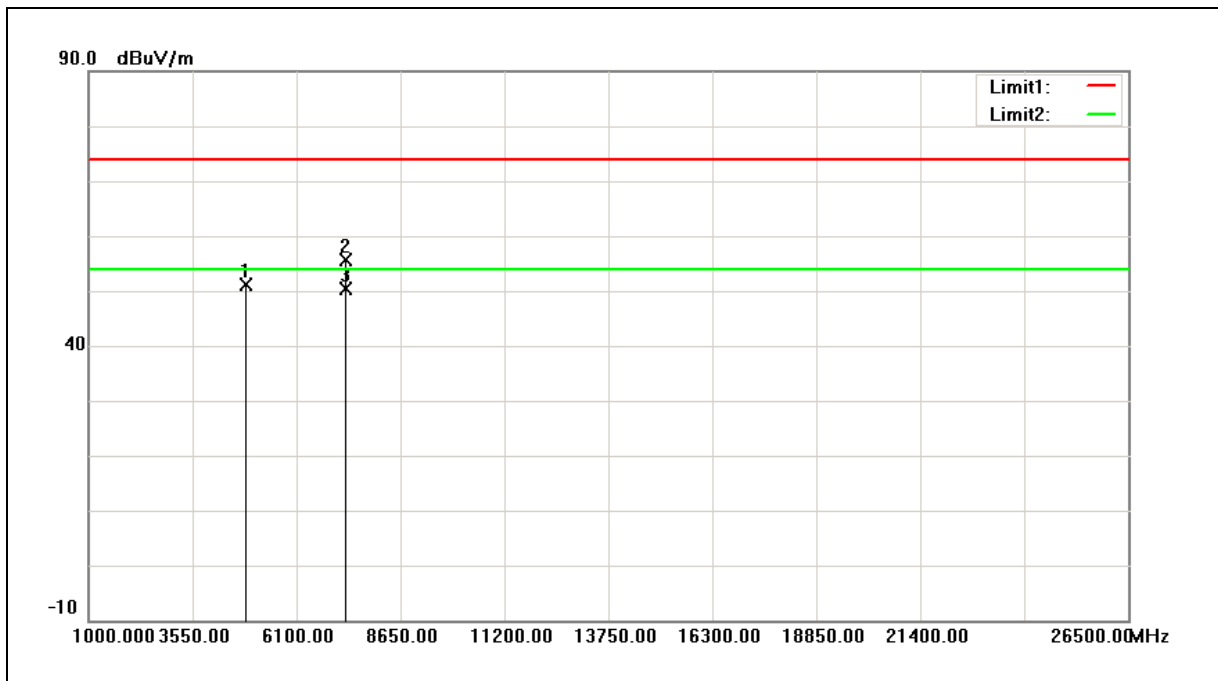


Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2437MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/10/2017
Ant.Polar.:	Vertical		



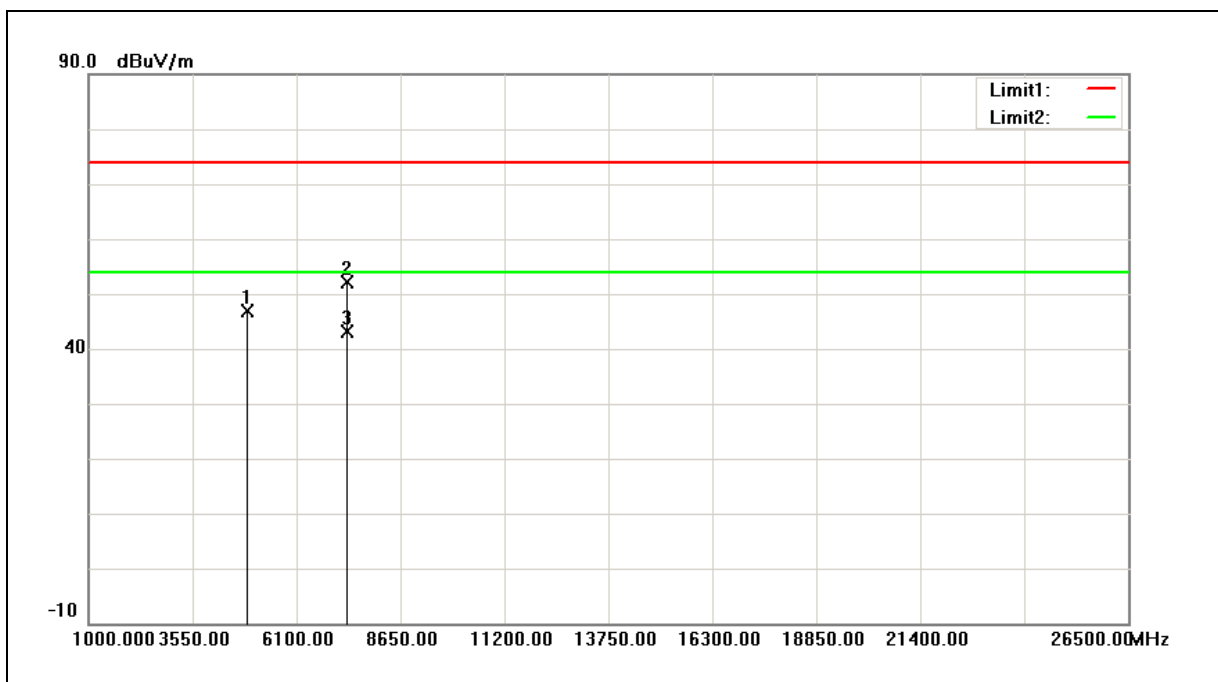
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4874.000	58.20	-6.95	51.25	74.00	-22.75	peak
2	7311.000	55.74	-0.16	55.58	74.00	-18.42	peak
3	7311.000	50.50	-0.16	50.34	54.00	-3.66	AVG

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2452MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/10/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4904.000	53.71	-6.86	46.85	74.00	-27.15	peak
2	7356.000	52.09	0.01	52.10	74.00	-21.90	peak
3	7356.000	43.08	0.01	43.09	54.00	-10.91	AVG

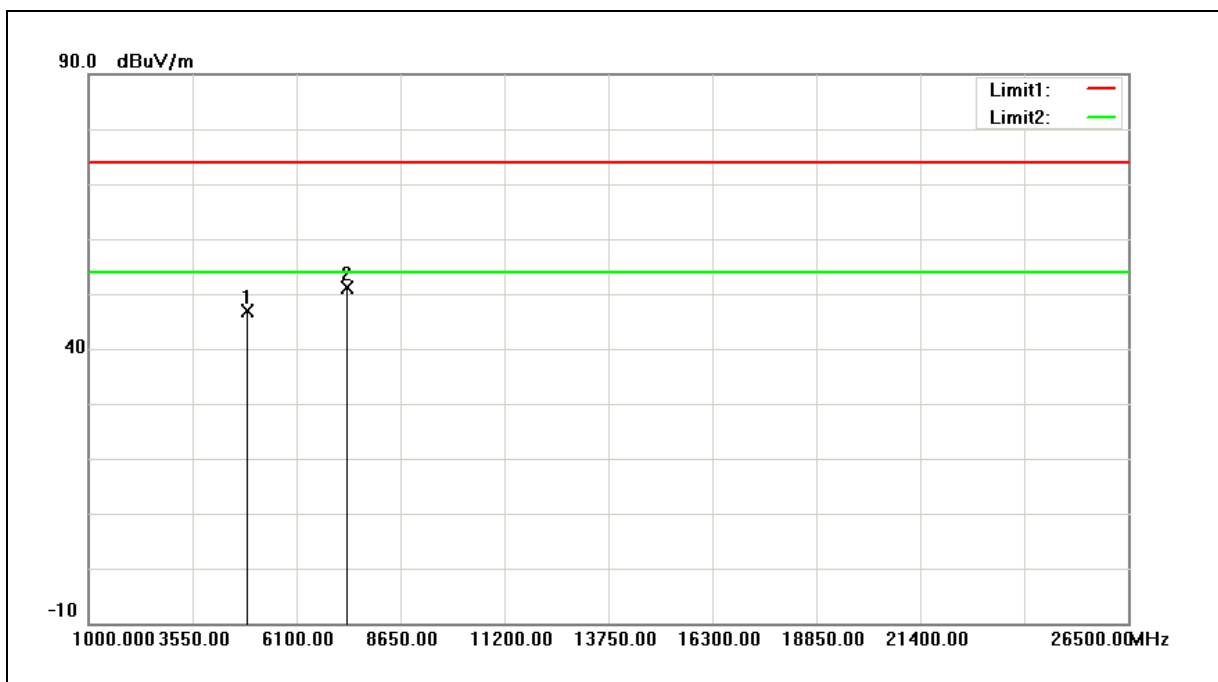
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2452MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/10/2017
Ant.Polar.:	Vertical		



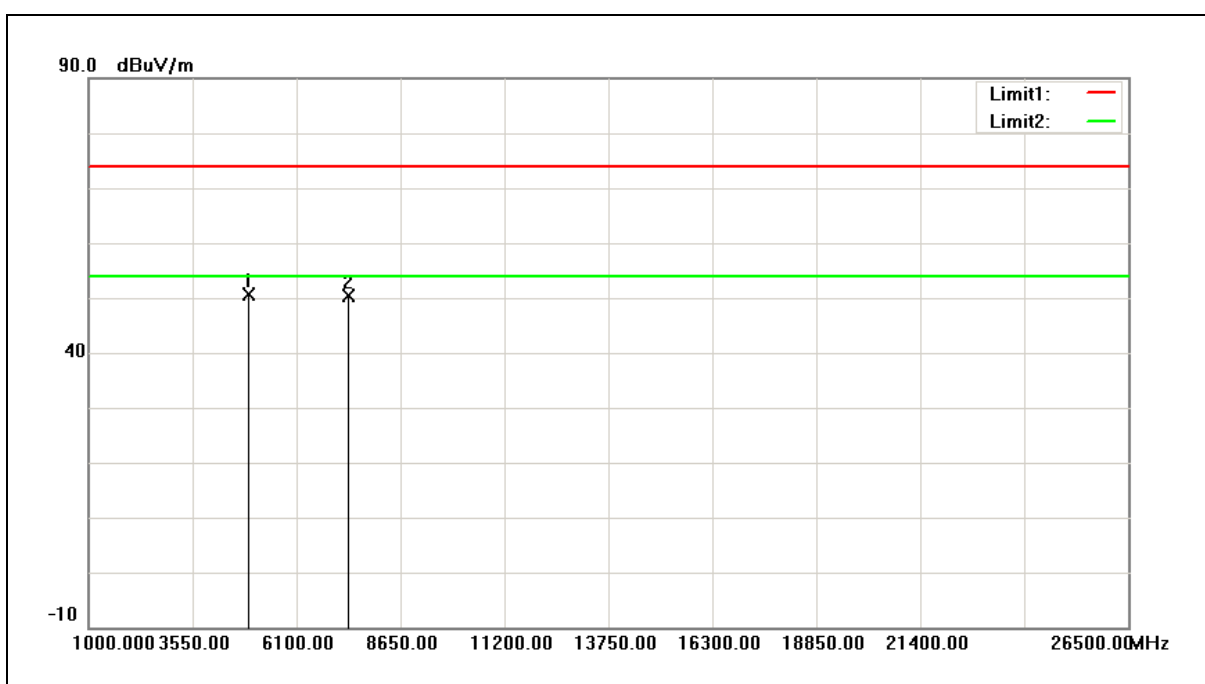
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4904.000	53.68	-6.86	46.82	74.00	-27.18	peak
2	7356.000	51.14	0.01	51.15	74.00	-22.85	peak

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2457MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/10/2017
Ant.Polar.:	Horizontal		



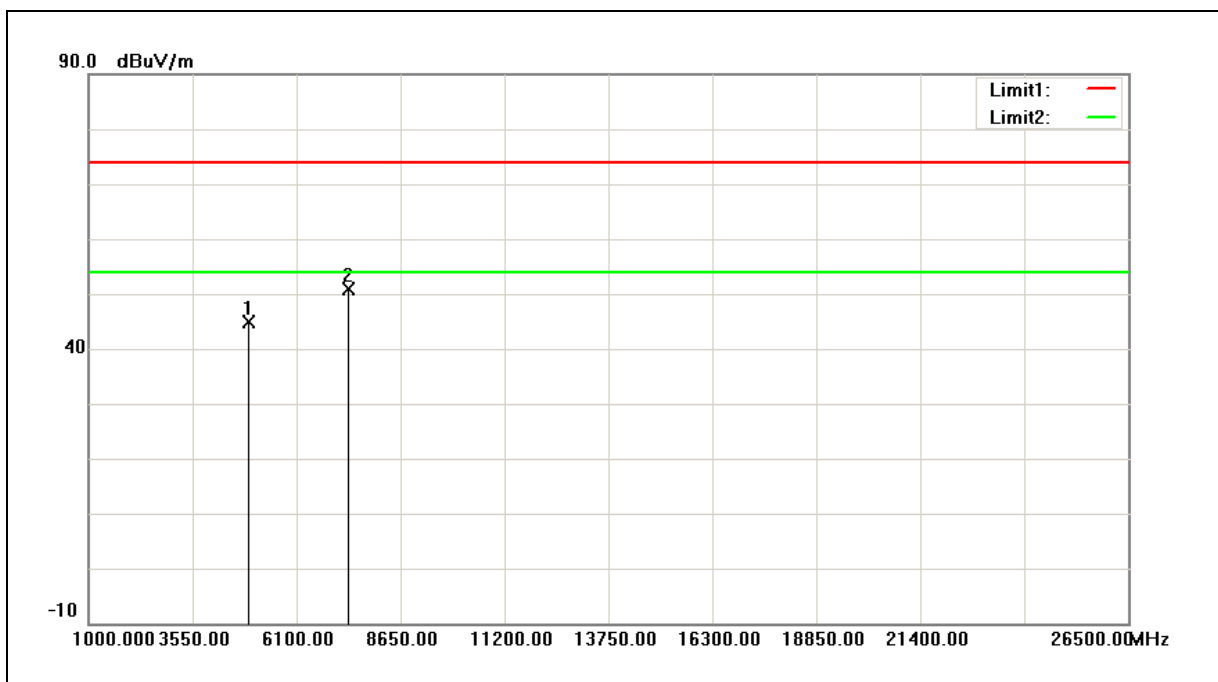
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4914.000	57.45	-6.83	50.62	74.00	-23.38	peak
2	7371.000	50.32	0.06	50.38	74.00	-23.62	peak

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2457MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/10/2017
Ant.Polar.:	Vertical		



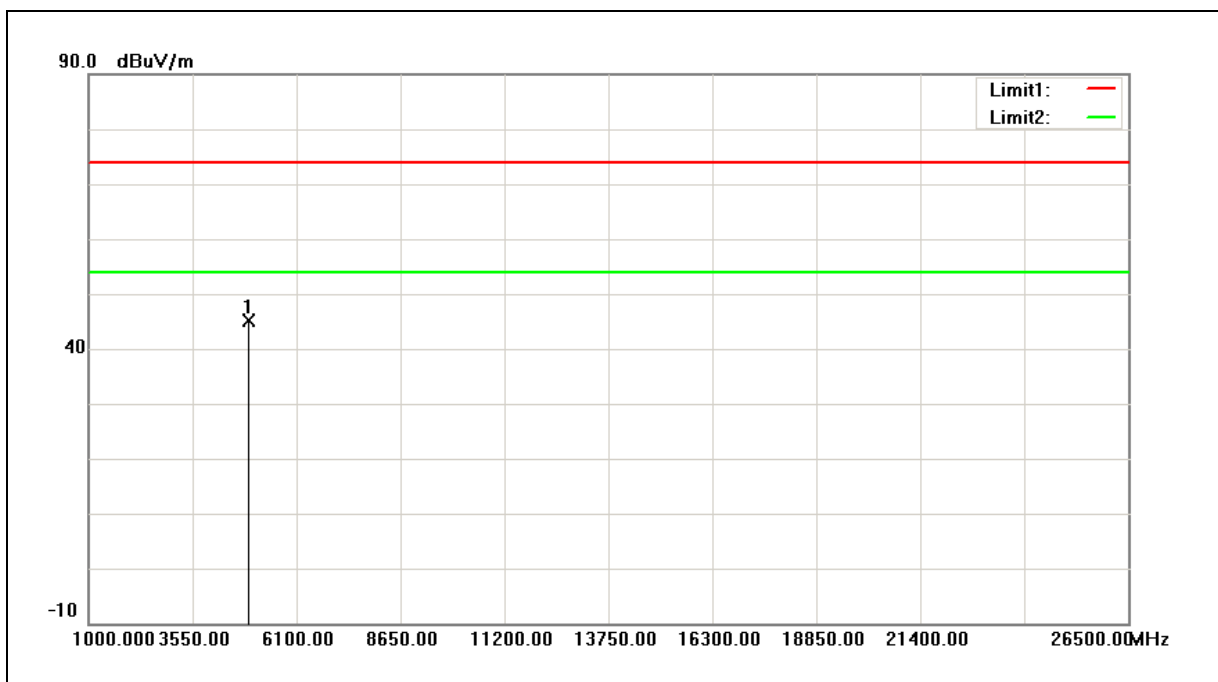
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4914.000	51.72	-6.83	44.89	74.00	-29.11	peak
2	7371.000	50.81	0.06	50.87	74.00	-23.13	peak

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2462MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/10/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.000	52.00	-6.81	45.19	74.00	-28.81	peak

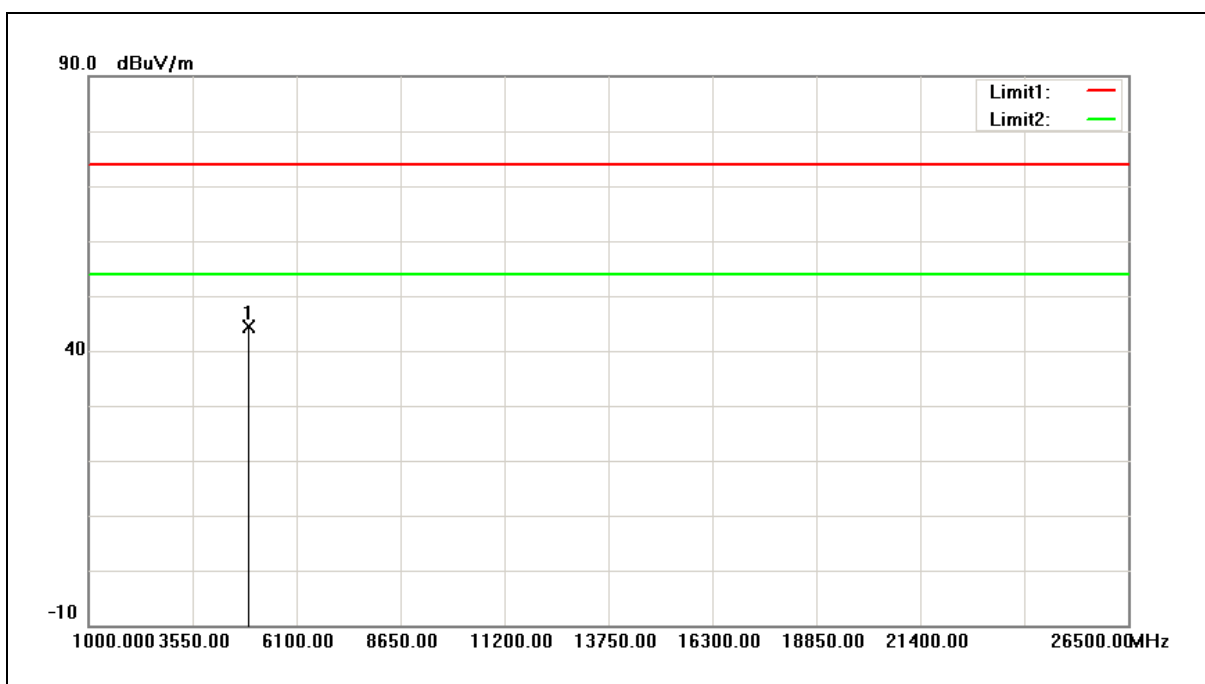
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2462MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/10/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.000	51.16	-6.81	44.35	74.00	-29.65	peak

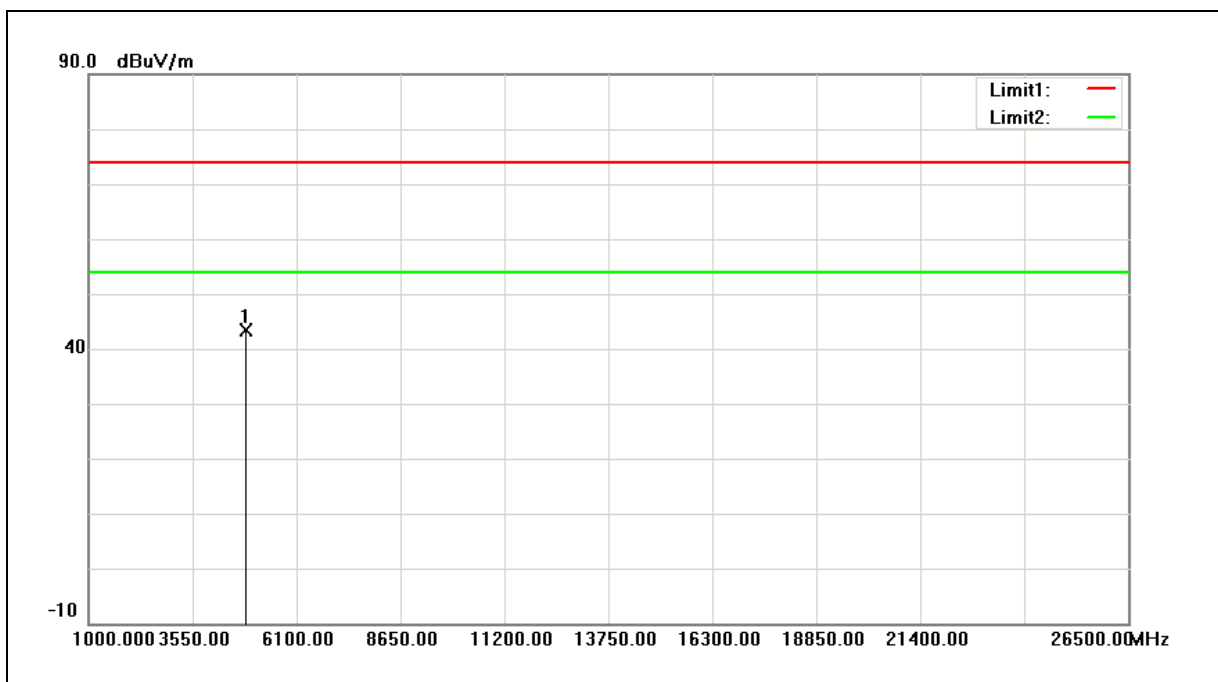
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2422MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/10/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4844.000	50.31	-7.03	43.28	74.00	-30.72	peak

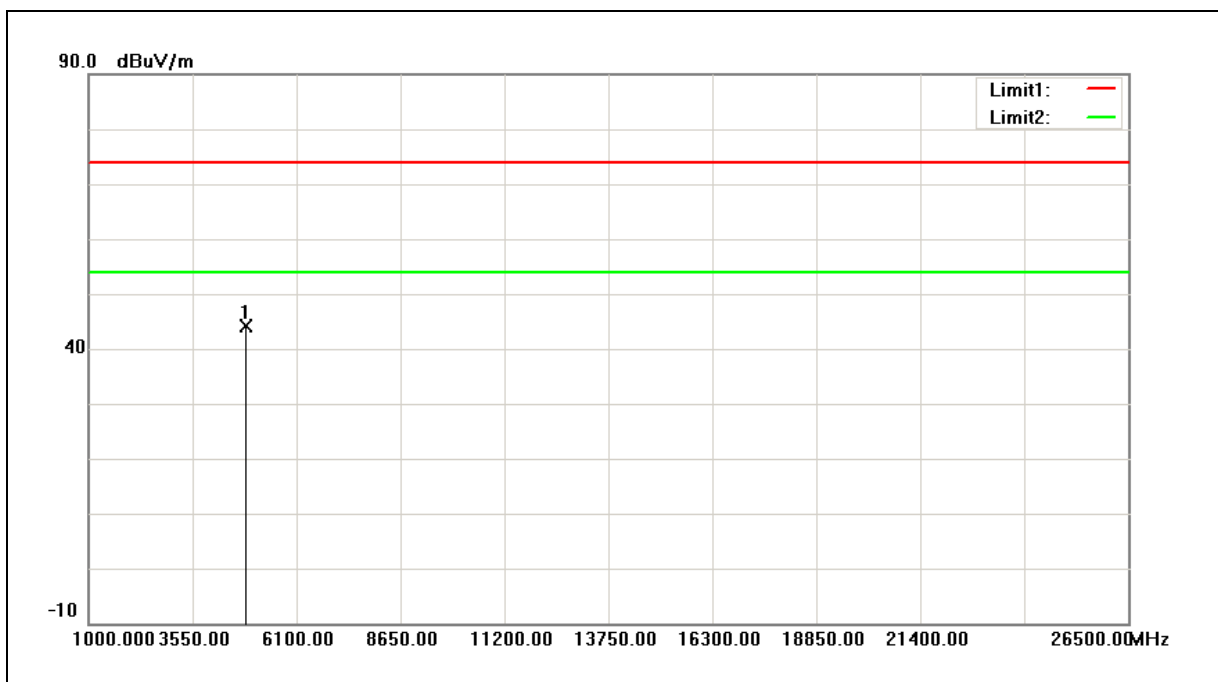
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2422MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/10/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4844.000	51.26	-7.03	44.23	74.00	-29.77	peak

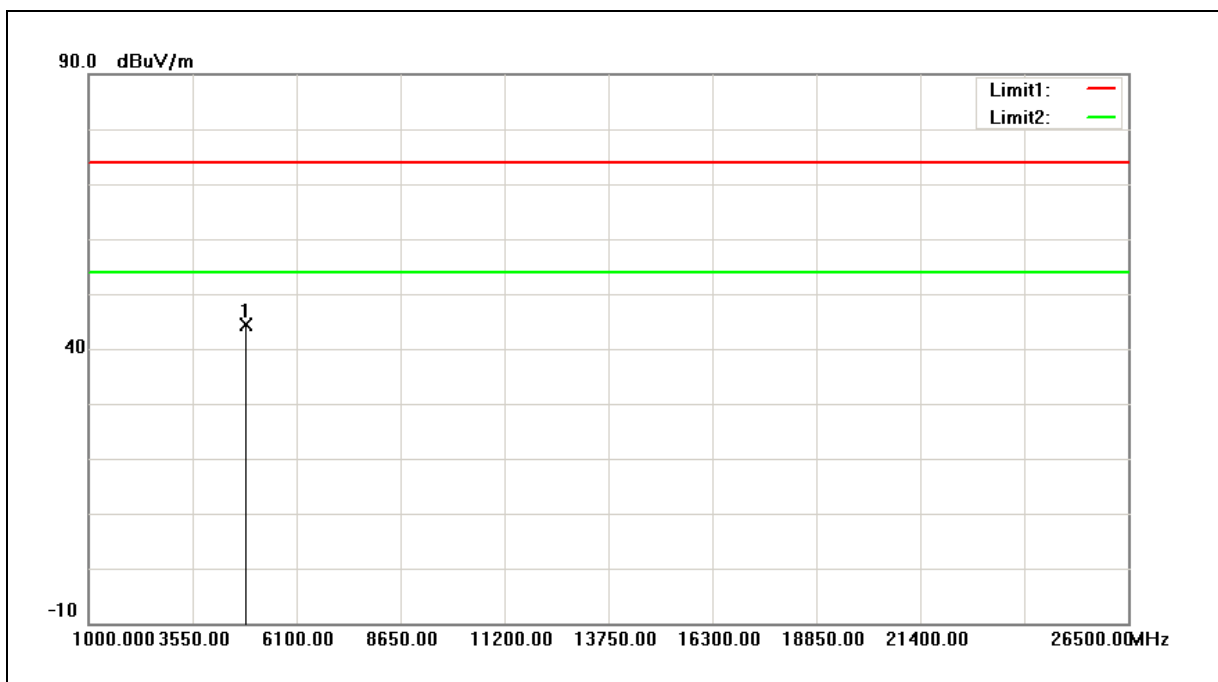
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2427MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/10/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4854.000	51.39	-7.01	44.38	74.00	-29.62	peak

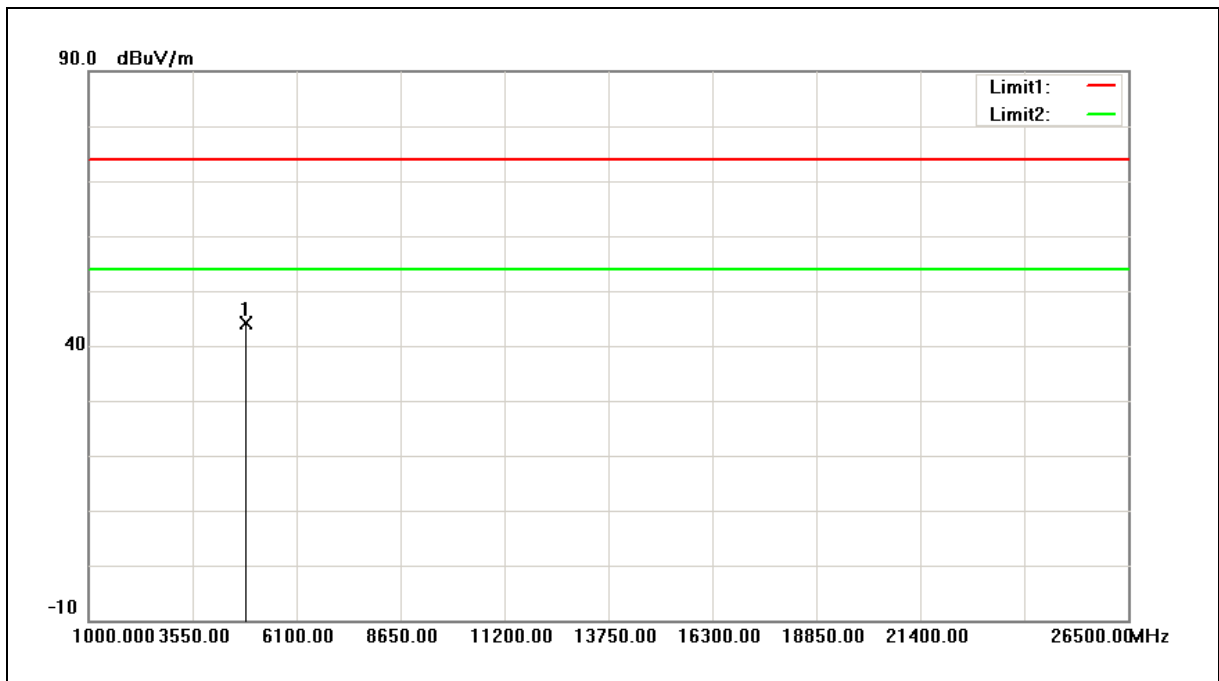
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2427MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/10/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4854.000	51.17	-7.01	44.16	74.00	-29.84	peak

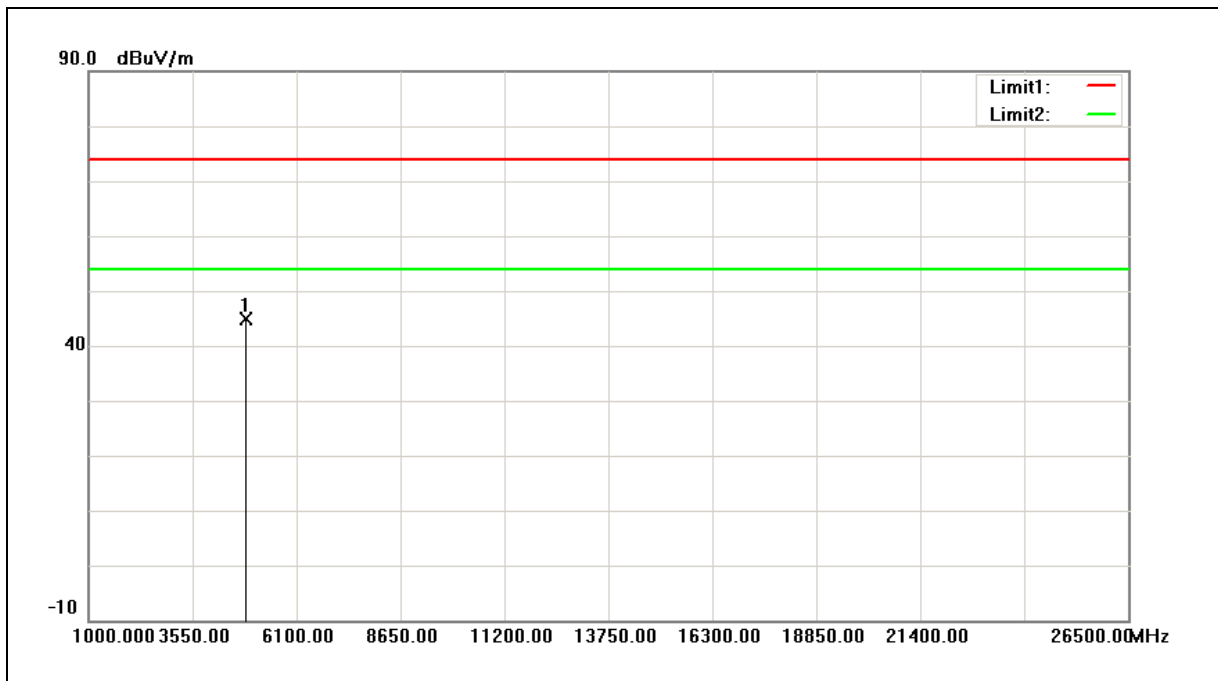
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2437MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/10/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4874.000	51.92	-6.95	44.97	74.00	-29.03	peak

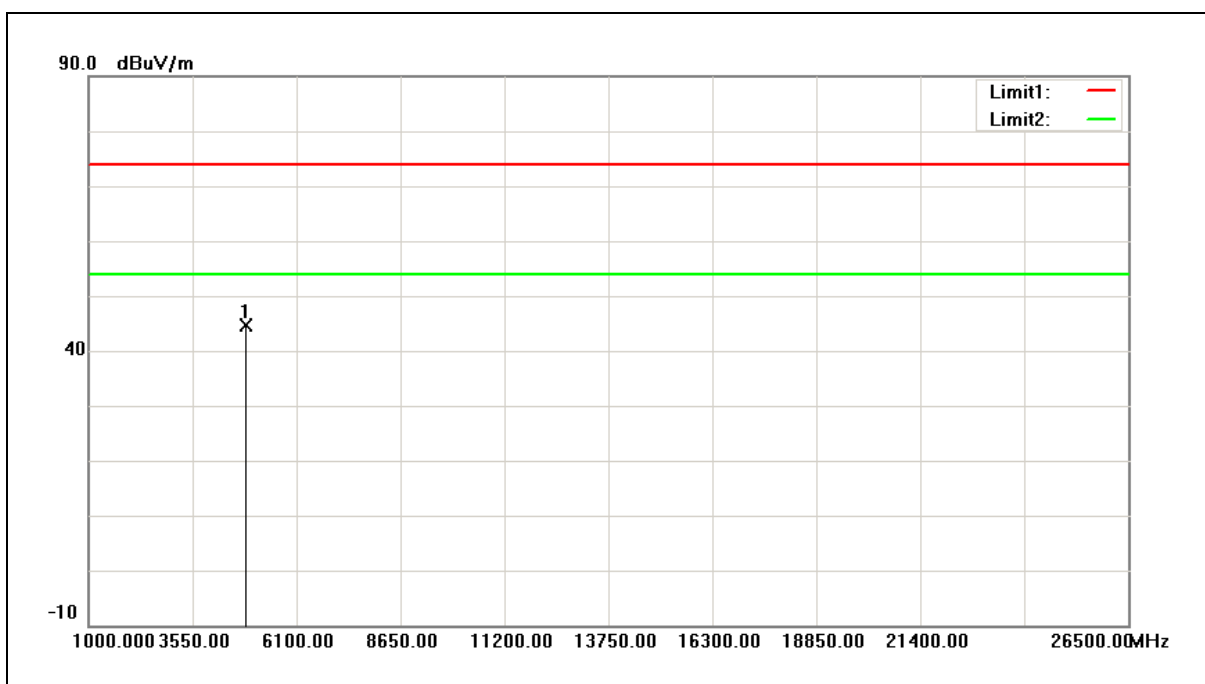
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2437MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/10/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4874.000	51.67	-6.95	44.72	74.00	-29.28	peak

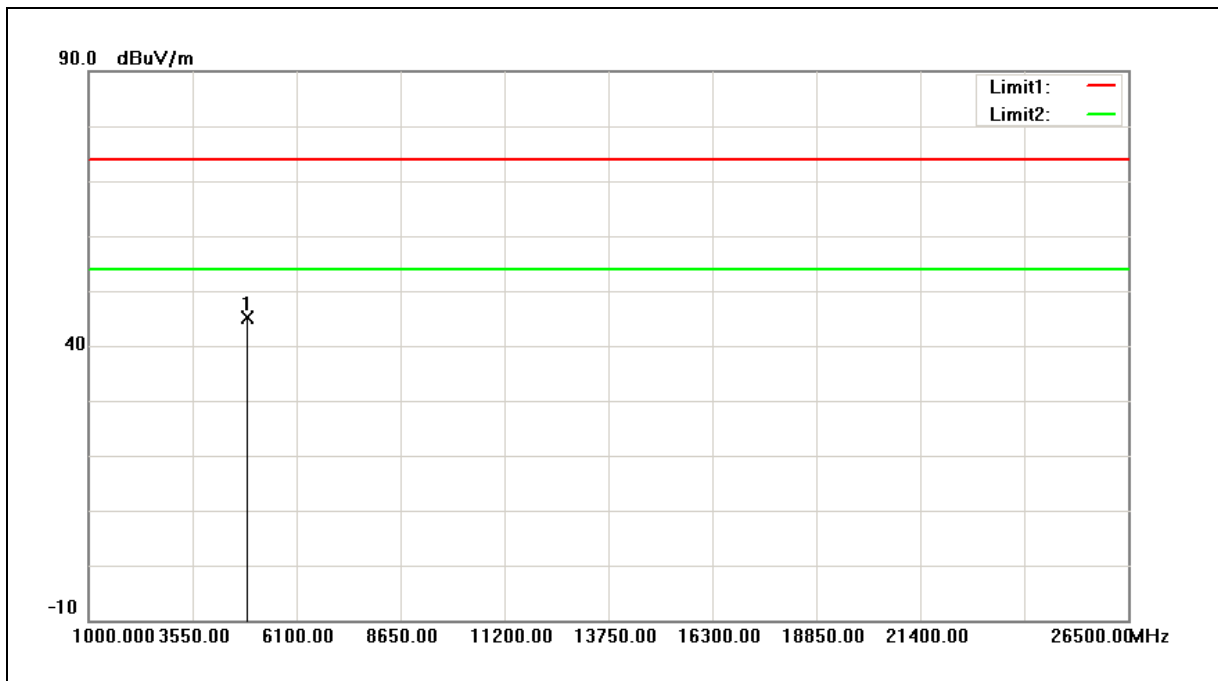
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2447MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/10/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4894.000	51.91	-6.89	45.02	74.00	-28.98	peak

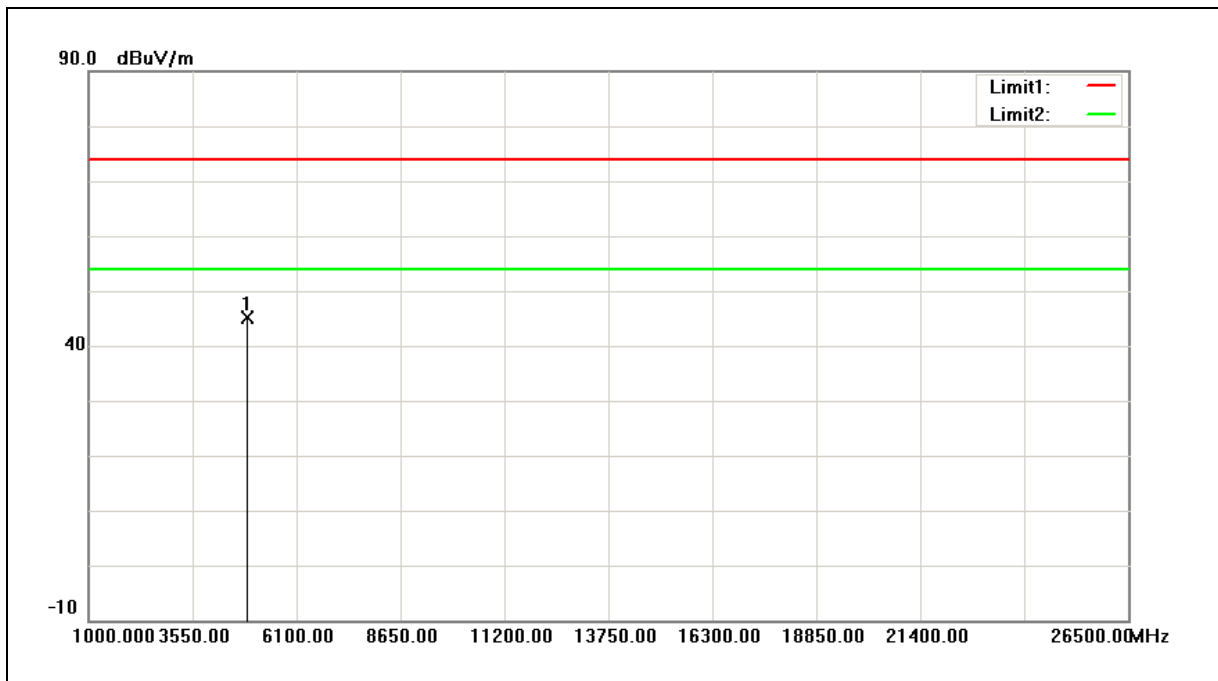
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2447MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/10/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4894.000	52.04	-6.89	45.15	74.00	-28.85	peak

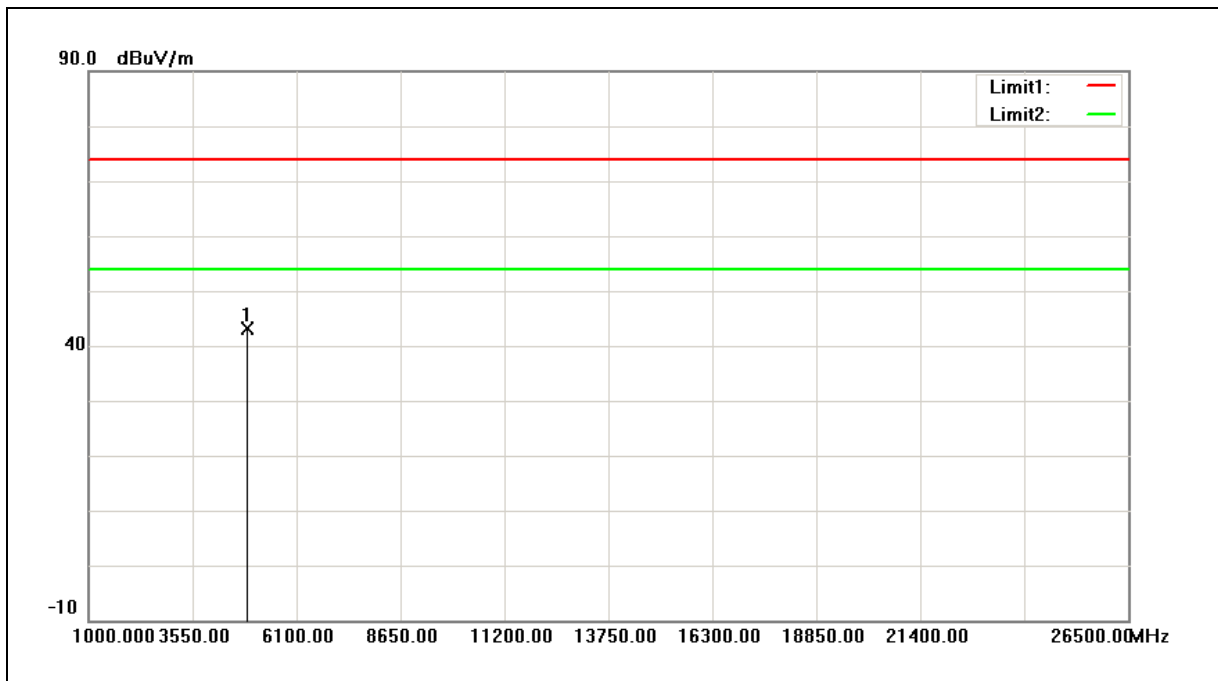
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2452MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/10/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4904.000	50.04	-6.86	43.18	74.00	-30.82	peak

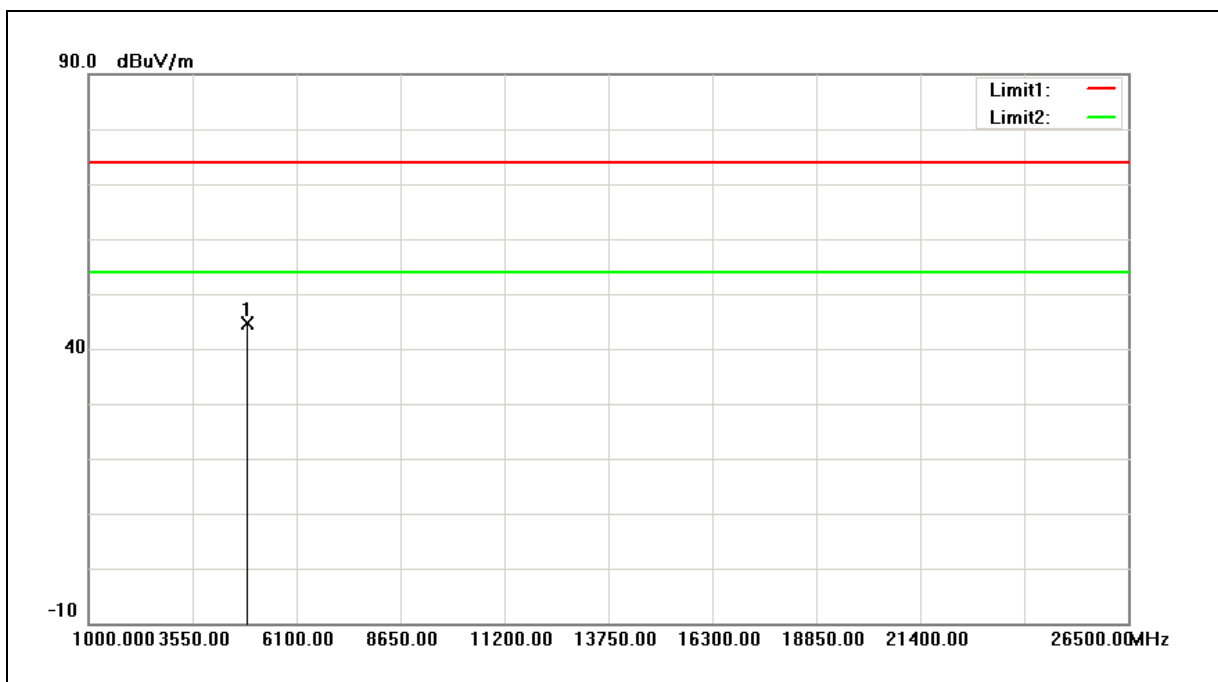
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2452MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/10/2017
Ant.Polar.:	Vertical		



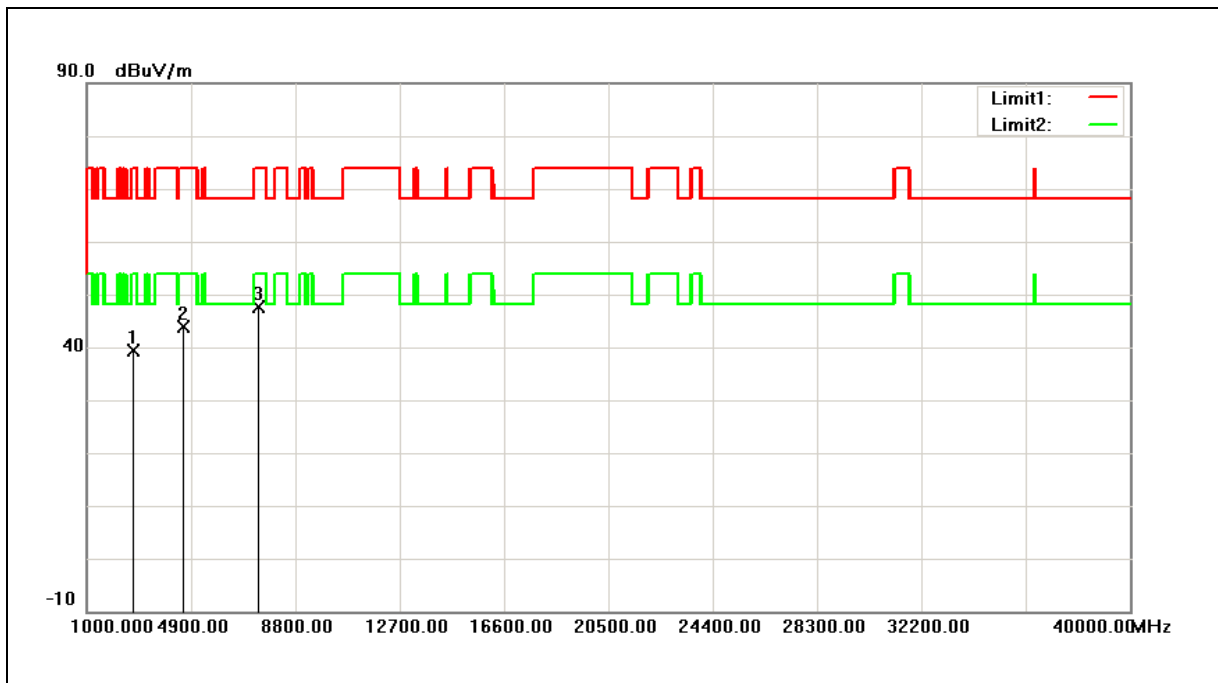
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4904.000	51.52	-6.86	44.66	74.00	-29.34	peak

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Transmitter Unwanted Emissions	Power:	AC 120V/60Hz
Test Mode:	Simultaneous Transmitting	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
	(DTS+NII)	Date:	04/06/2017
Ant.Polar.:	Horizontal		



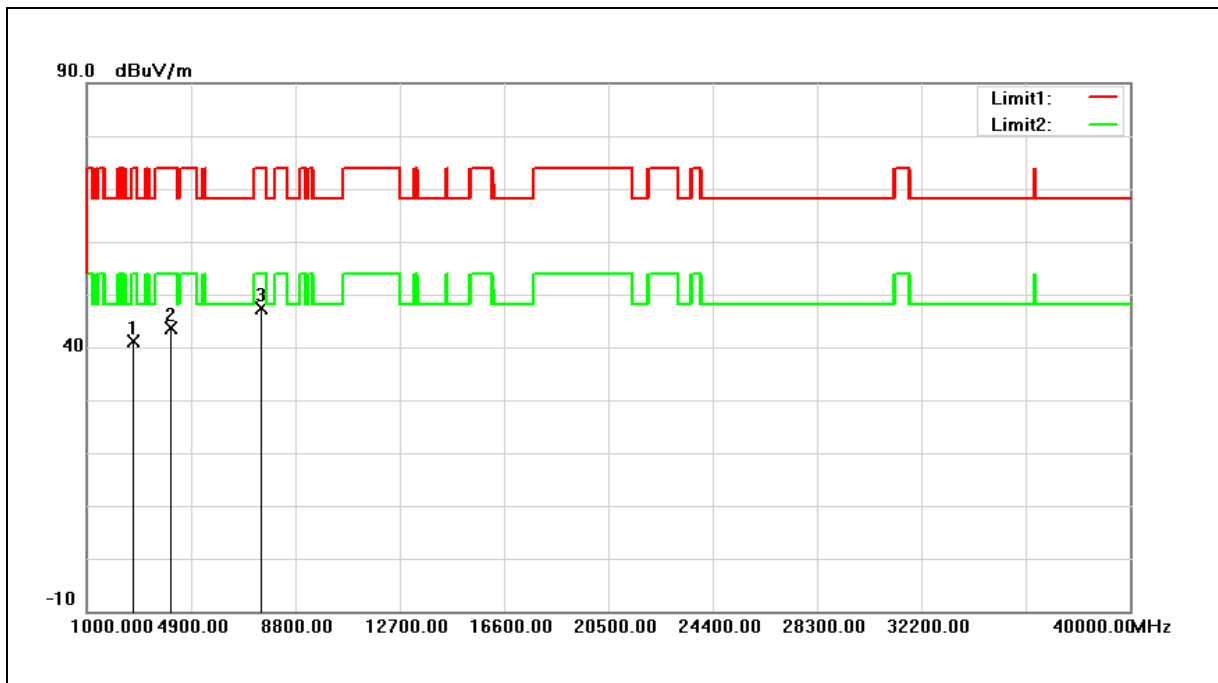
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2734.000	52.23	-12.97	39.26	74.00	-34.74	peak
2	4621.000	51.66	-7.71	43.95	74.00	-30.05	peak
3	7409.000	47.43	0.19	47.62	74.00	-26.38	peak

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Transmitter Unwanted Emissions	Power:	AC 120V/60Hz
Test Mode:	Simultaneous Transmitting	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
	(DTS+NII)	Date:	04/06/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2751.000	54.01	-12.93	41.08	74.00	-32.92	peak
2	4145.000	52.60	-9.00	43.60	74.00	-30.40	peak
3	7545.000	46.68	0.64	47.32	74.00	-26.68	peak

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

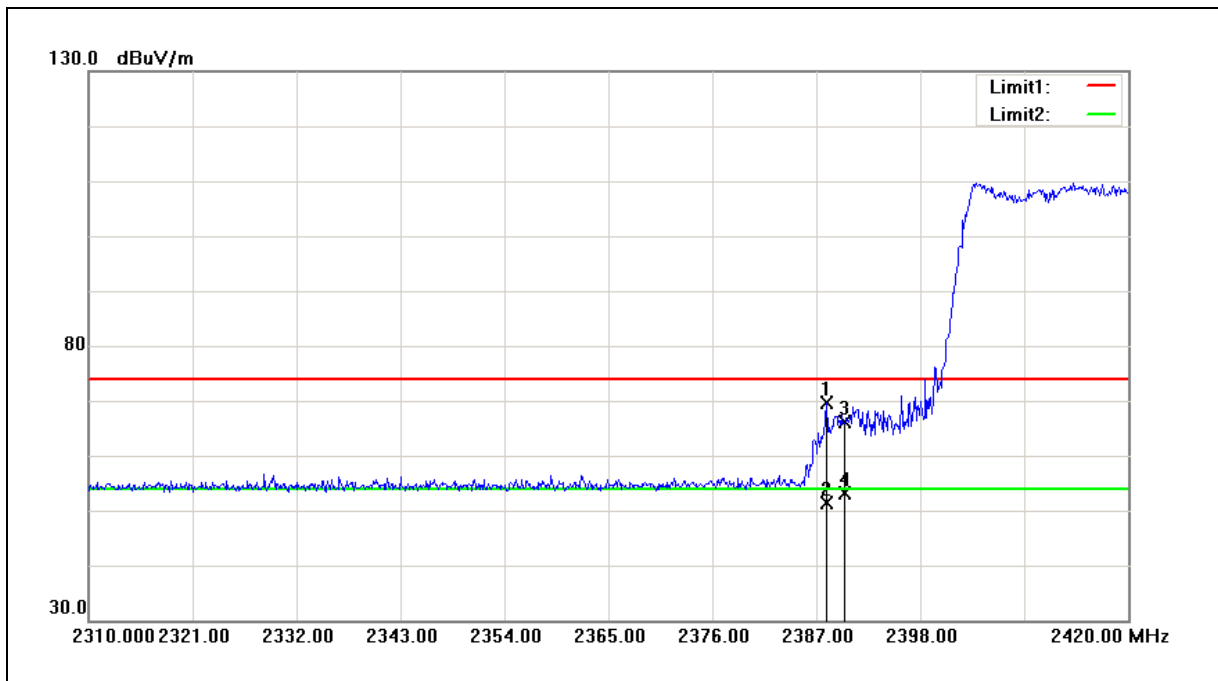
2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Band Edge

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2412MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	05/26/2017
Ant.Polar.:	Horizontal		



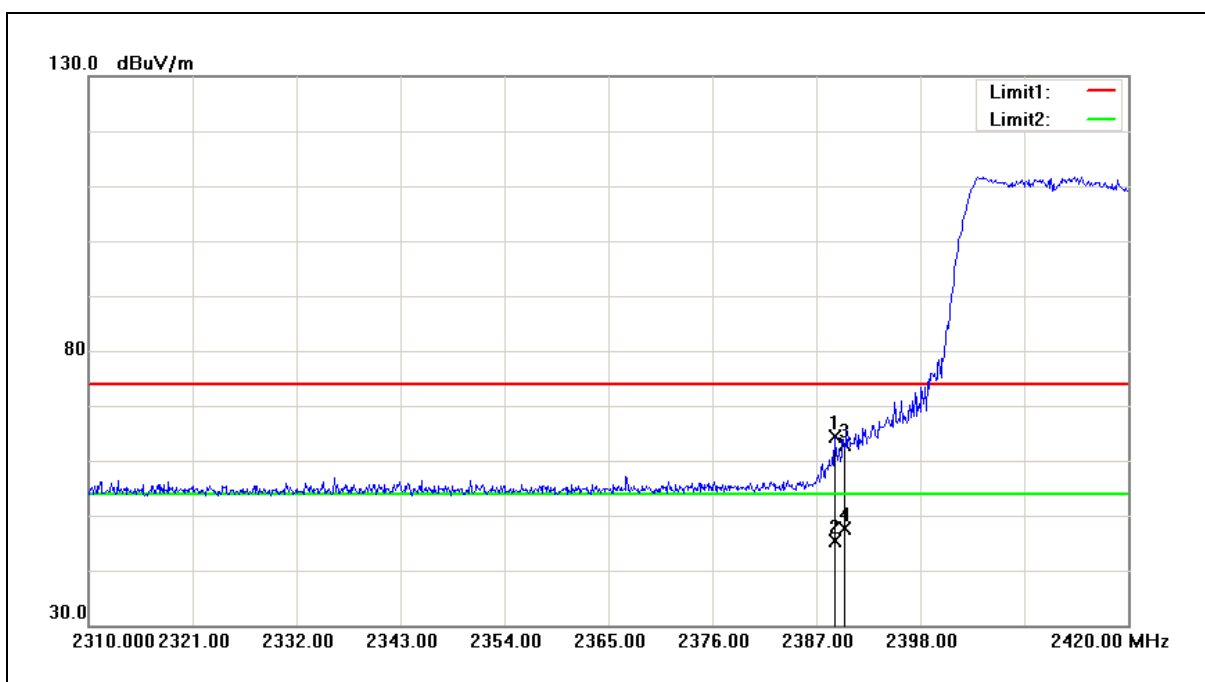
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.100	69.90	-0.26	69.64	74.00	-4.36	peak
2	2388.100	51.70	-0.26	51.44	54.00	-2.56	AVG
3	2390.000	66.40	-0.26	66.14	74.00	-7.86	peak
4	2390.000	53.38	-0.26	53.12	54.00	-0.88	AVG

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2412MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	05/26/2017
Ant.Polar.:	Vertical		



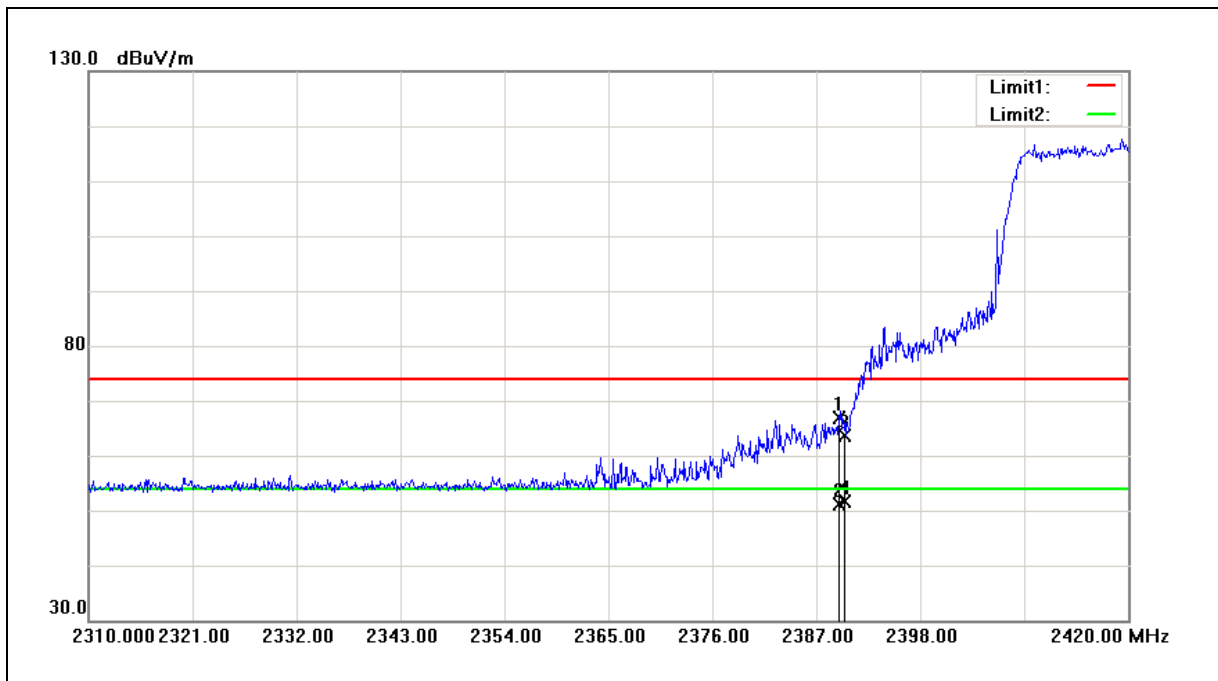
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.980	64.72	-0.26	64.46	74.00	-9.54	peak
2	2388.980	45.59	-0.26	45.33	54.00	-8.67	AVG
3	2390.000	63.24	-0.26	62.98	74.00	-11.02	peak
4	2390.000	47.97	-0.26	47.71	54.00	-6.29	AVG

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2417MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	05/26/2017
Ant.Polar.:	Horizontal		



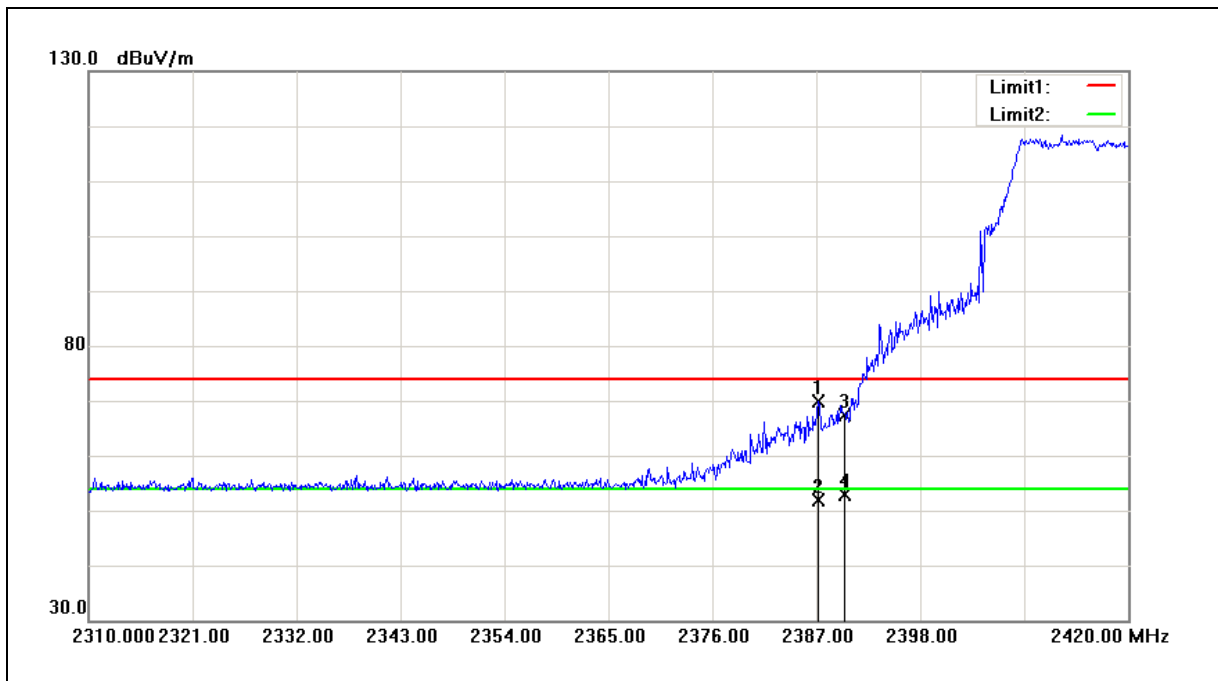
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.420	67.18	-0.26	66.92	74.00	-7.08	peak
2	2389.420	51.43	-0.26	51.17	54.00	-2.83	AVG
3	2390.000	64.01	-0.26	63.75	74.00	-10.25	peak
4	2390.000	51.78	-0.26	51.52	54.00	-2.48	AVG

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2417MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	05/26/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2387.220	70.16	-0.27	69.89	74.00	-4.11	peak
2	2387.220	52.19	-0.27	51.92	54.00	-2.08	AVG
3	2390.000	67.63	-0.26	67.37	74.00	-6.63	peak
4	2390.000	53.23	-0.26	52.97	54.00	-1.03	AVG

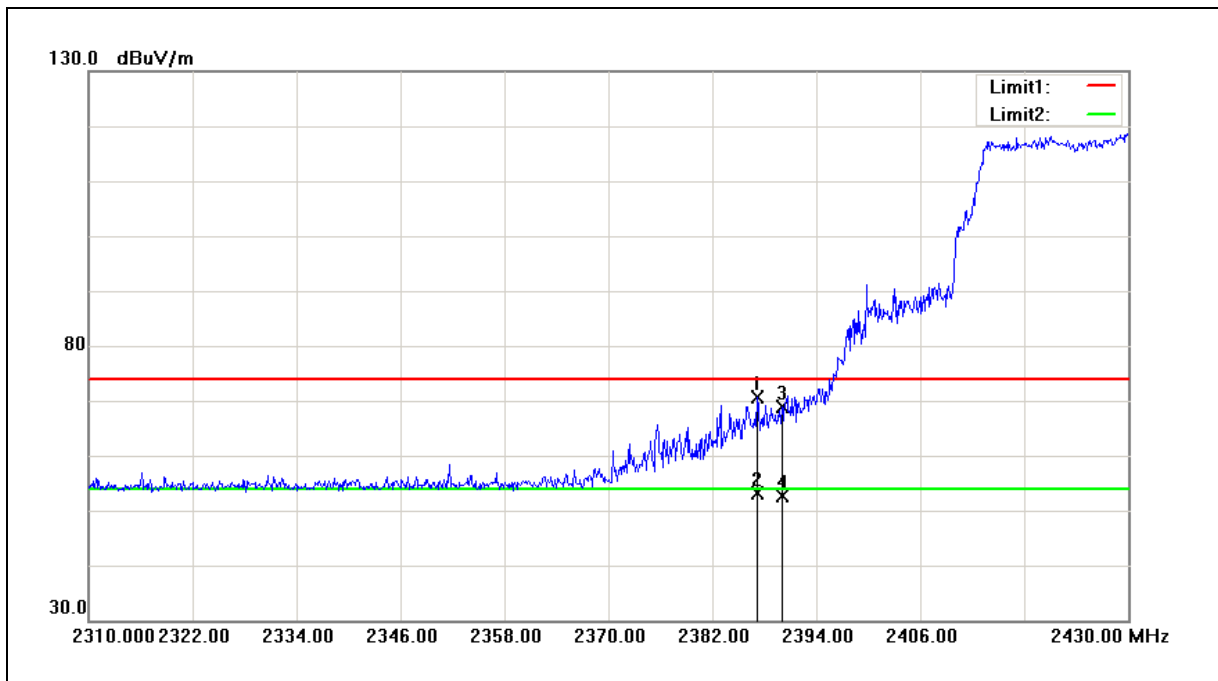
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2422MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	05/26/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2387.160	71.01	-0.27	70.74	74.00	-3.26	peak
2	2387.160	53.35	-0.27	53.08	54.00	-0.92	AVG
3	2390.000	69.25	-0.26	68.99	74.00	-5.01	peak
4	2390.000	52.84	-0.26	52.58	54.00	-1.42	AVG

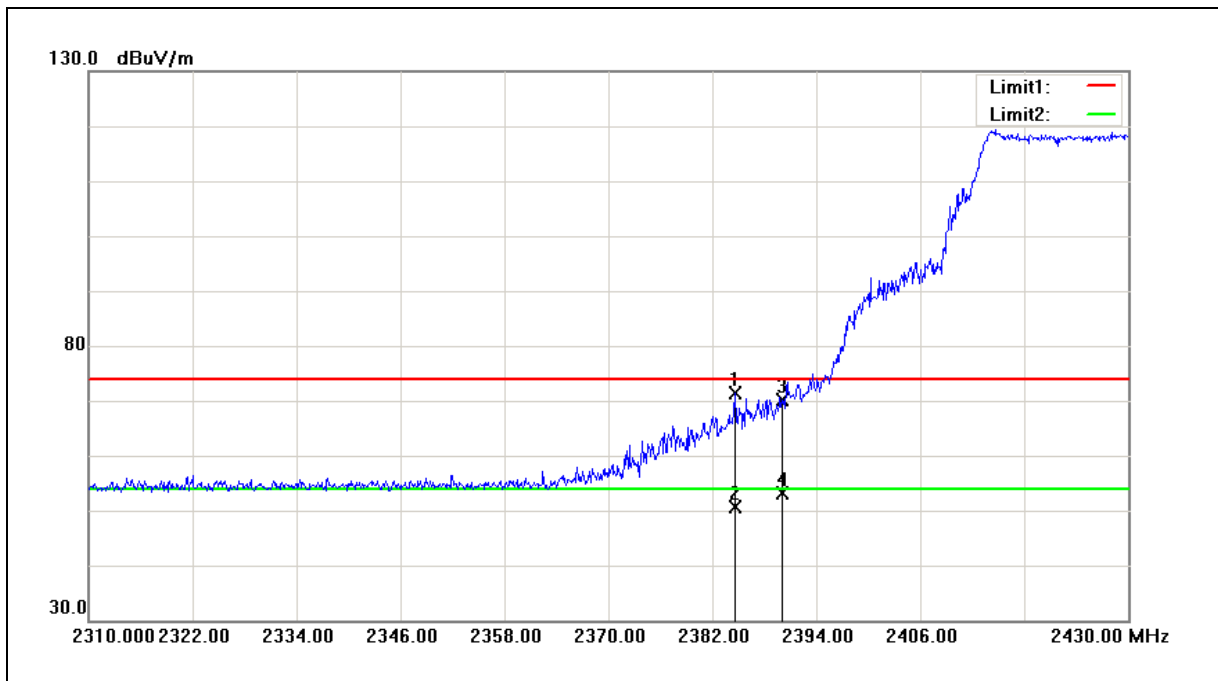
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2422MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	05/26/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2384.640	71.56	-0.28	71.28	74.00	-2.72	peak
2	2384.640	50.90	-0.28	50.62	54.00	-3.38	AVG
3	2390.000	70.40	-0.26	70.14	74.00	-3.86	peak
4	2390.000	53.39	-0.26	53.13	54.00	-0.87	AVG

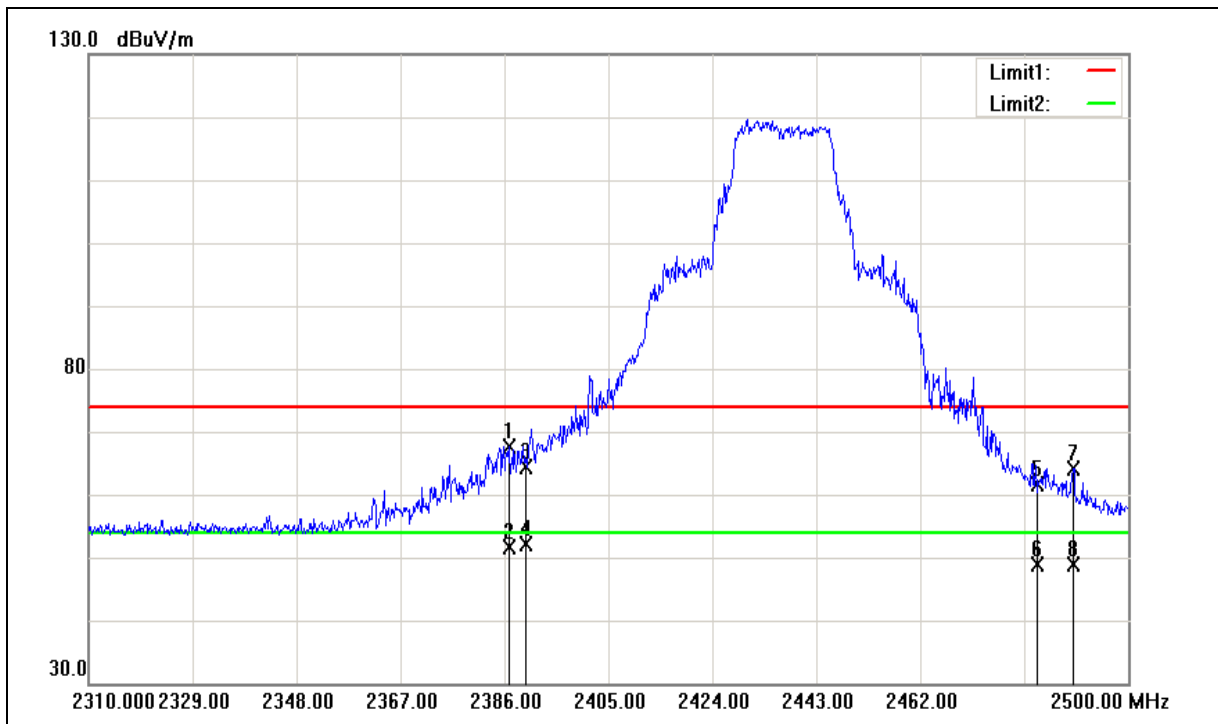
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2437MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	05/26/2017
Ant.Polar.:	Horizontal		





Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2437MHz	Temp.(°C)/Hum. (%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	05/26/2017
Ant.Polar.:	Horizontal		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.760	67.88	-0.27	67.61	74.00	-6.39	peak
2	2386.760	51.83	-0.27	51.56	54.00	-2.44	AVG
3	2390.000	64.72	-0.26	64.46	74.00	-9.54	peak
4	2390.000	52.45	-0.26	52.19	54.00	-1.81	AVG
5	2483.500	61.47	0.11	61.58	74.00	-12.42	peak
6	2483.500	48.82	0.11	48.93	54.00	-5.07	AVG
7	2489.930	64.05	0.14	64.19	74.00	-9.81	peak
8	2489.930	48.69	0.14	48.83	54.00	-5.17	AVG

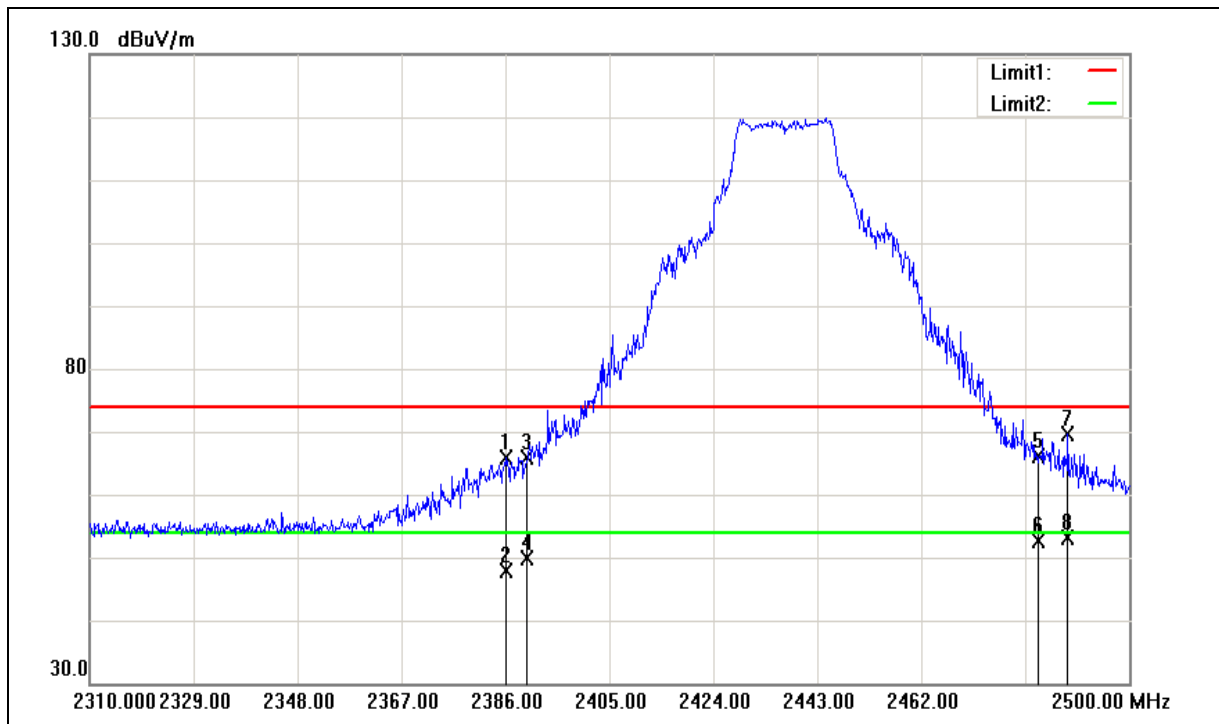
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2437MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	05/26/2017
Ant.Polar.:	Vertical		





Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2437MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	05/26/2017
Ant.Polar.:	Vertical		

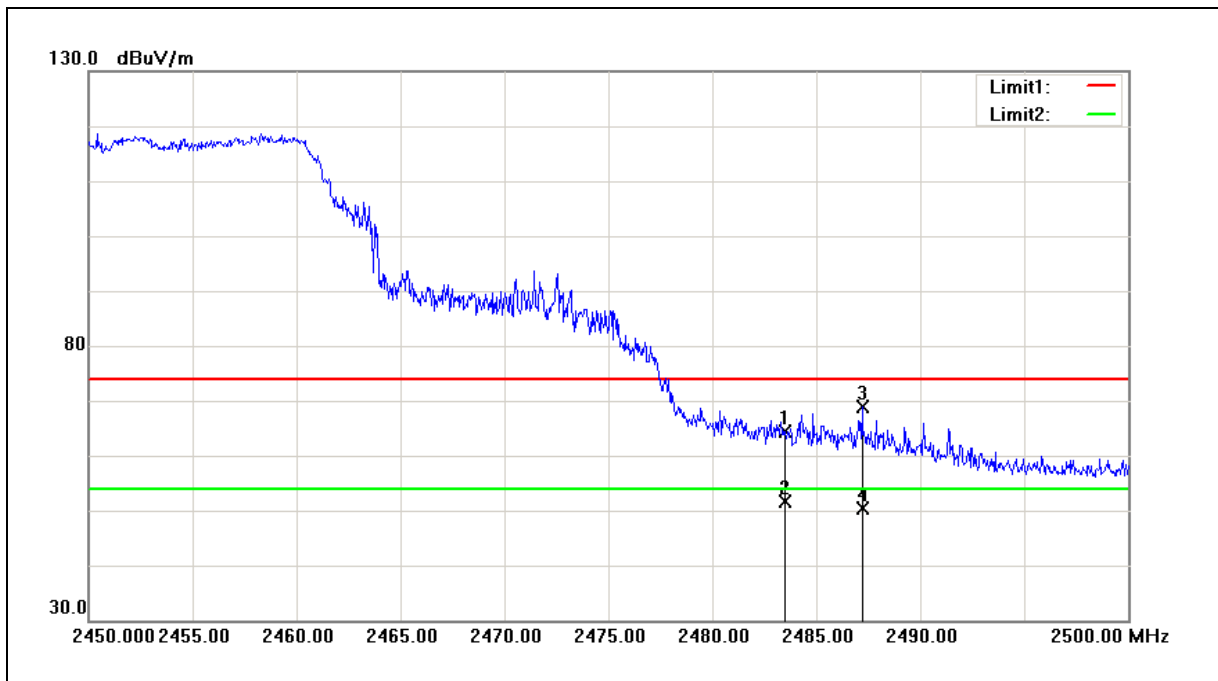
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.000	66.17	-0.28	65.89	74.00	-8.11	peak
2	2386.000	48.28	-0.28	48.00	54.00	-6.00	AVG
3	2390.000	66.12	-0.26	65.86	74.00	-8.14	peak
4	2390.000	50.21	-0.26	49.95	54.00	-4.05	AVG
5	2483.500	65.97	0.11	66.08	74.00	-7.92	peak
6	2483.500	52.54	0.11	52.65	54.00	-1.35	AVG
7	2488.790	69.40	0.14	69.54	74.00	-4.46	peak
8	2488.790	52.90	0.14	53.04	54.00	-0.96	AVG

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2452MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	05/26/2017
Ant.Polar.:	Horizontal		



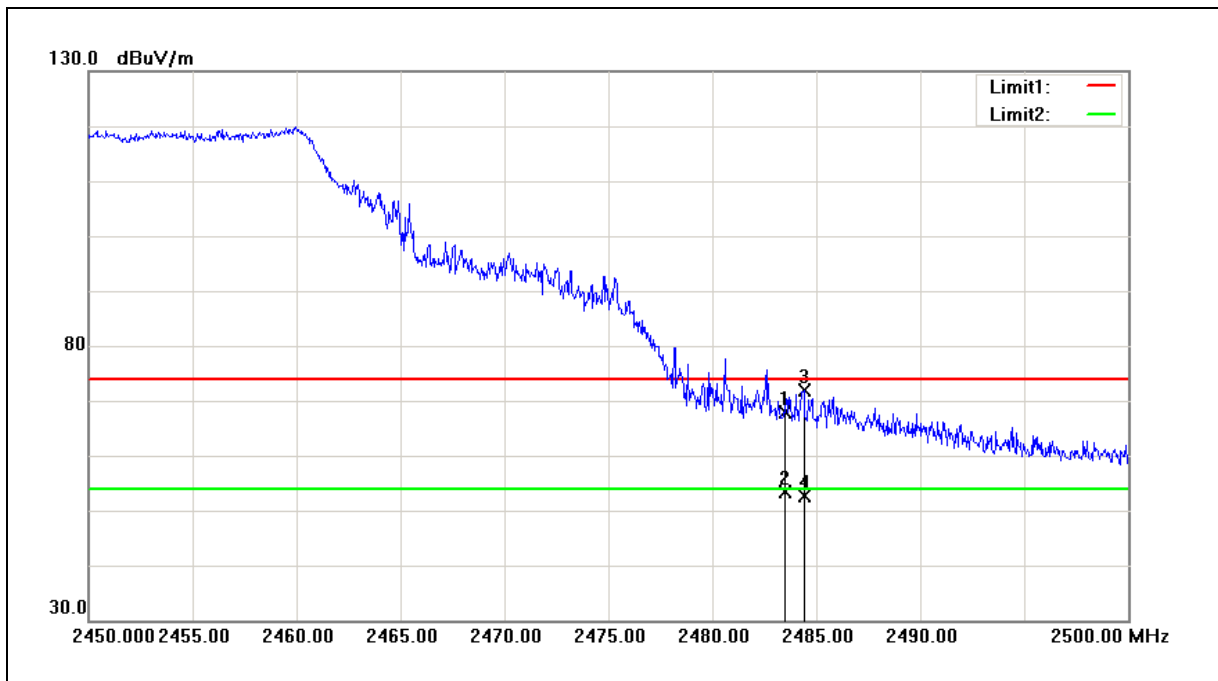
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	64.25	0.11	64.36	74.00	-9.64	peak
2	2483.500	51.42	0.11	51.53	54.00	-2.47	AVG
3	2487.200	68.85	0.12	68.97	74.00	-5.03	peak
4	2487.200	50.17	0.12	50.29	54.00	-3.71	AVG

Note: 1. Result (dBuV/m) = Correct Factor (dB/m) + Reading (dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2452MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	05/26/2017
Ant.Polar.:	Vertical		



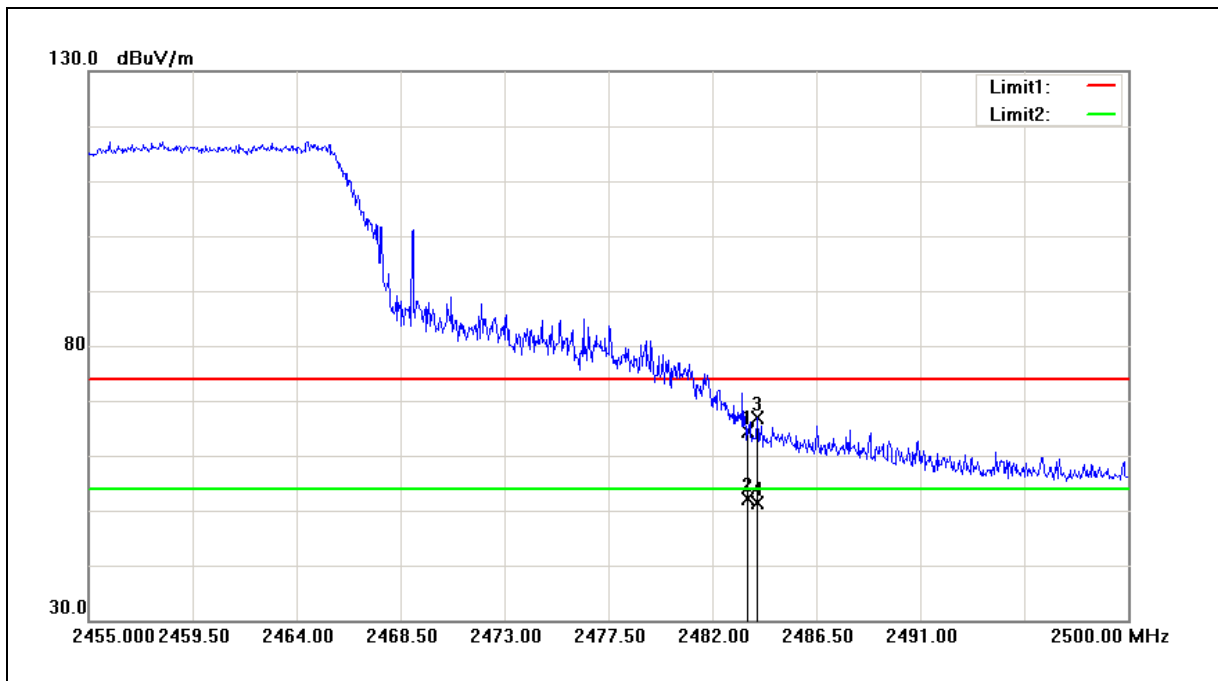
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	67.67	0.11	67.78	74.00	-6.22	peak
2	2483.500	53.25	0.11	53.36	54.00	-0.64	AVG
3	2484.400	71.83	0.12	71.95	74.00	-2.05	peak
4	2484.400	52.54	0.12	52.66	54.00	-1.34	AVG

Note: 1. Result (dBuV/m) = Correct Factor (dB/m) + Reading (dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2457MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	05/26/2017
Ant.Polar.:	Horizontal		



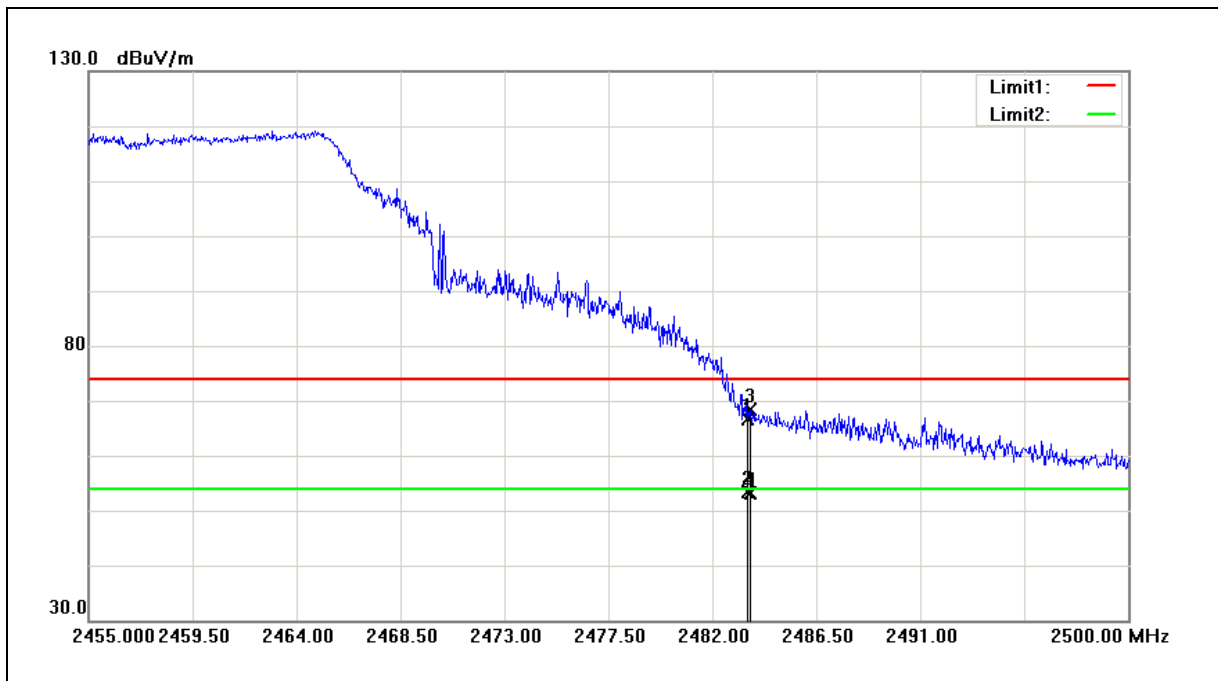
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	64.37	0.11	64.48	74.00	-9.52	peak
2	2483.500	52.06	0.11	52.17	54.00	-1.83	AVG
3	2483.935	66.76	0.12	66.88	74.00	-7.12	peak
4	2483.935	51.33	0.12	51.45	54.00	-2.55	AVG

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2457MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	05/26/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	66.55	0.11	66.66	74.00	-7.34	peak
2	2483.500	53.25	0.11	53.36	54.00	-0.64	AVG
3	2483.665	68.15	0.11	68.26	74.00	-5.74	peak
4	2483.665	52.97	0.11	53.08	54.00	-0.92	AVG

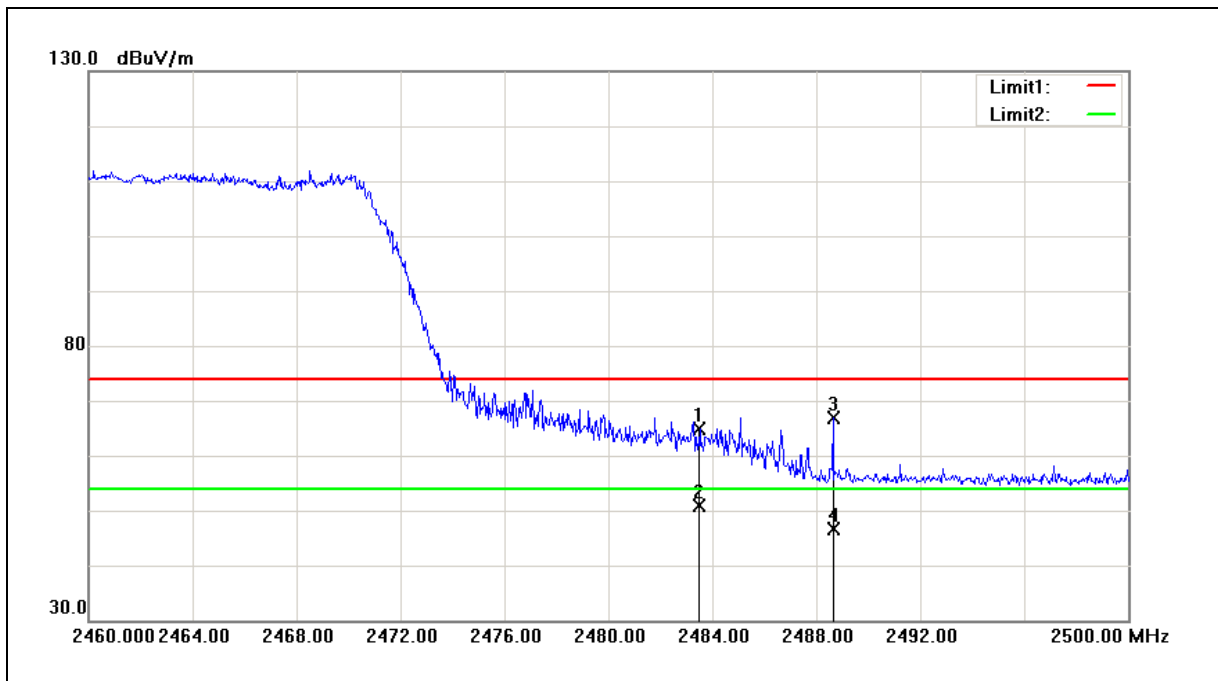
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2462MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	05/26/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	64.65	0.11	64.76	74.00	-9.24	peak
2	2483.500	50.67	0.11	50.78	54.00	-3.22	AVG
3	2488.640	66.73	0.14	66.87	74.00	-7.13	peak
4	2488.640	46.38	0.14	46.52	54.00	-7.48	AVG

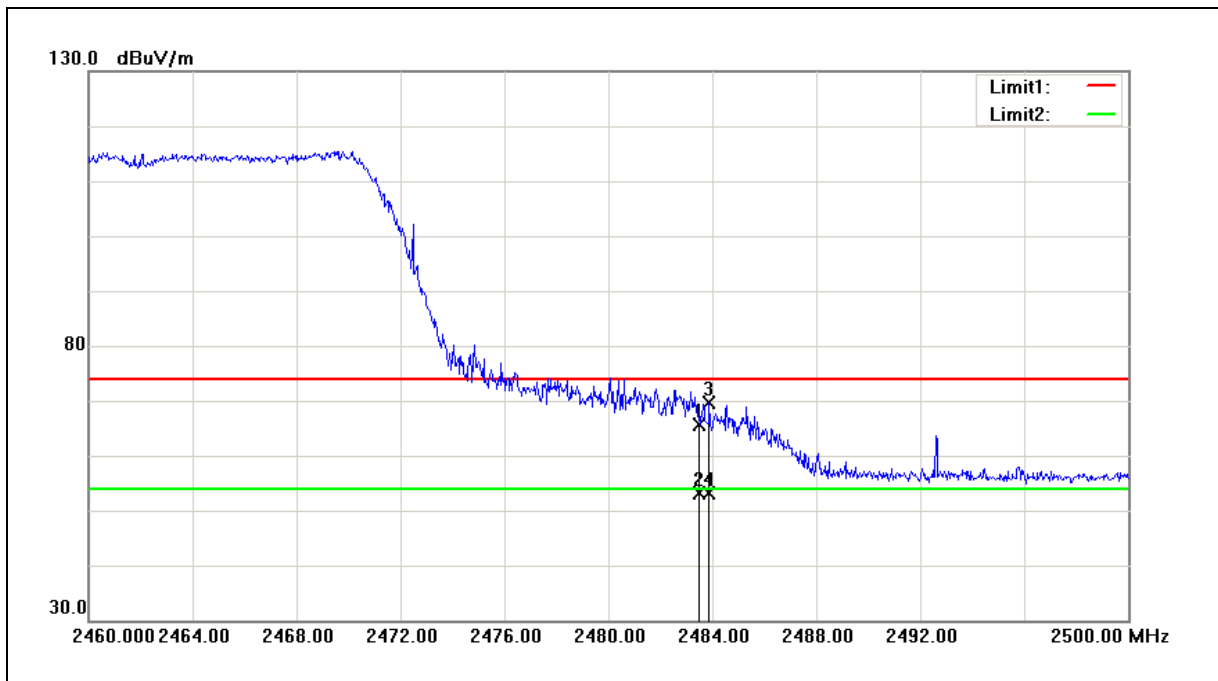
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2462MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	05/26/2017
Ant.Polar.:	Vertical		



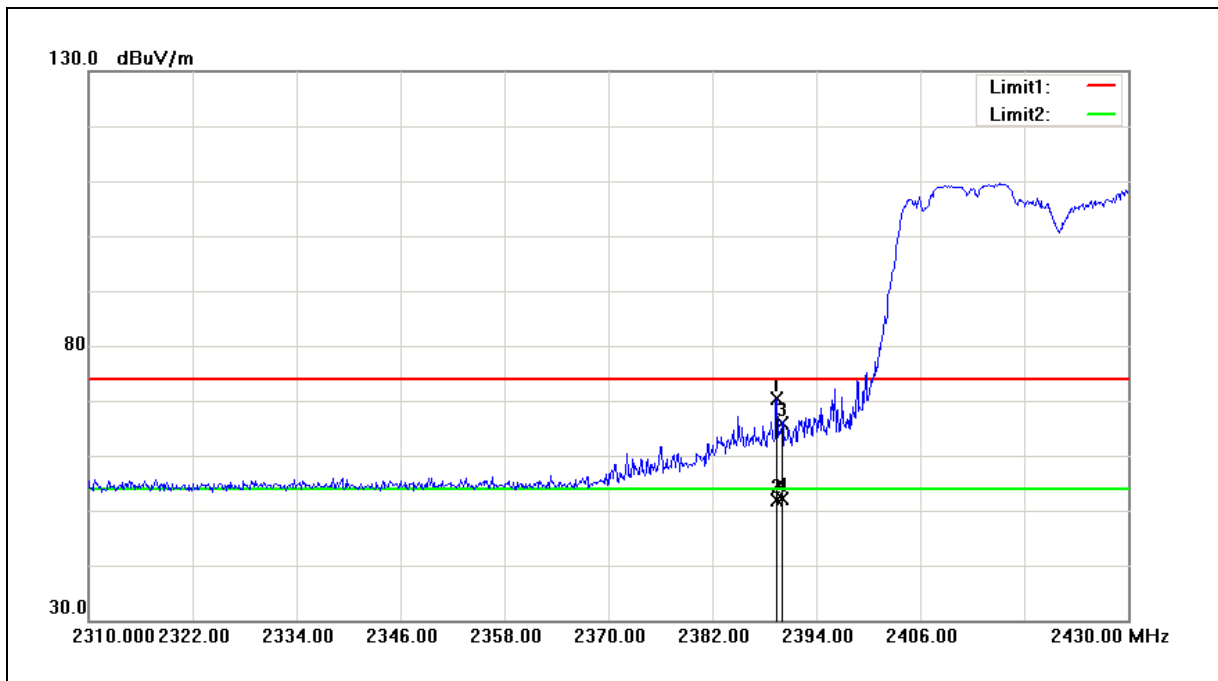
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	65.56	0.11	65.67	74.00	-8.33	peak
2	2483.500	52.93	0.11	53.04	54.00	-0.96	AVG
3	2483.880	69.49	0.11	69.60	74.00	-4.40	peak
4	2483.880	53.11	0.11	53.22	54.00	-0.78	AVG

Note: 1. Result (dBuV/m) = Correct Factor (dB/m) + Reading (dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2422MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	05/27/2017
Ant.Polar.:	Horizontal		



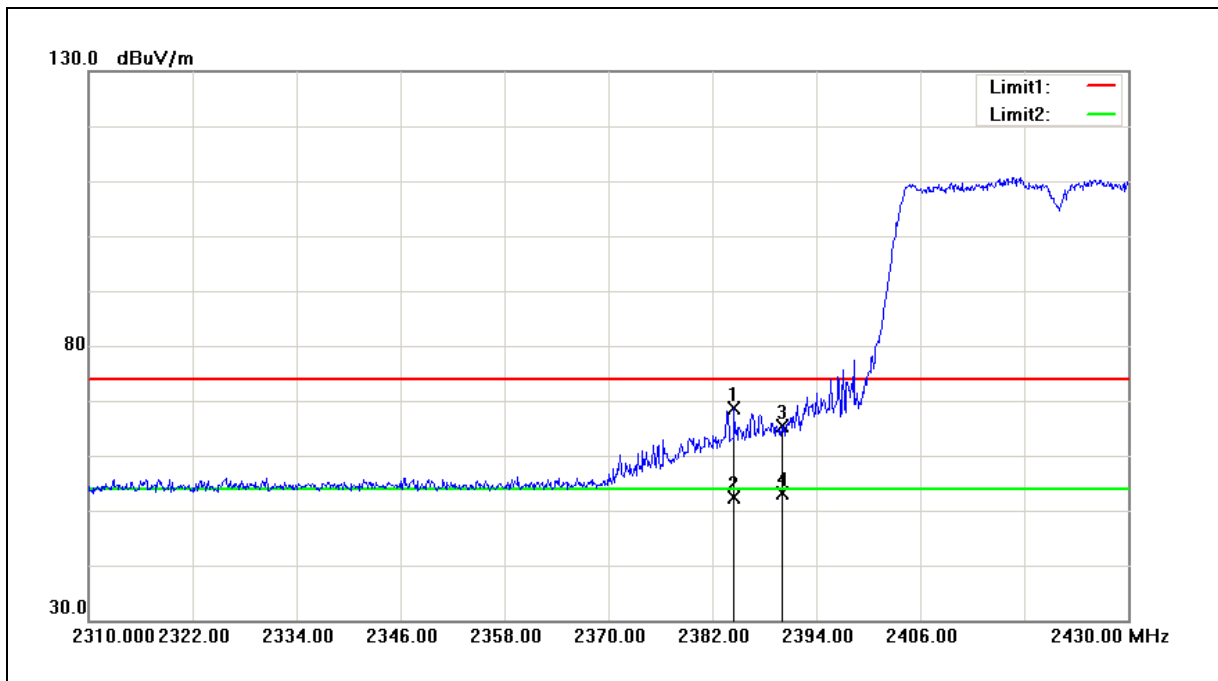
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.440	70.64	-0.26	70.38	74.00	-3.62	peak
2	2389.440	52.10	-0.26	51.84	54.00	-2.16	AVG
3	2390.000	66.16	-0.26	65.90	74.00	-8.10	peak
4	2390.000	52.46	-0.26	52.20	54.00	-1.80	AVG

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2422MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	05/27/2017
Ant.Polar.:	Vertical		



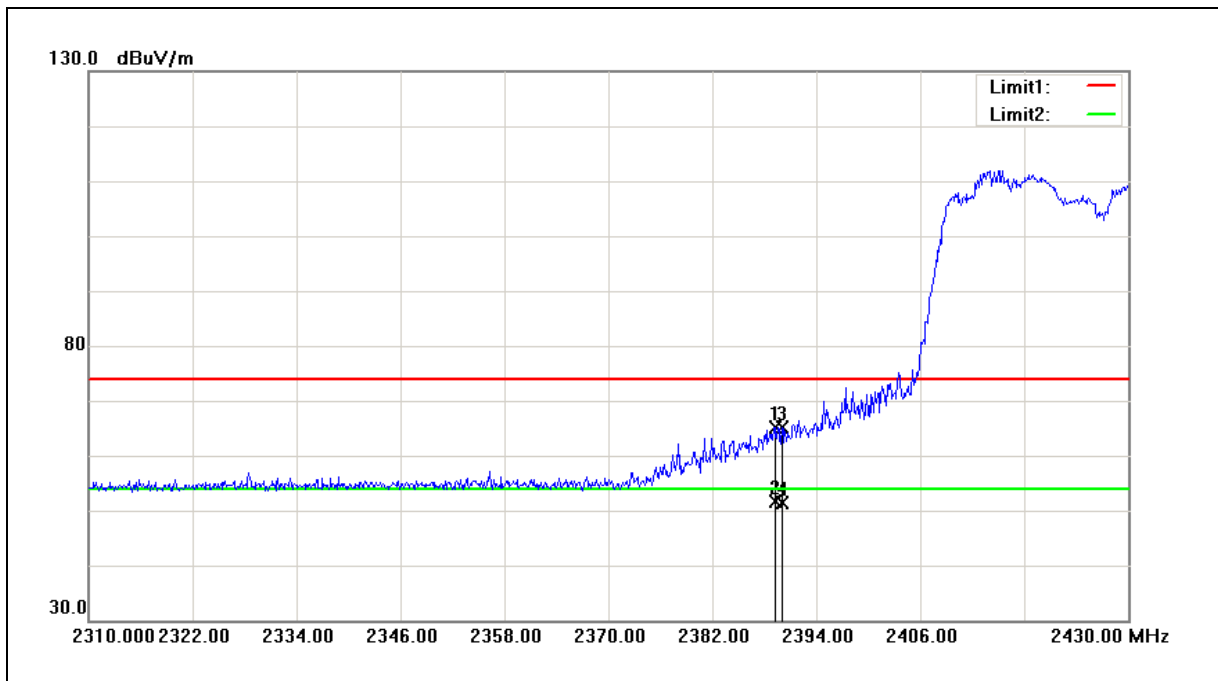
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2384.520	68.81	-0.28	68.53	74.00	-5.47	peak
2	2384.520	52.76	-0.28	52.48	54.00	-1.52	AVG
3	2390.000	65.67	-0.26	65.41	74.00	-8.59	peak
4	2390.000	53.47	-0.26	53.21	54.00	-0.79	AVG

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2427MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	05/27/2017
Ant.Polar.:	Horizontal		



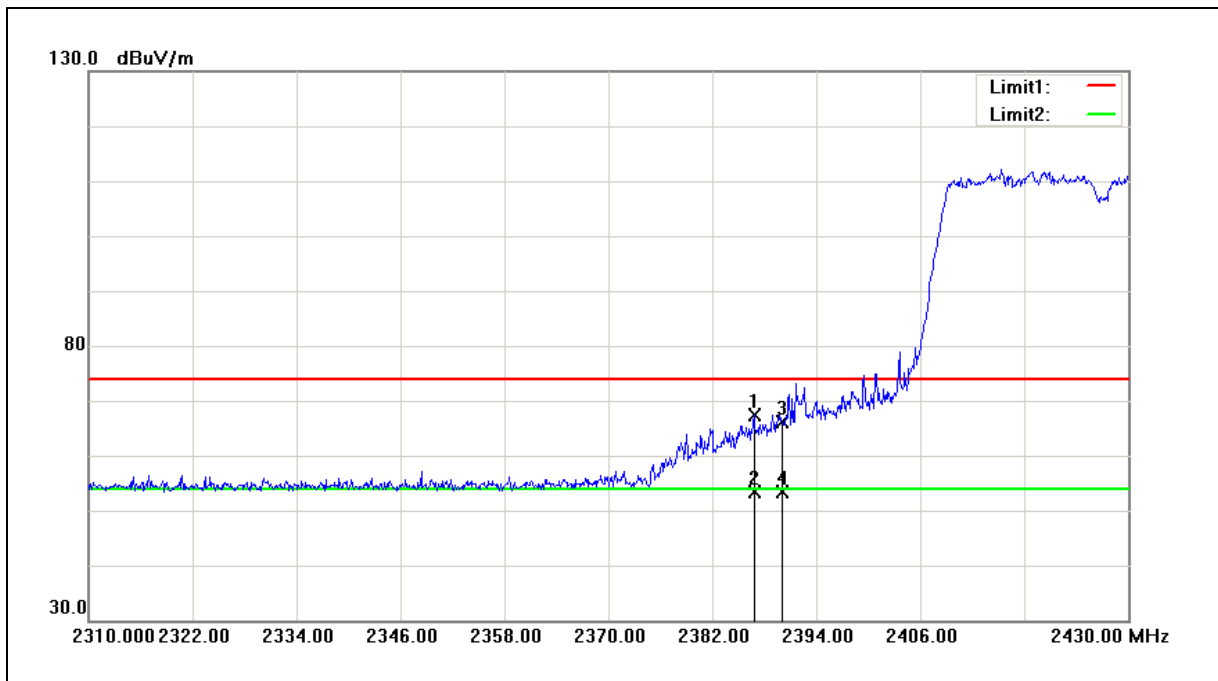
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.200	65.41	-0.26	65.15	74.00	-8.85	peak
2	2389.200	52.00	-0.26	51.74	54.00	-2.26	AVG
3	2390.000	65.45	-0.26	65.19	74.00	-8.81	peak
4	2390.000	51.52	-0.26	51.26	54.00	-2.74	AVG

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2427MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	05/27/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.800	67.72	-0.27	67.45	74.00	-6.55	peak
2	2386.800	53.55	-0.27	53.28	54.00	-0.72	AVG
3	2390.000	66.46	-0.26	66.20	74.00	-7.80	peak
4	2390.000	53.65	-0.26	53.39	54.00	-0.61	AVG

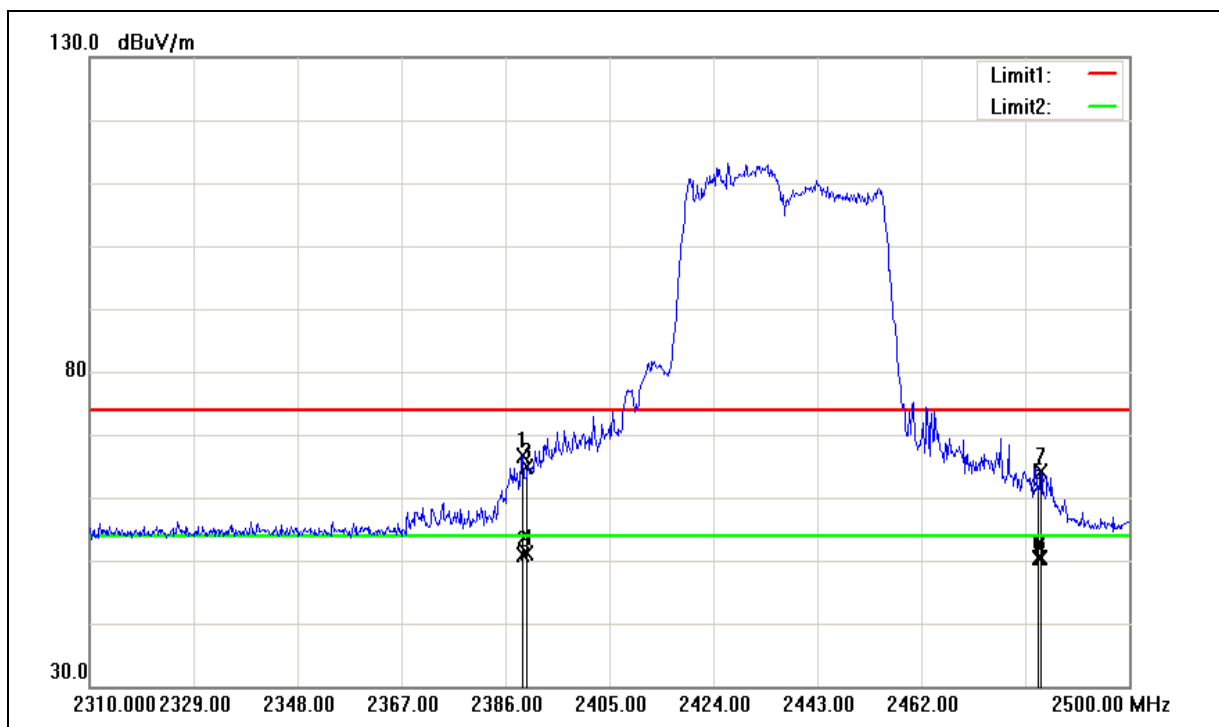
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2437MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	05/27/2017
Ant.Polar.:	Horizontal		





Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2437MHz	Temp.(°C)/Hum. (%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	05/27/2017
Ant.Polar.:	Horizontal		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.230	66.93	-0.26	66.67	74.00	-7.33	peak
2	2389.230	51.14	-0.26	50.88	54.00	-3.12	AVG
3	2390.000	65.10	-0.26	64.84	74.00	-9.16	peak
4	2390.000	51.38	-0.26	51.12	54.00	-2.88	AVG
5	2483.500	61.46	0.11	61.57	74.00	-12.43	peak
6	2483.500	50.18	0.11	50.29	54.00	-3.71	AVG
7	2483.850	64.03	0.11	64.14	74.00	-9.86	peak
8	2483.850	50.36	0.11	50.47	54.00	-3.53	AVG

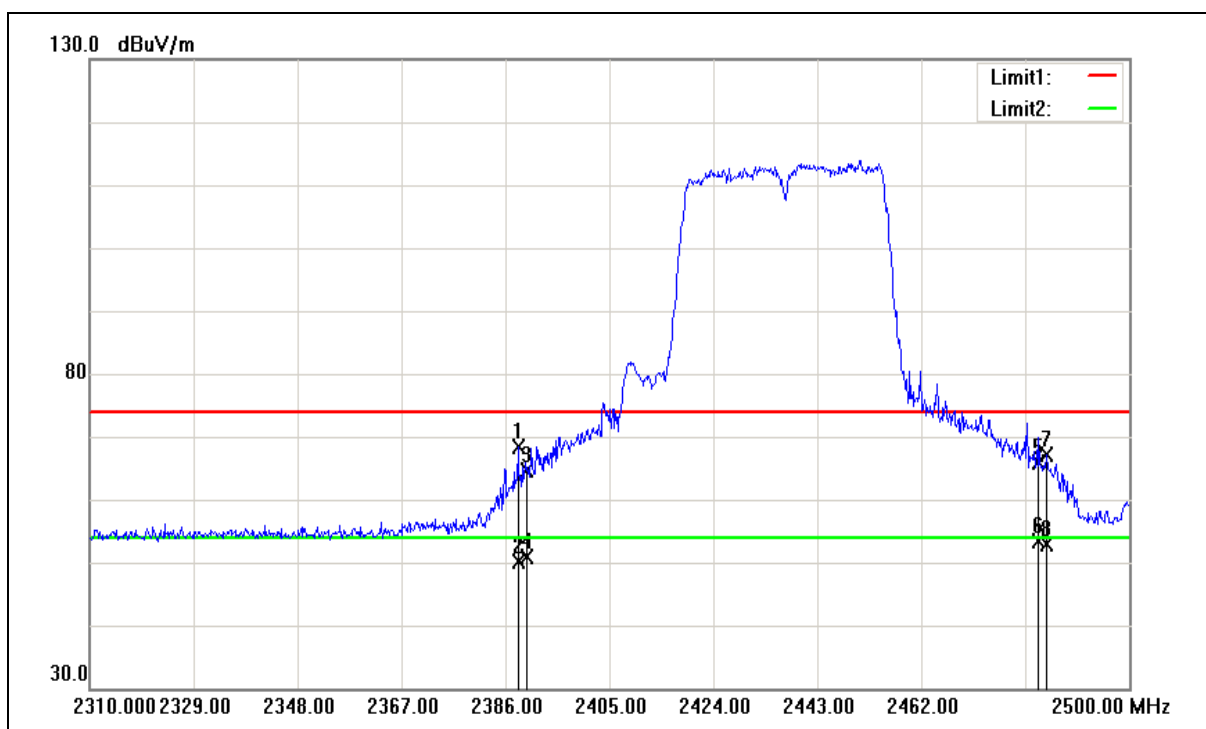
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2437MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	05/27/2017
Ant.Polar.:	Vertical		





Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2437MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	05/27/2017
Ant.Polar.:	Vertical		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.280	68.70	-0.26	68.44	74.00	-5.56	peak
2	2388.280	50.36	-0.26	50.10	54.00	-3.90	AVG
3	2390.000	64.90	-0.26	64.64	74.00	-9.36	peak
4	2390.000	51.23	-0.26	50.97	54.00	-3.03	AVG
5	2483.500	65.67	0.11	65.78	74.00	-8.22	peak
6	2483.500	53.28	0.11	53.39	54.00	-0.61	AVG
7	2484.990	66.92	0.12	67.04	74.00	-6.96	peak
8	2484.990	52.82	0.12	52.94	54.00	-1.06	AVG

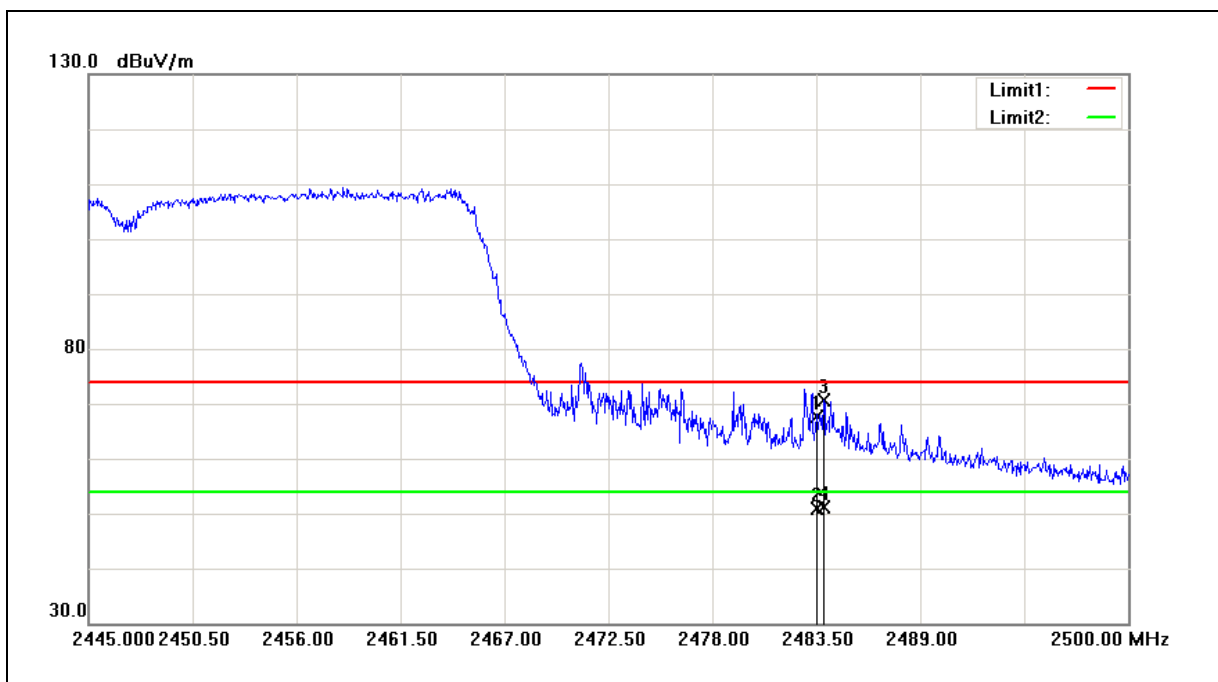
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2447MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	05/27/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	67.50	0.11	67.61	74.00	-6.39	peak
2	2483.500	50.72	0.11	50.83	54.00	-3.17	AVG
3	2483.885	70.61	0.11	70.72	74.00	-3.28	peak
4	2483.885	51.13	0.11	51.24	54.00	-2.76	AVG

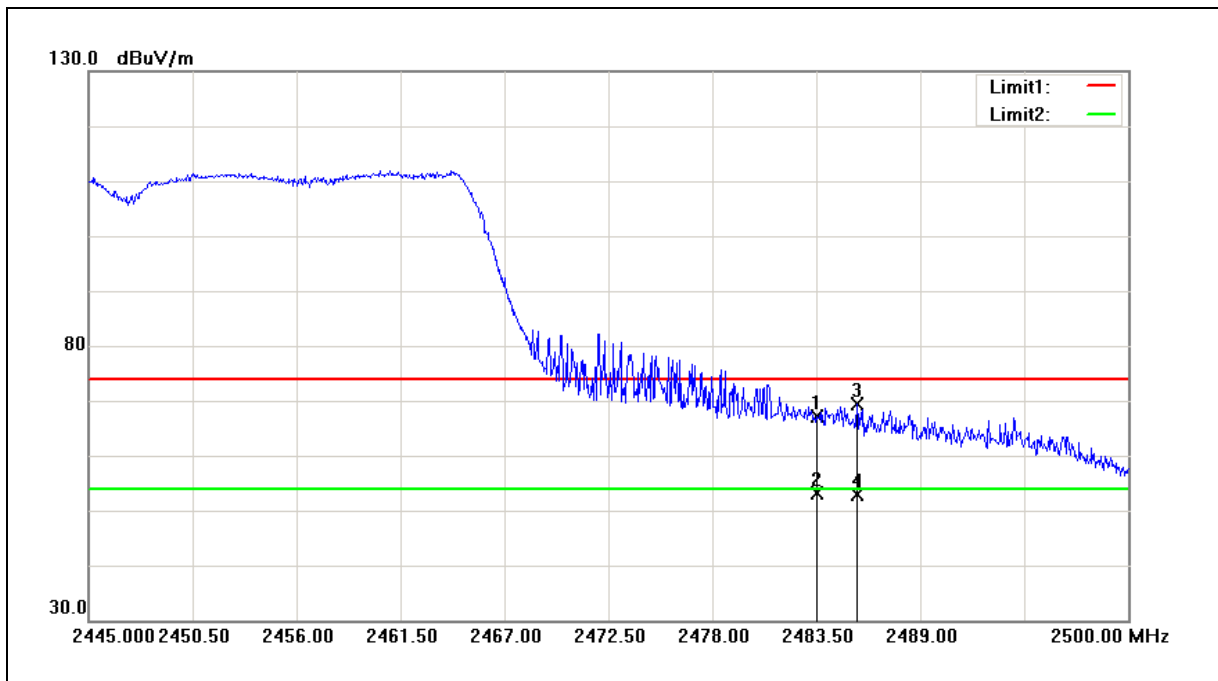
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2447MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	05/27/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	66.94	0.11	67.05	74.00	-6.95	peak
2	2483.500	52.99	0.11	53.10	54.00	-0.90	AVG
3	2485.645	69.34	0.12	69.46	74.00	-4.54	peak
4	2485.645	52.80	0.12	52.92	54.00	-1.08	AVG

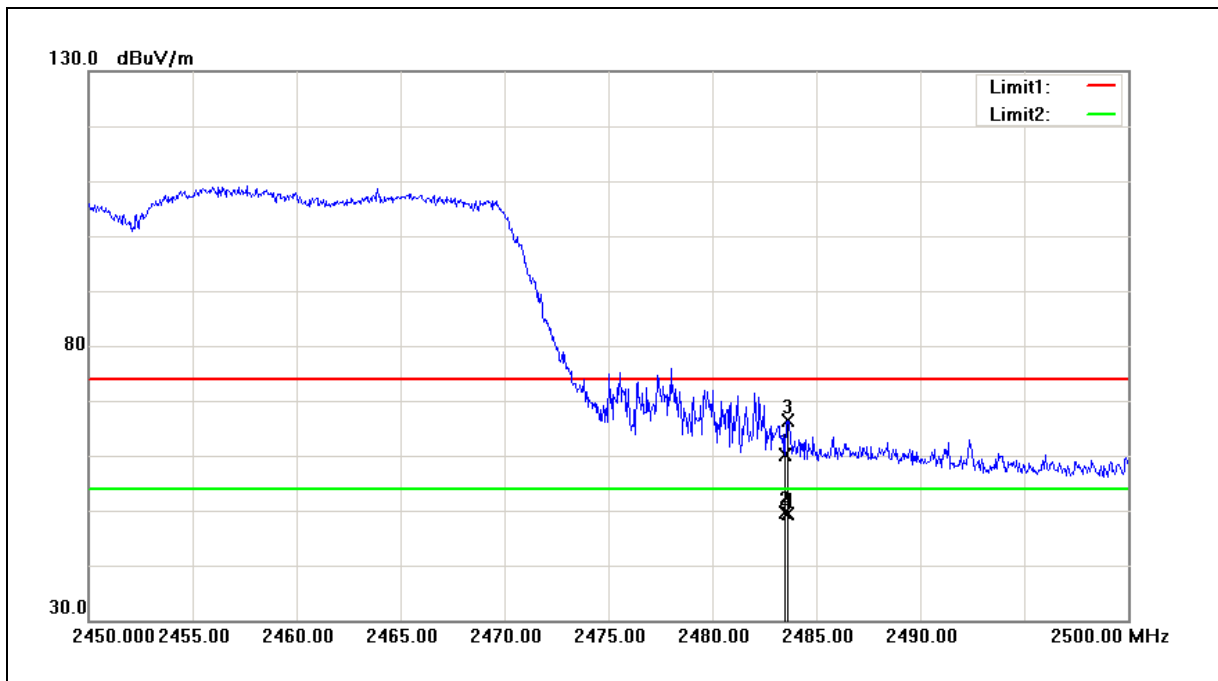
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2452MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	05/27/2017
Ant.Polar.:	Horizontal		



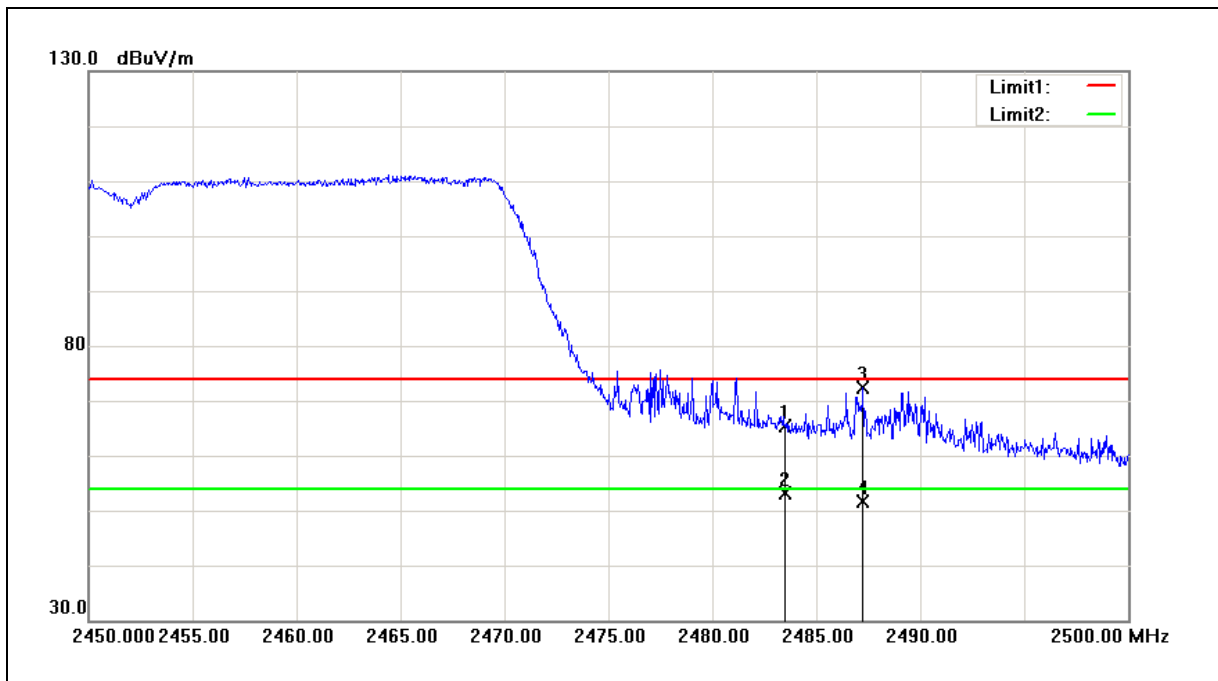
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	60.12	0.11	60.23	74.00	-13.77	peak
2	2483.500	49.52	0.11	49.63	54.00	-4.37	AVG
3	2483.650	66.25	0.11	66.36	74.00	-7.64	peak
4	2483.650	49.19	0.11	49.30	54.00	-4.70	AVG

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	2452MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	05/27/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	65.27	0.11	65.38	74.00	-8.62	peak
2	2483.500	53.00	0.11	53.11	54.00	-0.89	AVG
3	2487.250	72.22	0.12	72.34	74.00	-1.66	peak
4	2487.250	51.55	0.12	51.67	54.00	-2.33	AVG

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

6 Maximum Conducted Output Power Measurement

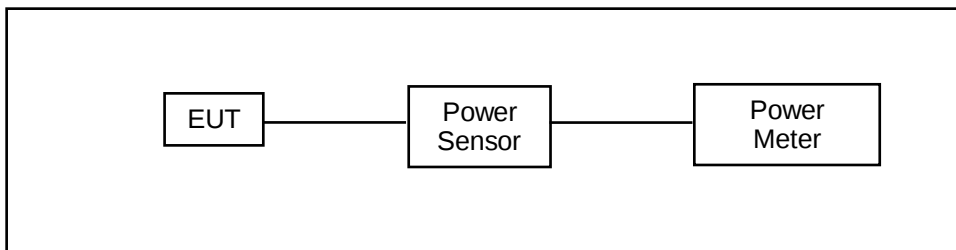
6.1. Limit

For systems using digital modulation in the 2400-2483.5MHz, the limit for maximum output power is 30dBm.

And According to 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

- * Beamforming on mode : Directional Gain = $10 \cdot \log [(10G_1/20 + 10G_2/20 + \dots + 10G_N/20)^2 / NANT] = 6.6 \text{ dBi} > 6 \text{ dBi}$
- * Beamforming on mode power limit shall be reduced = $30 - 0.6 = 29.4 \text{ dBm}$.

6.2. Test Setup





6.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
Power Sensor	Anritsu	MA2411B	1126022	08/29/2016	1 year
Power Meter	Anritsu	ML2495A	1135009	08/29/2016	1 year
Microwave Cable	EMCI	EMC104-SM-SM-1500	140303	02/22/2017	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

Note: N.C.R. = No Calibration Request.

6.4. Test Procedure

The tests below are run with the EUT's transmitter set at high power in TX mode. The EUT is needed to force selection of output power level and channel number. While testing, EUT was set to transmit continuously. Remove the Subjective device's antenna and connect the RF output port to power sensor.

6.5. Test Result

Test Item	Maximum Conducted Output Power				
ANT-0					
Test Mode	Frequency (MHz)	Data Rate	Average Output Power		
			Measurement Results		Limit
			dBm	W	dBm
Mode 2	2412.0	1M	24.19	0.262	< 30
	2417.0		23.51	0.224	< 30
	2422.0		24.24	0.265	< 30
	2437.0		24.02	0.252	< 30
	2452.0		22.93	0.196	< 30
	2457.0		24.15	0.260	< 30
	2462.0		23.72	0.236	< 30
Mode 3	2412.0	6M	18.13	0.065	< 30
	2417.0		21.31	0.135	< 30
	2422.0		23.05	0.202	< 30
	2437.0		24.08	0.256	< 30
	2452.0		22.82	0.191	< 30
	2457.0		21.79	0.151	< 30
	2462.0		17.94	0.062	< 30
Mode 4	2412.0	19.5M	18.11	0.065	< 30
	2417.0		21.71	0.148	< 30
	2422.0		22.82	0.191	< 30
	2437.0		24.11	0.258	< 30
	2452.0		22.52	0.179	< 30
	2457.0		21.67	0.147	< 30
	2462.0		17.87	0.061	< 30
Mode 5	2422.0	40.5M	14.94	0.031	< 30
	2427.0		14.84	0.030	< 30
	2437.0		19.21	0.083	< 30
	2457.0		14.02	0.025	< 30
	2452.0		14.57	0.029	< 30

Note:1. The relevant measured result has the offset with cable loss already.

2. Evaluated high and low data rate, the report record worst case low data rate measurement results.

Test Item	Maximum Conducted Output Power				
ANT-1					
Test Mode	Frequency (MHz)	Data Rate	Average Output Power		
			Measurement Results		Limit
			dBm	W	dBm
Mode 2	2412.0	1M	25.32	0.340	< 30
	2417.0		24.82	0.303	< 30
	2422.0		25.36	0.344	< 30
	2437.0		25.40	0.347	< 30
	2452.0		24.72	0.296	< 30
	2457.0		25.52	0.356	< 30
	2462.0		25.10	0.324	< 30
Mode 3	2412.0	6M	18.73	0.075	< 30
	2417.0		22.57	0.181	< 30
	2422.0		24.21	0.264	< 30
	2437.0		25.61	0.364	< 30
	2452.0		24.42	0.277	< 30
	2457.0		22.99	0.199	< 30
	2462.0		18.81	0.076	< 30
Mode 4	2412.0	19.5M	19.25	0.084	< 30
	2417.0		22.71	0.187	< 30
	2422.0		24.22	0.264	< 30
	2437.0		25.68	0.370	< 30
	2452.0		23.89	0.245	< 30
	2457.0		22.86	0.193	< 30
	2462.0		18.96	0.079	< 30
Mode 5	2422.0	40.5M	16.03	0.040	< 30
	2427.0		16.13	0.041	< 30
	2437.0		19.97	0.099	< 30
	2457.0		15.21	0.033	< 30
	2452.0		15.41	0.035	< 30

Note:1. The relevant measured result has the offset with cable loss already.

2. Evaluated high and low data rate, the report record worst case low data rate measurement results.

Test Item	Maximum Conducted Output Power				
ANT-2					
Test Mode	Frequency (MHz)	Data Rate	Average Output Power		
			Measurement Results		Limit
			dBm	W	dBm
Mode 2	2412.0	1M	24.64	0.291	< 30
	2417.0		23.82	0.241	< 30
	2422.0		24.69	0.294	< 30
	2437.0		24.54	0.284	< 30
	2452.0		23.62	0.230	< 30
	2457.0		24.62	0.290	< 30
	2462.0		24.17	0.261	< 30
Mode 3	2412.0	6M	18.29	0.067	< 30
	2417.0		21.75	0.150	< 30
	2422.0		23.41	0.219	< 30
	2437.0		24.83	0.304	< 30
	2452.0		23.32	0.215	< 30
	2457.0		22.05	0.160	< 30
	2462.0		18.24	0.067	< 30
Mode 4	2412.0	19.5M	18.68	0.074	< 30
	2417.0		21.97	0.157	< 30
	2422.0		23.44	0.221	< 30
	2437.0		24.85	0.305	< 30
	2452.0		22.88	0.194	< 30
	2457.0		21.97	0.157	< 30
	2462.0		18.14	0.065	< 30
Mode 5	2422.0	40.5M	15.51	0.036	< 30
	2427.0		15.53	0.036	< 30
	2437.0		19.71	0.094	< 30
	2457.0		14.84	0.030	< 30
	2452.0		15.06	0.032	< 30

Note:1. The relevant measured result has the offset with cable loss already.

2. Evaluated high and low data rate, the report record worst case low data rate measurement results.

Test Item	Maximum Conducted Output Power				
ANT-0+1+2					
Test Mode	Frequency (MHz)	Data Rate	Average Output Power		
			Measurement Results		Limit
			dBm	W	dBm
Mode 2	2412.0	1M	29.51	0.894	< 30
	2417.0		28.86	0.769	< 30
	2422.0		29.56	0.903	< 30
	2437.0		29.46	0.884	< 30
	2452.0		28.59	0.723	< 30
	2457.0		29.57	0.906	< 30
	2462.0		29.14	0.820	< 30
Mode 3	2412.0	6M	23.16	0.207	< 30
	2417.0		26.68	0.466	< 30
	2422.0		28.36	0.685	< 30
	2437.0		29.66	0.924	< 30
	2452.0		28.34	0.683	< 30
	2457.0		27.08	0.510	< 30
	2462.0		23.12	0.205	< 30
Mode 4	2412.0	19.5M	23.48	0.223	< 30
	2417.0		26.92	0.492	< 30
	2422.0		28.30	0.676	< 30
	2437.0		29.70	0.933	< 30
	2452.0		27.91	0.618	< 30
	2457.0		26.97	0.497	< 30
	2462.0		23.12	0.205	< 30
Mode 5	2422.0	40.5M	20.29	0.107	< 30
	2427.0		20.30	0.107	< 30
	2437.0		24.41	0.276	< 30
	2457.0		19.49	0.089	< 30
	2452.0		19.80	0.095	< 30

Note:1. The relevant measured result has the offset with cable loss already.

2. Evaluated high and low data rate, the report record worst case low data rate measurement results.

Beamforming on

Test Item	Maximum Conducted Output Power				
ANT-0					
Test Mode	Frequency (MHz)	Data Rate	Average Output Power		
			Measurement Results		Limit
			dBm	W	dBm
Mode 4	2412.0	19.5M	13.83	0.024	< 29.40
	2417.0		21.92	0.156	< 29.40
	2422.0		23.41	0.219	< 29.40
	2437.0		23.78	0.239	< 29.40
	2452.0		23.24	0.211	< 29.40
	2457.0		21.88	0.154	< 29.40
	2462.0		15.91	0.039	< 29.40
Mode 5	2422.0	40.5M	14.11	0.026	< 29.40
	2427.0		15.27	0.034	< 29.40
	2437.0		17.06	0.051	< 29.40
	2457.0		15.01	0.032	< 29.40
	2452.0		14.28	0.027	< 29.40

Note:1. The relevant measured result has the offset with cable loss already.

2. Evaluated high and low data rate, the report record worst case low data rate measurement results.

Test Item	Maximum Conducted Output Power				
ANT-1					
Test Mode	Frequency (MHz)	Data Rate	Average Output Power		
			Measurement Results		Limit
			dBm	W	dBm
Mode 4	2412.0	19.5M	14.51	0.028	< 29.40
	2417.0		22.78	0.190	< 29.40
	2422.0		24.45	0.279	< 29.40
	2437.0		25.15	0.327	< 29.40
	2452.0		24.78	0.301	< 29.40
	2457.0		22.98	0.199	< 29.40
	2462.0		16.97	0.050	< 29.40
Mode 5	2422.0	40.5M	15.09	0.032	< 29.40
	2427.0		16.39	0.044	< 29.40
	2437.0		18.23	0.067	< 29.40
	2457.0		16.28	0.042	< 29.40
	2452.0		15.61	0.036	< 29.40

Note:1. The relevant measured result has the offset with cable loss already.

2. Evaluated high and low data rate, the report record worst case low data rate measurement results.

Test Item	Maximum Conducted Output Power				
ANT-2					
Test Mode	Frequency (MHz)	Data Rate	Average Output Power		
			Measurement Results		Limit
			dBm	W	dBm
Mode 4	2412.0	19.5M	14.11	0.026	< 29.40
	2417.0		22.02	0.159	< 29.40
	2422.0		23.57	0.228	< 29.40
	2437.0		24.36	0.273	< 29.40
	2452.0		23.64	0.231	< 29.40
	2457.0		22.04	0.160	< 29.40
	2462.0		16.24	0.042	< 29.40
Mode 5	2422.0	40.5M	14.43	0.028	< 29.40
	2427.0		15.77	0.038	< 29.40
	2437.0		17.68	0.059	< 29.40
	2457.0		15.68	0.037	< 29.40
	2452.0		14.74	0.030	< 29.40

Note:1. The relevant measured result has the offset with cable loss already.

2. Evaluated high and low data rate, the report record worst case low data rate measurement results.

Test Item		Maximum Conducted Output Power			
ANT-0+1+2					
Test Mode	Frequency (MHz)	Data Rate	Average Output Power		
			Measurement Results		Limit
			dBm	W	dBm
Mode 4	2412.0	19.5M	18.93	0.078	< 29.40
	2417.0		27.03	0.504	< 29.40
	2422.0		28.61	0.725	< 29.40
	2437.0		29.24	0.839	< 29.40
	2452.0		28.71	0.743	< 29.40
	2457.0		27.10	0.513	< 29.40
	2462.0		21.17	0.131	< 29.40
Mode 5	2422.0	40.5M	19.33	0.086	< 29.40
	2427.0		20.61	0.115	< 29.40
	2437.0		22.45	0.176	< 29.40
	2457.0		20.46	0.111	< 29.40
	2452.0		19.68	0.093	< 29.40

Note:1. The relevant measured result has the offset with cable loss already.

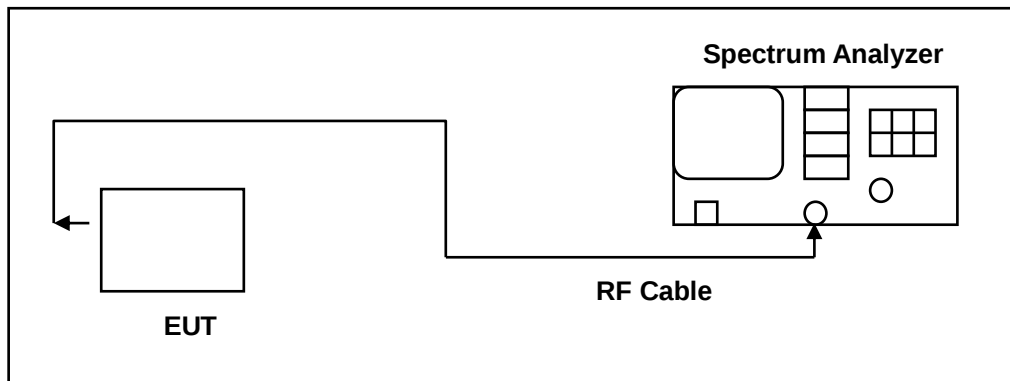
2. Evaluated high and low data rate, the report record worst case low data rate measurement results.

7 6dB RF Bandwidth Measurement

7.1. Limit

6dB RF Bandwidth: Systems using digital modulation techniques may operate in the 2400–2483.5 MHz bands. The minimum 6 dB band-width shall be at least 500 kHz.

7.2. Test Setup



7.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/19/2016	1 year
Microwave Cable	EMCI	EMC104-SM-SM-1500	140303	02/22/2017	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

Note: N.C.R. = No Calibration Request.

7.4. Test Procedure

The EUT tested to DTS test procedure of KDB558074D01 for compliance to FCC 47CFR 15.247 requirements.

6dB RF Bandwidth: The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RBW was set to 100 kHz. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A peak output reading was taken, a DISPLAY line was drawn 6 dB lower than peak level. The 6 dB bandwidth was determined from where the channel output spectrum intersected the display line.

The test was performed at 3 channels (Channel low, middle, high)

7.5. Test Result

Test Item	6dB RF Bandwidth				
Test Mode	Frequency (MHz)	Measurement (kHz)			Limit (kHz)
		ANT-0	ANT-1	ANT-2	
Mode 2	2412	8112	8064	8088	> 500
	2437	8146	9062	8608	> 500
	2462	8154	8570	8127	> 500
Mode 3	2412	16403	16434	16490	> 500
	2437	16446	16469	16495	> 500
	2462	16421	16139	16408	> 500
Mode 4	2412	17603	17605	17635	> 500
	2437	17575	17643	17611	> 500
	2462	17590	17604	17633	> 500
Mode 5	2422	36379	35893	35997	> 500
	2437	35921	36402	36386	> 500
	2452	36254	35830	35821	> 500

Beamforming on

Test Mode	Frequency (MHz)	Measurement (kHz)			Limit (kHz)
		ANT-0	ANT-1	ANT-2	
Mode 4	2412	17781	17633	16586	> 500
	2437	17776	17620	17721	> 500
	2462	16940	17441	10144	> 500
Mode 5	2422	33375	32303	35976	> 500
	2437	36363	36357	32623	> 500
	2452	35038	32619	35695	> 500



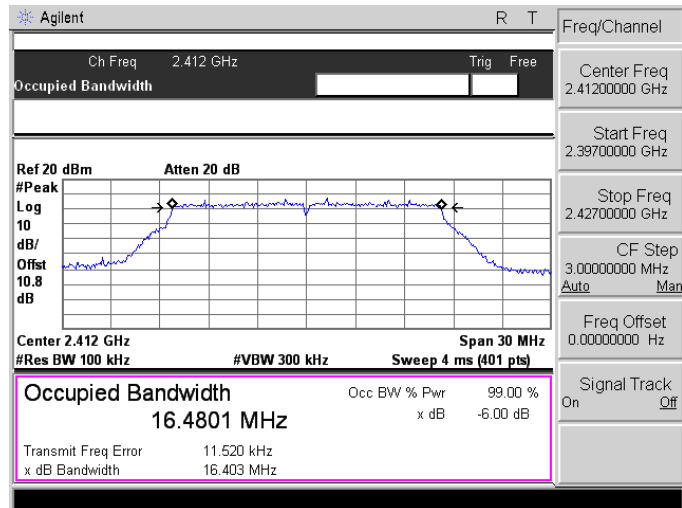
7.6. Test Graphs

Mode 2: IEEE 802.11b Continuous TX mode_ANT-0	
2412 MHz	Agilent R T Ch Freq 2.412 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB #Peak Log 10 dB/Offst 10.8 dB Center 2.412 GHz Span 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts) Occupied Bandwidth 11.6422 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 44.713 kHz x dB Bandwidth 8.112 MHz Freq/Channel Center Freq 2.41200000 GHz Start Freq 2.39700000 GHz Stop Freq 2.42700000 GHz CF Step 3.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
2437 MHz	Agilent R T Ch Freq 2.437 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB #Peak Log 10 dB/Offst 10.8 dB Center 2.437 GHz Span 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts) Occupied Bandwidth 11.6943 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 79.615 kHz x dB Bandwidth 8.146 MHz Freq/Channel Center Freq 2.43700000 GHz Start Freq 2.42200000 GHz Stop Freq 2.45200000 GHz CF Step 3.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
2462 MHz	Agilent R T Ch Freq 2.462 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 20 dB #Peak Log 10 dB/Offst 10.8 dB Center 2.462 GHz Span 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts) Occupied Bandwidth 11.6234 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -130.615 kHz x dB Bandwidth 8.154 MHz Freq/Channel Center Freq 2.46200000 GHz Start Freq 2.44700000 GHz Stop Freq 2.47700000 GHz CF Step 3.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off

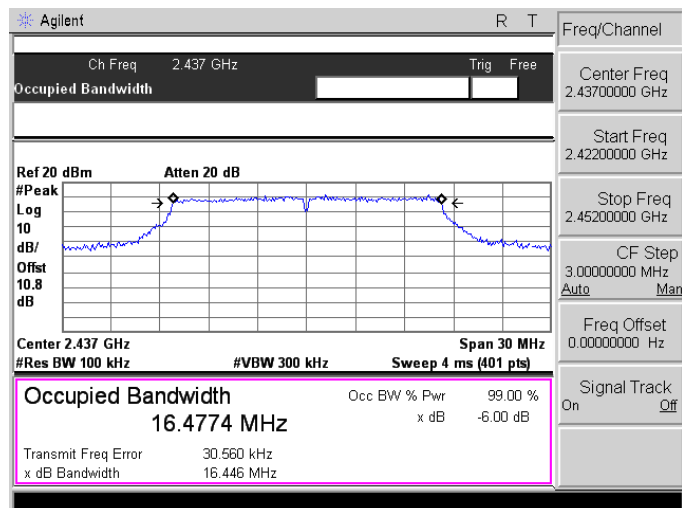


Mode 3: IEEE 802.11g Continuous TX mode_ANT-0

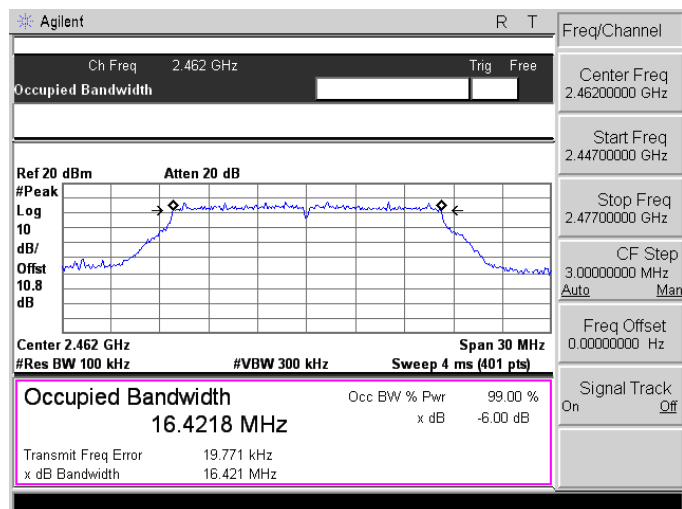
2412 MHz



2437 MHz



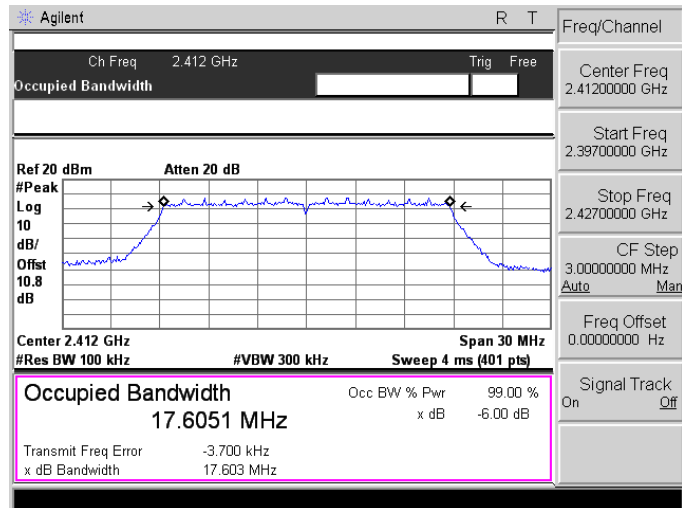
2462 MHz



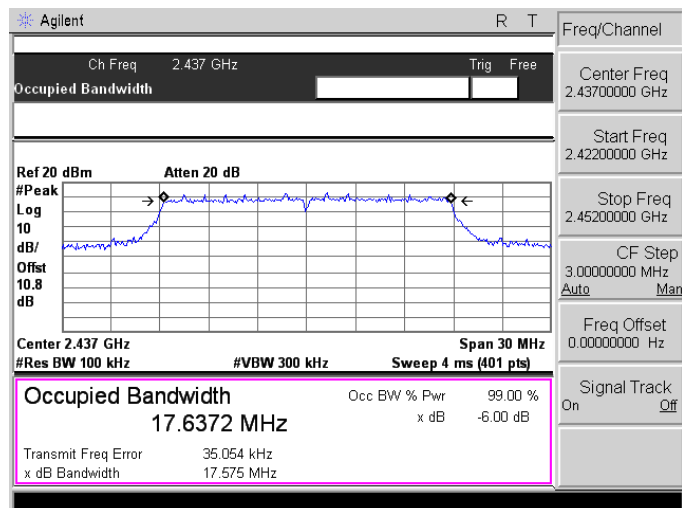


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-0

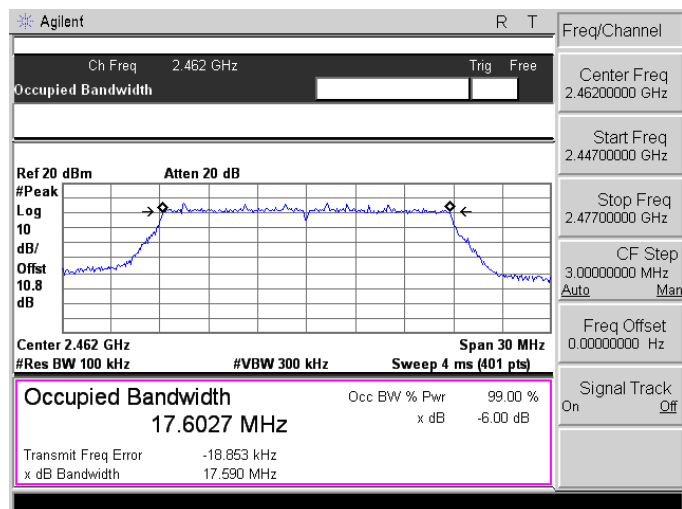
2412 MHz



2437 MHz



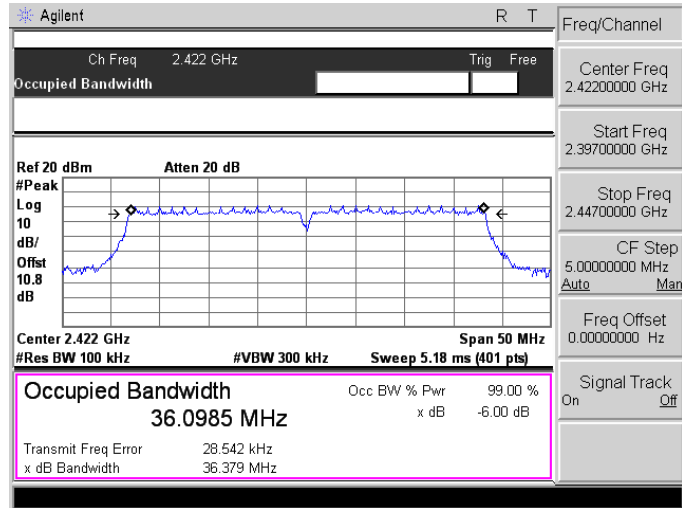
2462 MHz



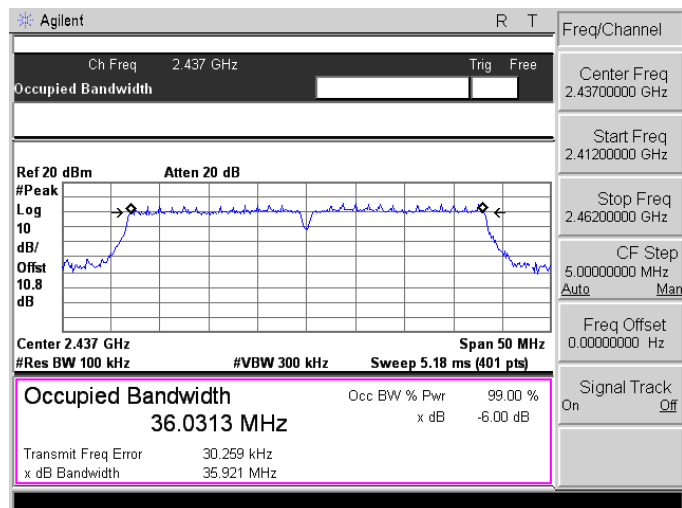


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-0

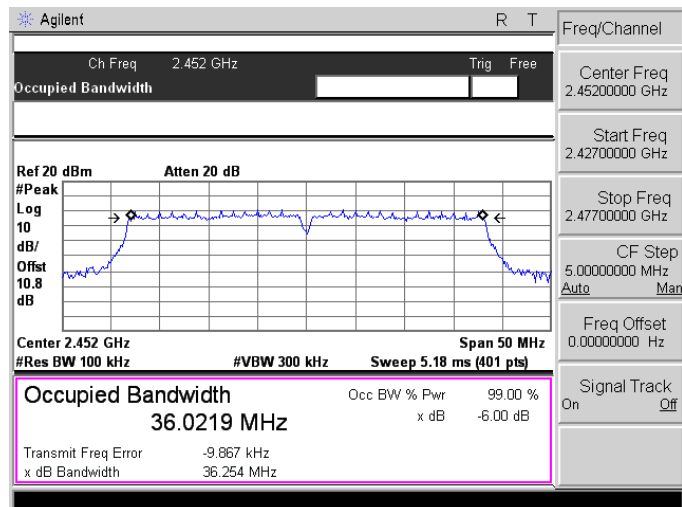
2422 MHz



2437 MHz



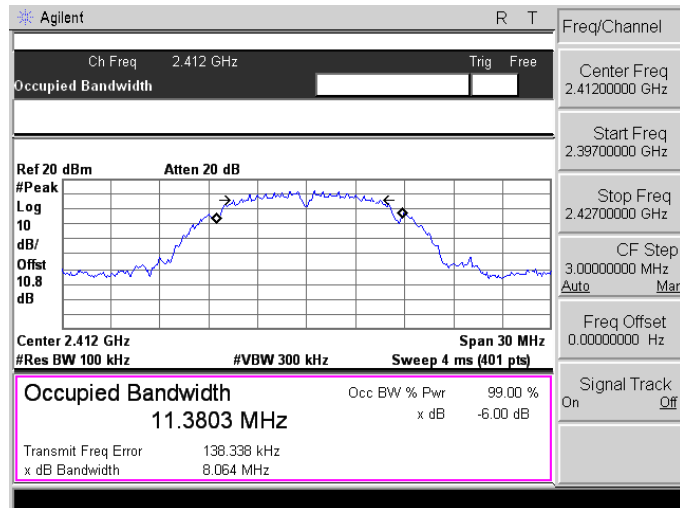
2452 MHz



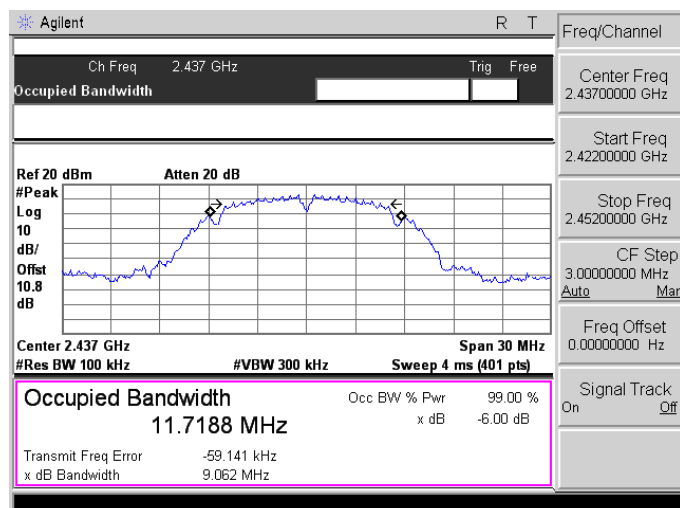


Mode 2: IEEE 802.11b Continuous TX mode_ANT-1

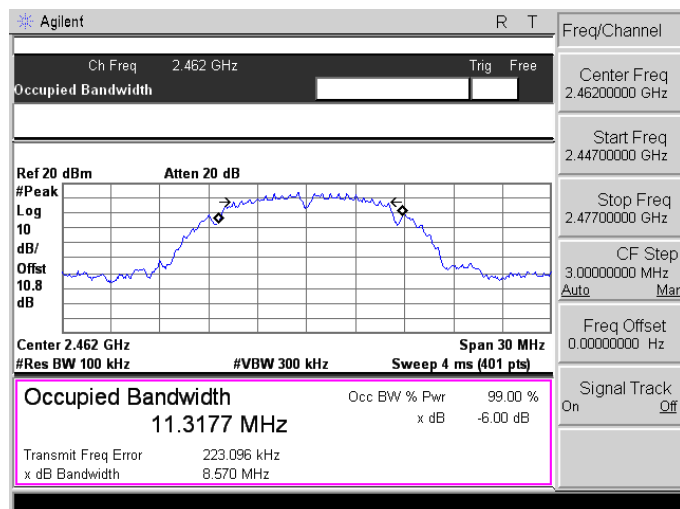
2412 MHz



2437 MHz



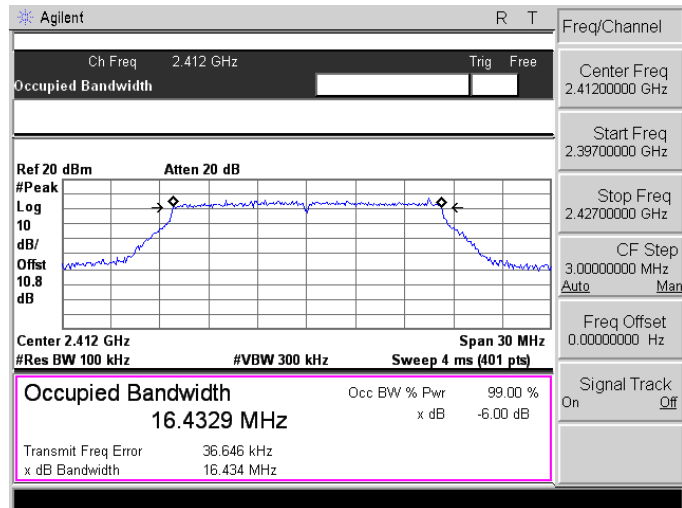
2462 MHz



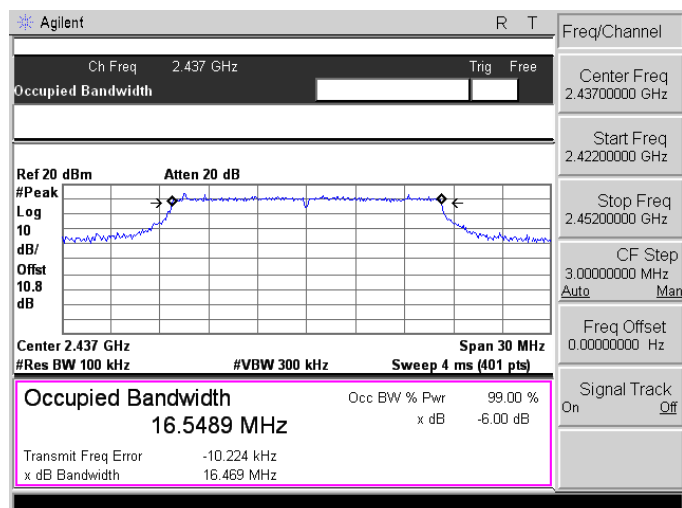


Mode 3: IEEE 802.11g Continuous TX mode_ANT-1

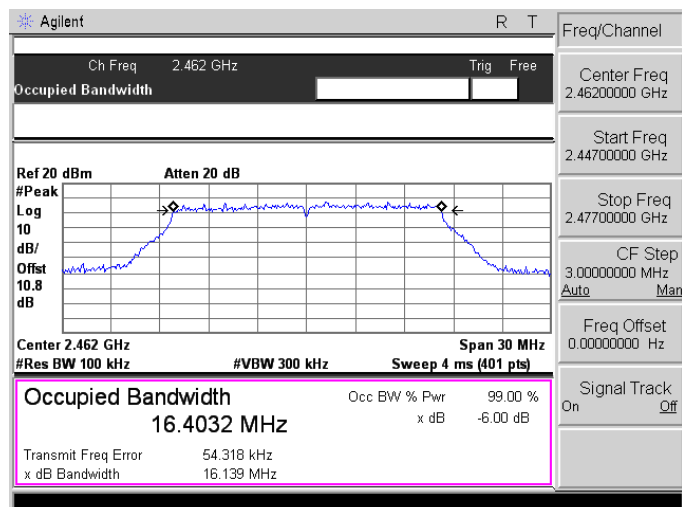
2412 MHz



2437 MHz



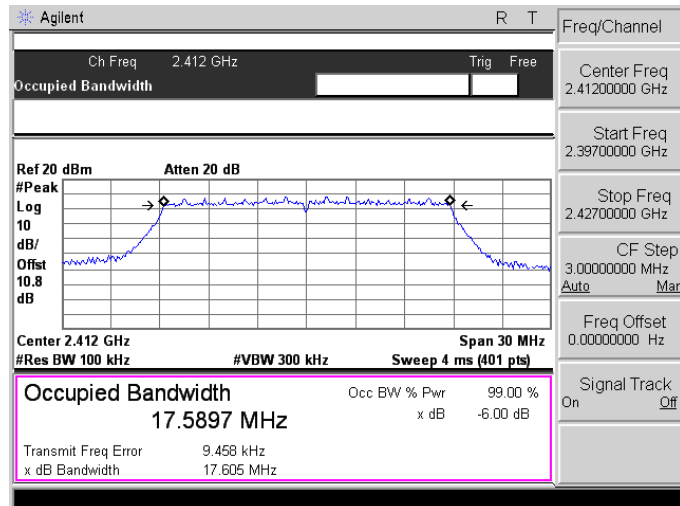
2462 MHz



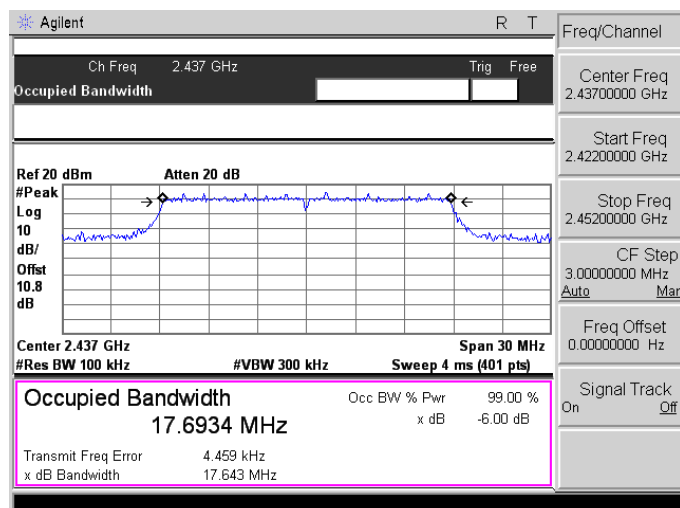


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-1

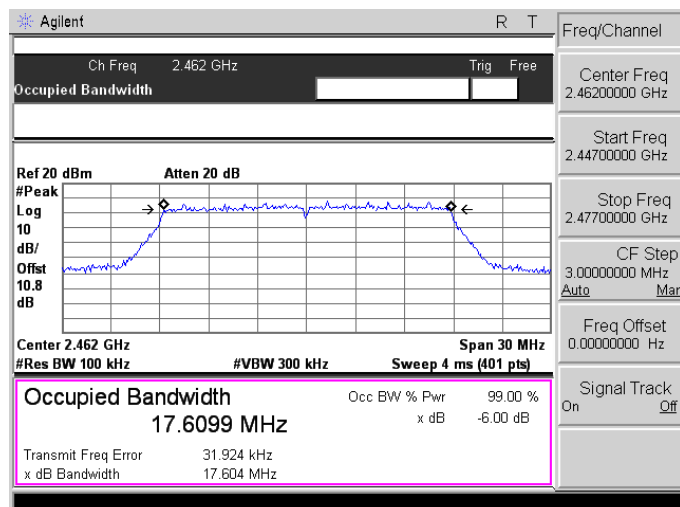
2412 MHz



2437 MHz



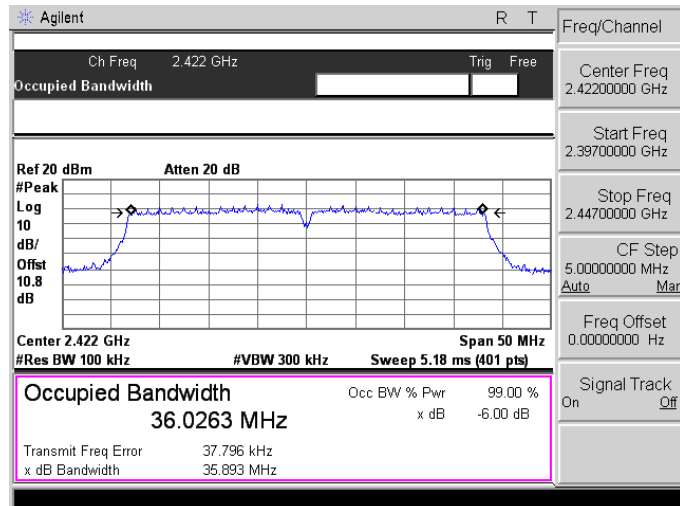
2462 MHz



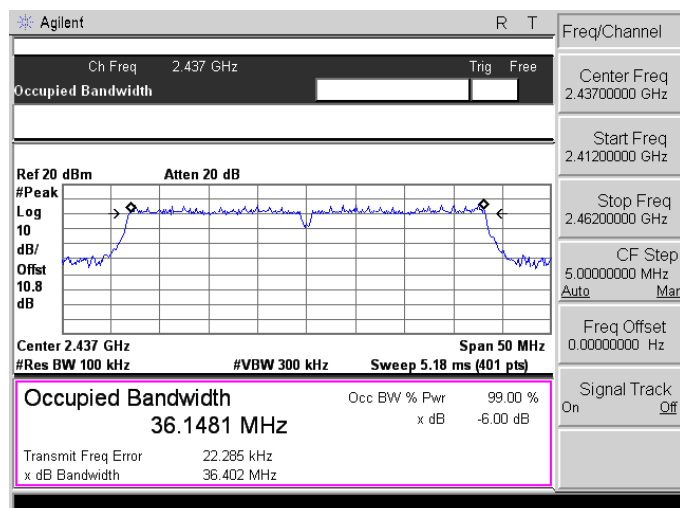


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-1

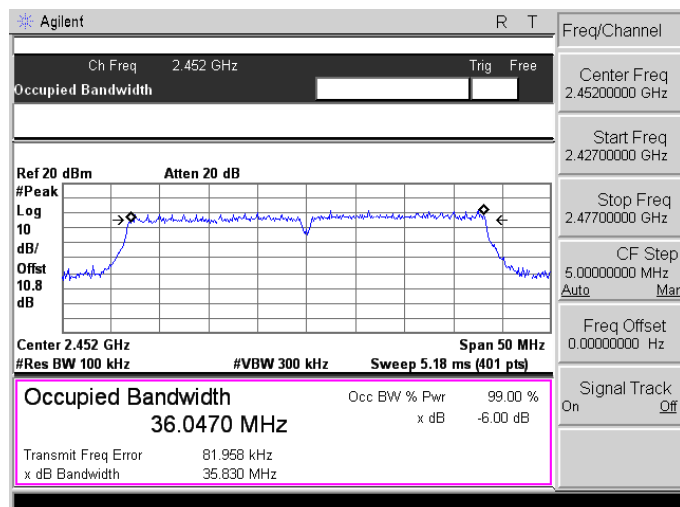
2422 MHz



2437 MHz



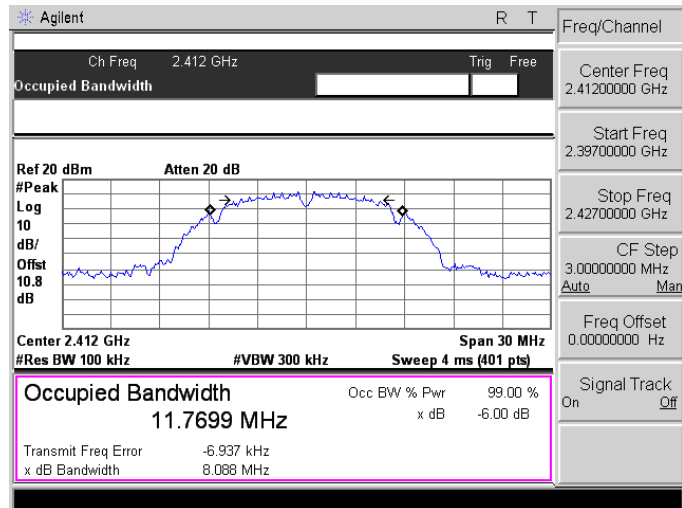
2452 MHz



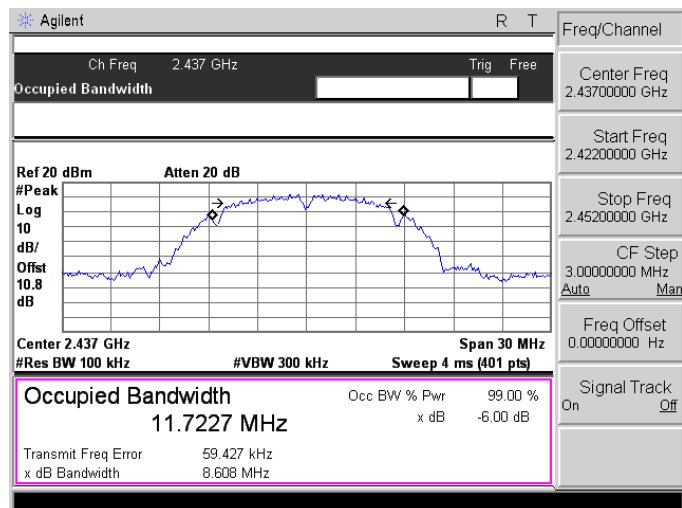


Mode 2: IEEE 802.11b Continuous TX mode_ANT-2

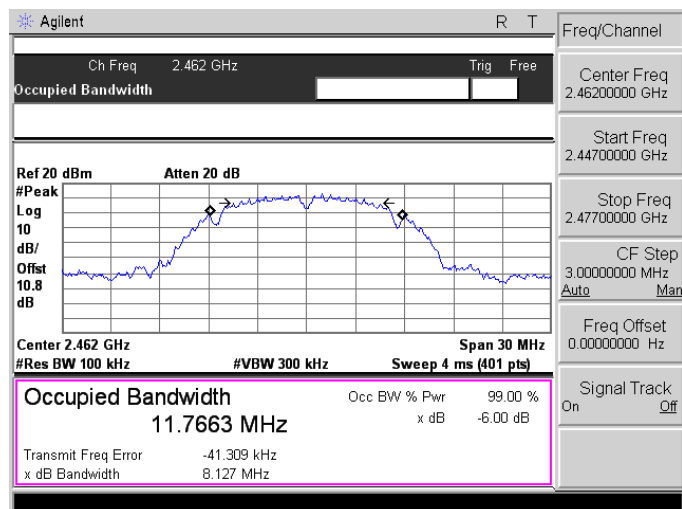
2412 MHz



2437 MHz



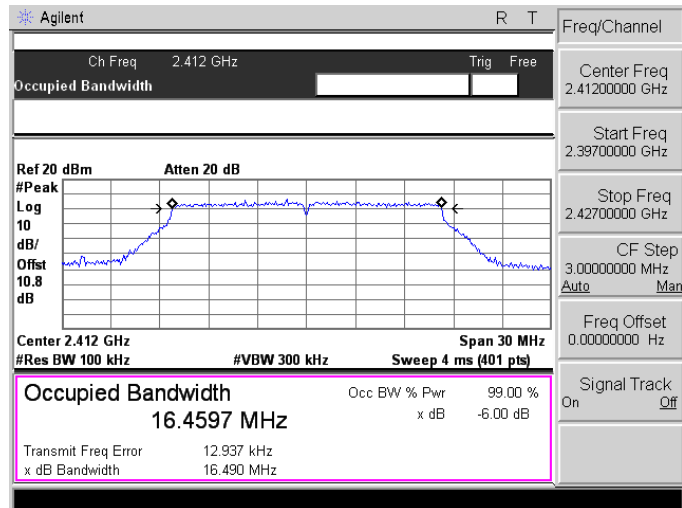
2462 MHz



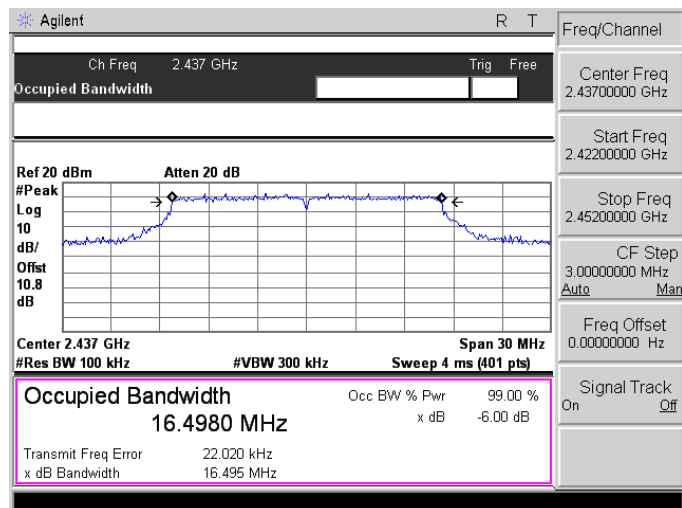


Mode 3: IEEE 802.11g Continuous TX mode_ANT-2

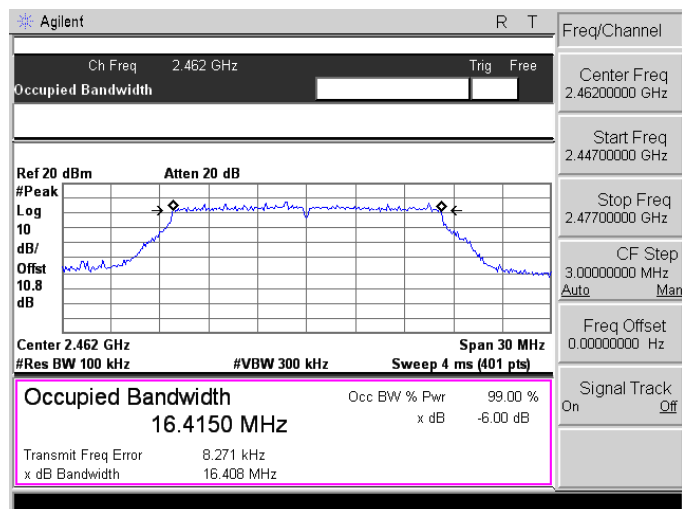
2412 MHz



2437 MHz



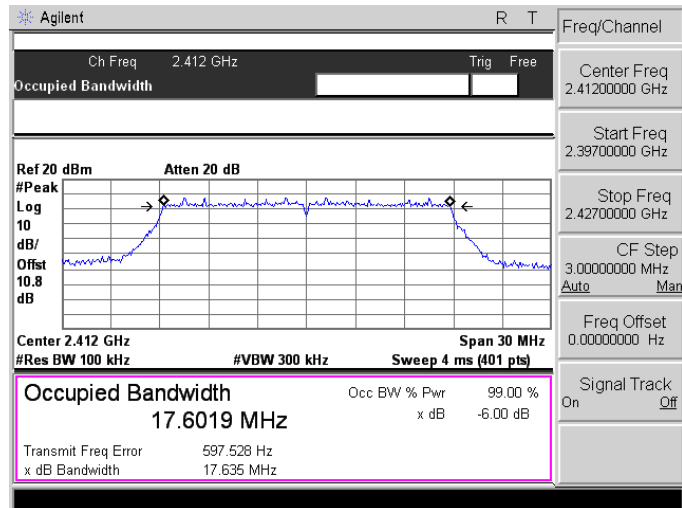
2462 MHz



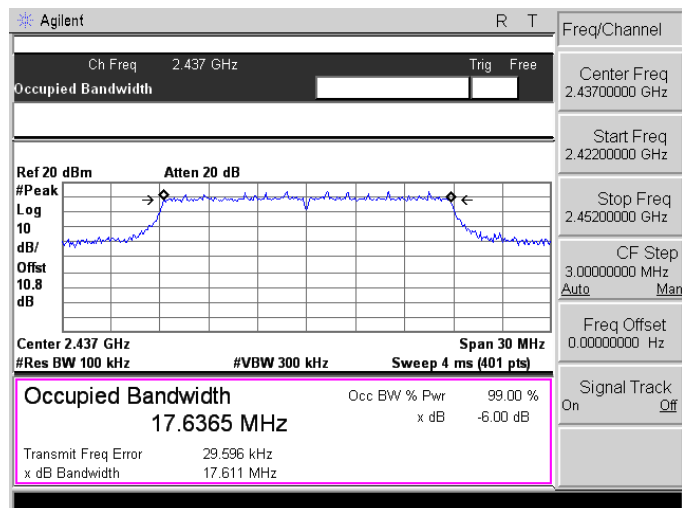


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-2

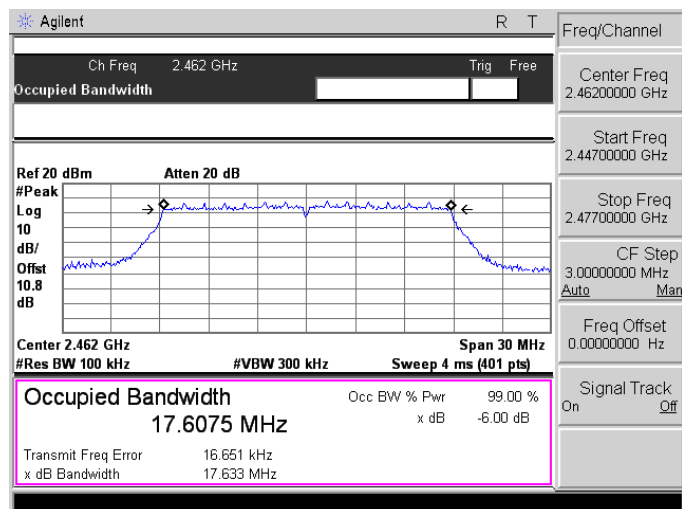
2412 MHz



2437 MHz



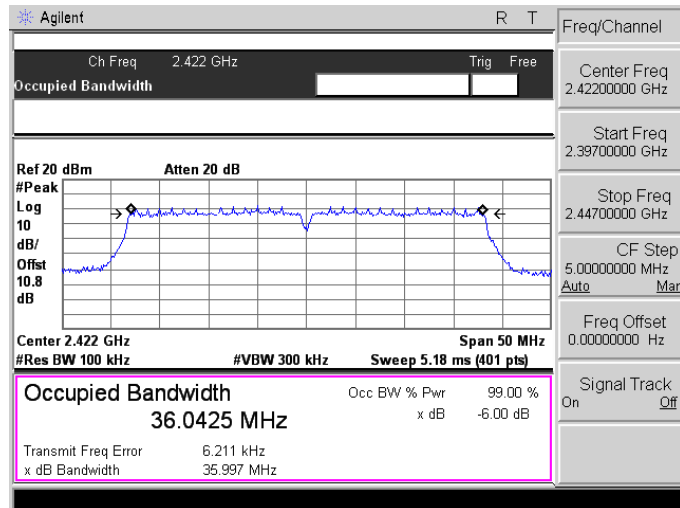
2462 MHz



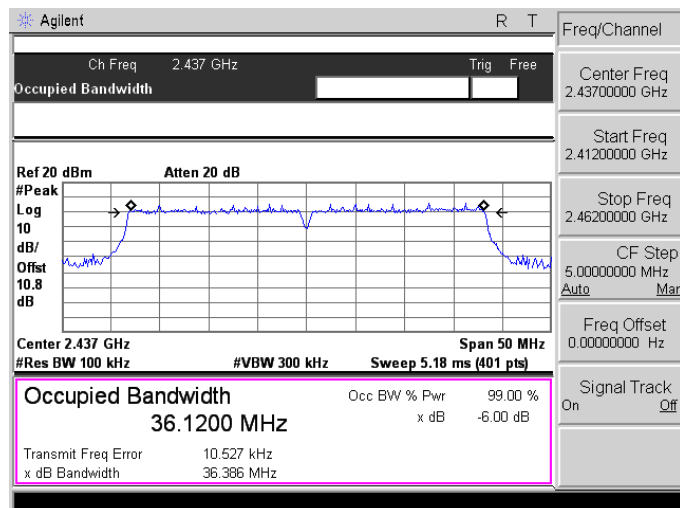


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-2

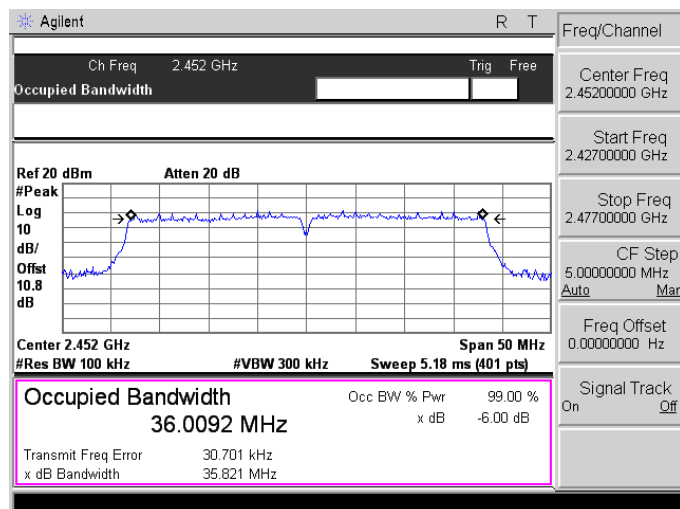
2422 MHz



2437 MHz



2452 MHz

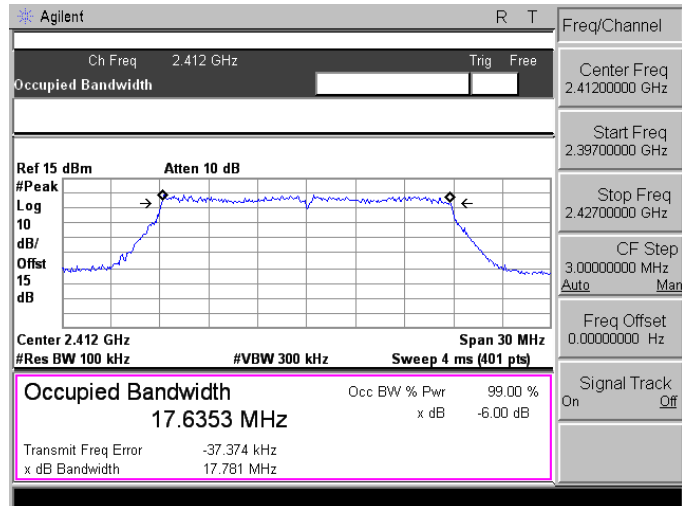




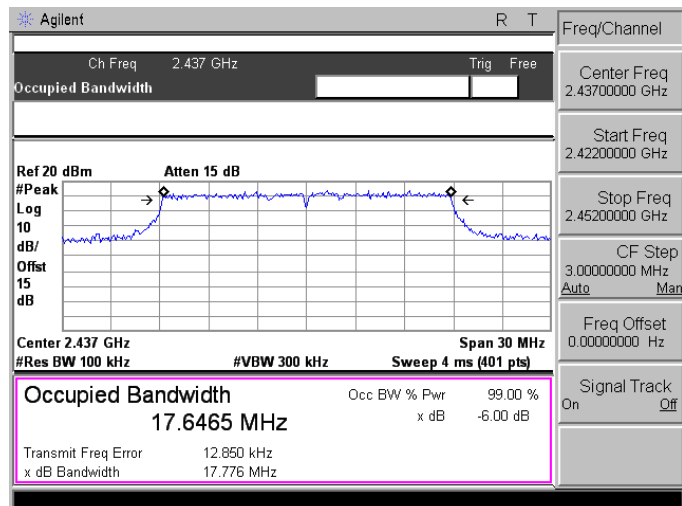
Beamforming on

Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-0

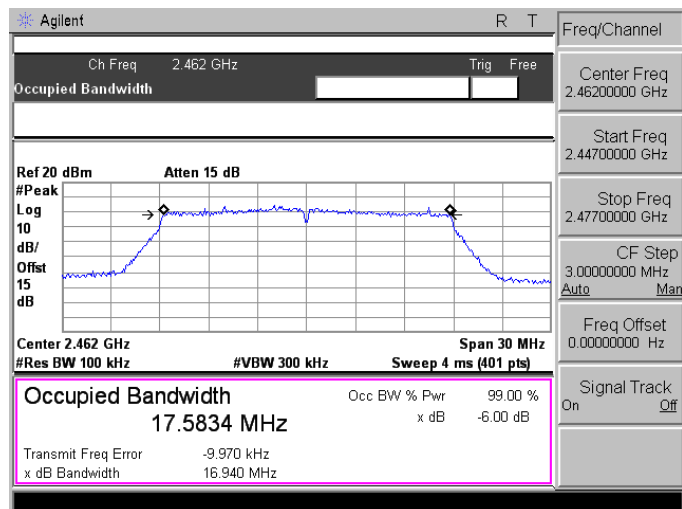
2412 MHz



2437 MHz



2462 MHz

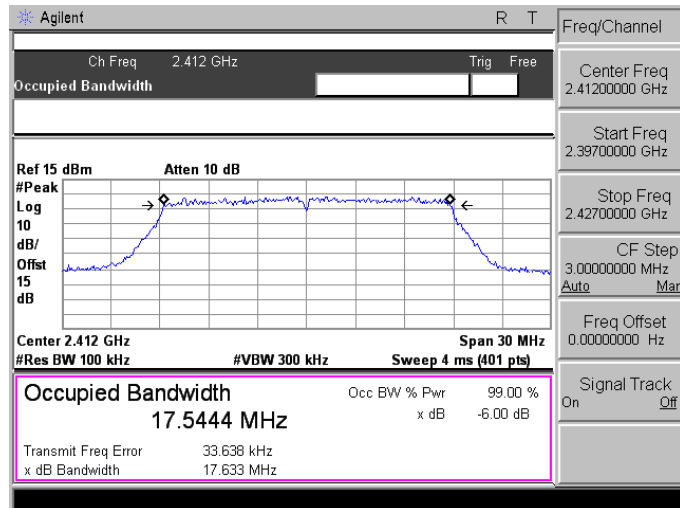


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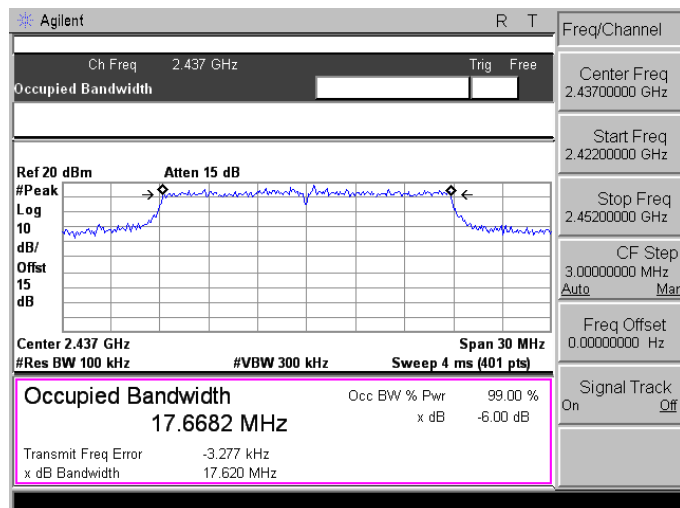


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-1

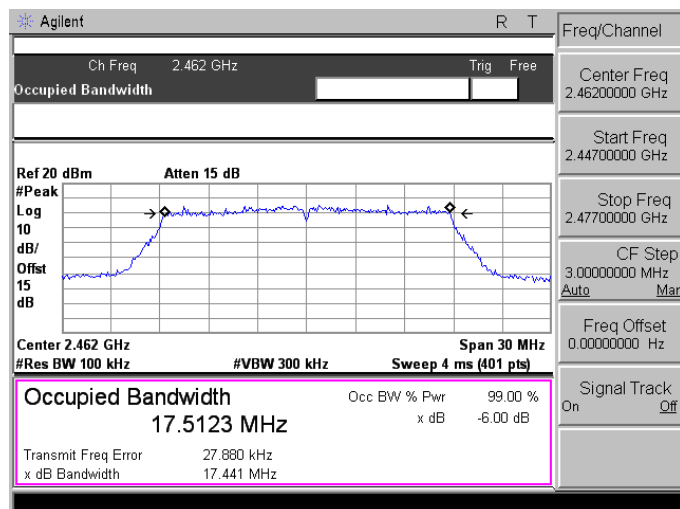
2422 MHz



2437 MHz



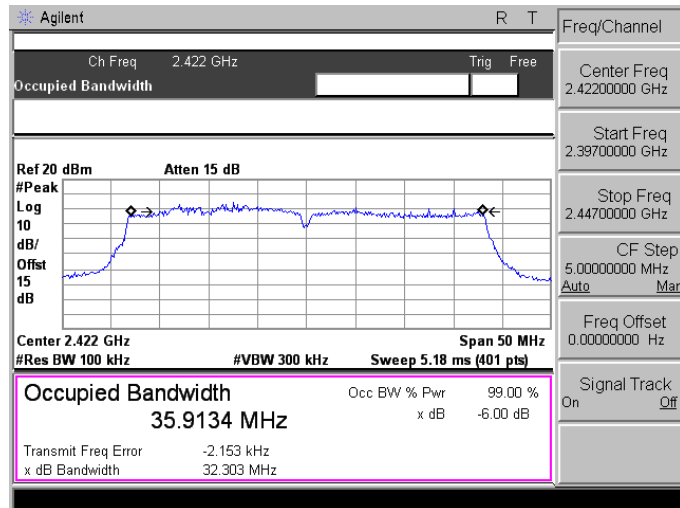
2452 MHz



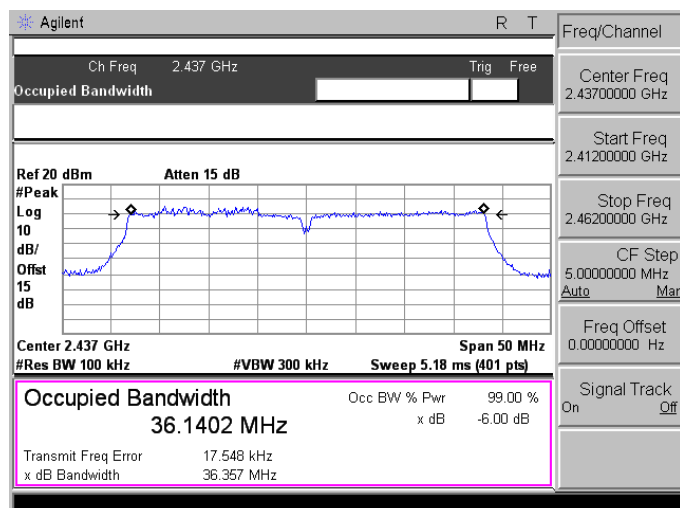


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-1

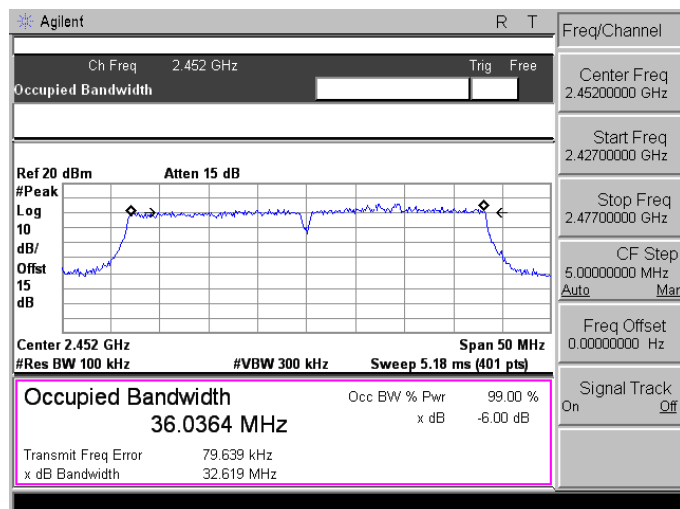
2412 MHz



2437 MHz



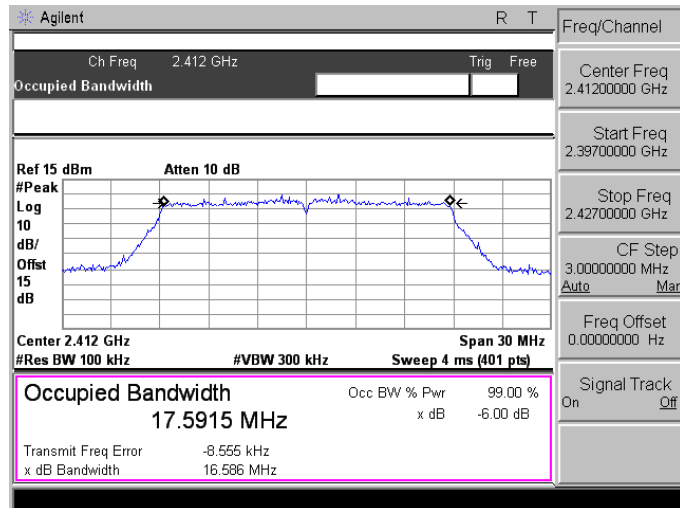
2462 MHz



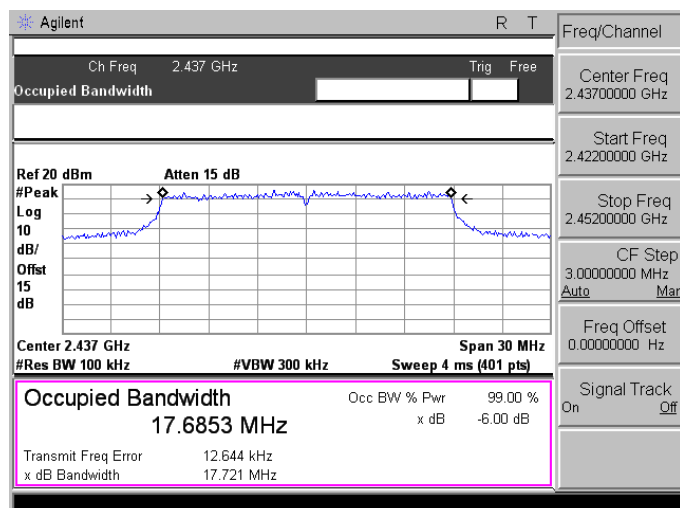


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-2

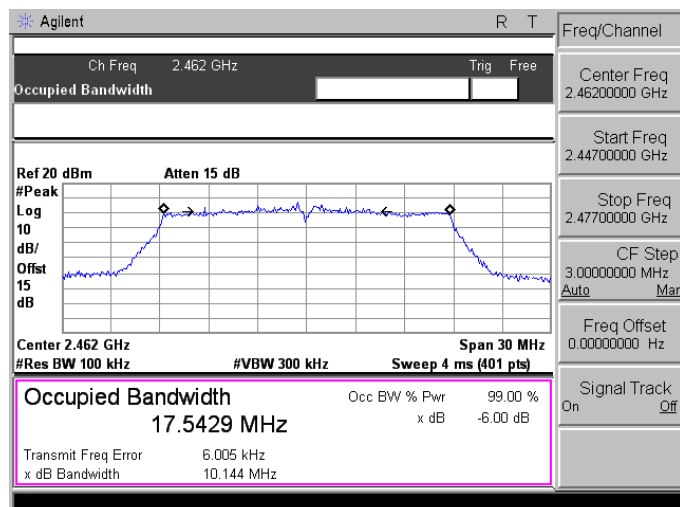
2412 MHz



2437 MHz



2462 MHz



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8 Maximum Power Density Measurement

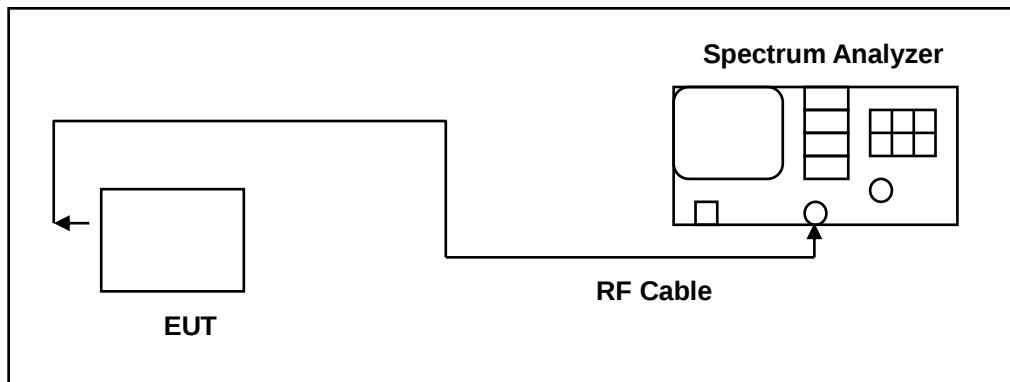
8.1. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

* CDD/Beamforming mode : Directional Gain = $10 \cdot \log\{[10^{G1/20} + 10^{G2/20} + \dots + 10^{Gn/20}]^2 / NANT\}$ = 6.6 dBi
> 6dBi

* CDD/Beamforming mode power limit shall be reduced = $8 - 0.6 = 7.4$ dBm.

8.2. Test Setup



8.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/19/2016	1 year
Microwave Cable	EMCI	EMC104-SM-SM-1500	140303	02/22/2017	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

Note: N.C.R. = No Calibration Request.

8.4. Test Procedure

The EUT tested to DTS test procedure of KDB558074D01 for compliance to FCC 47CFR 15.247 requirements.

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq 3 \times \text{RBW}$.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.



10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

8.5. Test Result

Test Item	Maximum Power Density					
Test Mode	Frequency (MHz)	Measurement (dBm/3KHz)				Limit (dBm/3KHz)
		ANT-0	ANT-1	ANT-2	ANT-0+1+2	
Mode 2	2412	1.894	2.767	2.288	7.102	< 7.4
	2437	1.857	2.904	2.200	7.114	< 7.4
	2462	1.524	2.762	2.023	6.904	< 7.4
Mode 3	2412	-6.644	-5.273	-6.611	-1.356	< 7.4
	2437	-0.052	0.929	-0.052	5.071	< 7.4
	2462	-6.609	-5.446	-6.128	-1.263	< 7.4
Mode 4	2412	-6.332	-5.769	-6.141	-1.303	< 7.4
	2437	-0.663	-0.412	-0.569	4.224	< 7.4
	2462	-6.952	-4.618	-6.210	-1.044	< 7.4
Mode 5	2422	-11.530	-11.720	-11.140	-6.685	< 7.4
	2437	-8.098	-6.505	-7.343	-2.495	< 7.4
	2452	-12.640	-11.810	-11.640	-7.237	< 7.4

Beamforming on

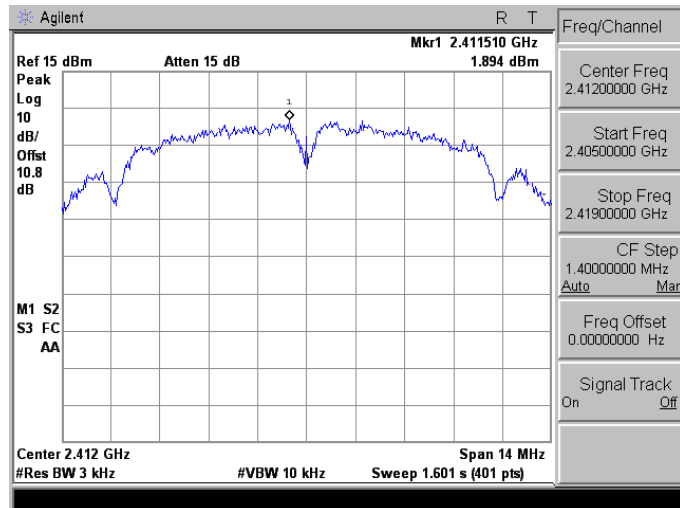
Test Mode	Frequency (MHz)	Measurement (dBm/3KHz)				Limit (dBm/3KHz)
		ANT-0	ANT-1	ANT-2	ANT-0+1+2	
Mode 4	2412	-10.260	-9.229	-9.678	-4.931	< 7.4
	2437	-1.029	-0.274	-1.180	3.962	< 7.4
	2462	-9.991	-8.359	-8.231	-4.019	< 7.4
Mode 5	2422	-11.470	-10.400	-10.690	-6.059	< 7.4
	2437	-8.624	-9.736	-7.933	-3.931	< 7.4
	2452	-11.010	-8.359	-10.010	-4.882	< 7.4



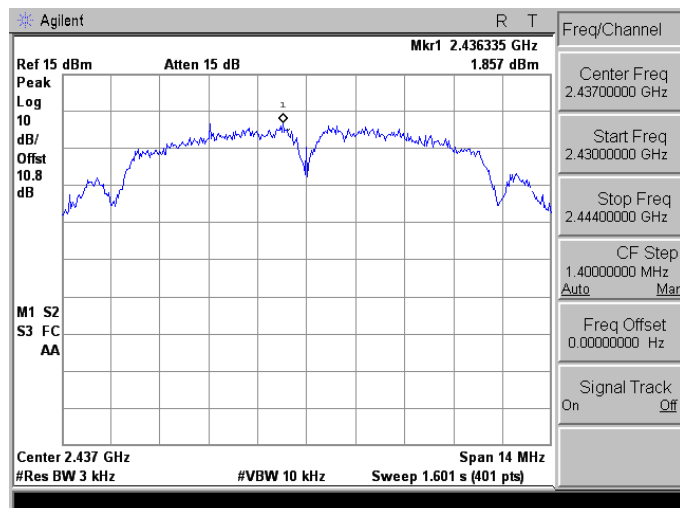
8.6. Test Graphs

Mode 2: IEEE 802.11b Continuous TX mode_ANT-0

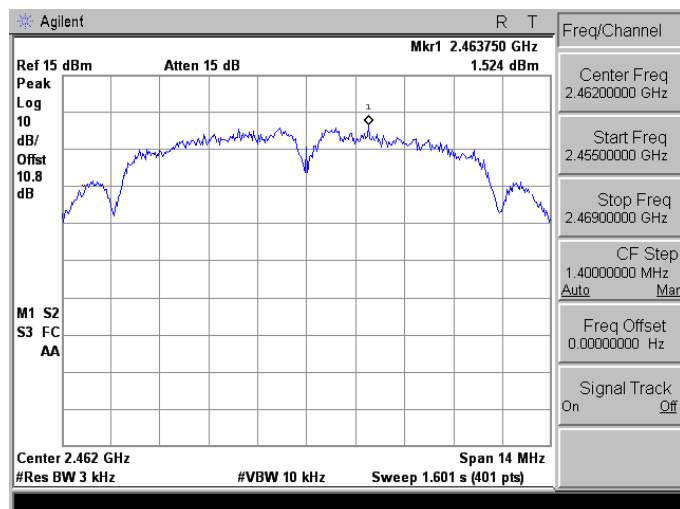
2412 MHz



2437 MHz



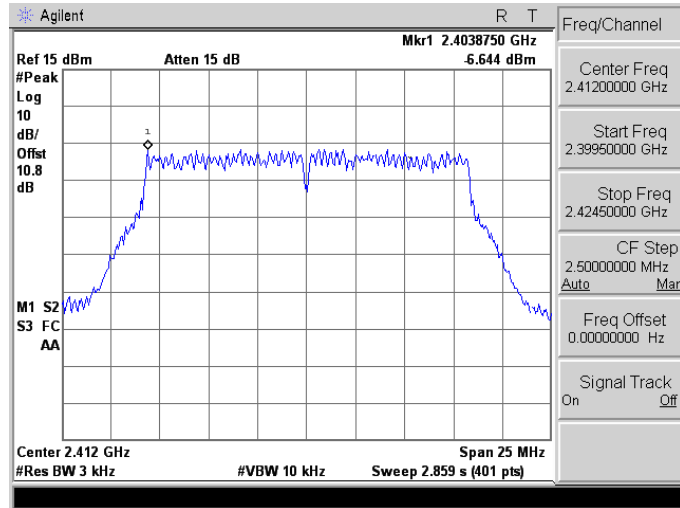
2462 MHz



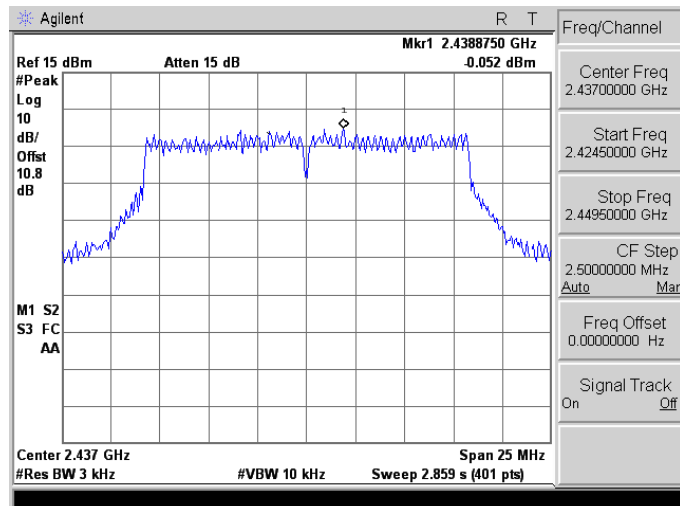


Mode 3: IEEE 802.11g Continuous TX mode_ANT-0

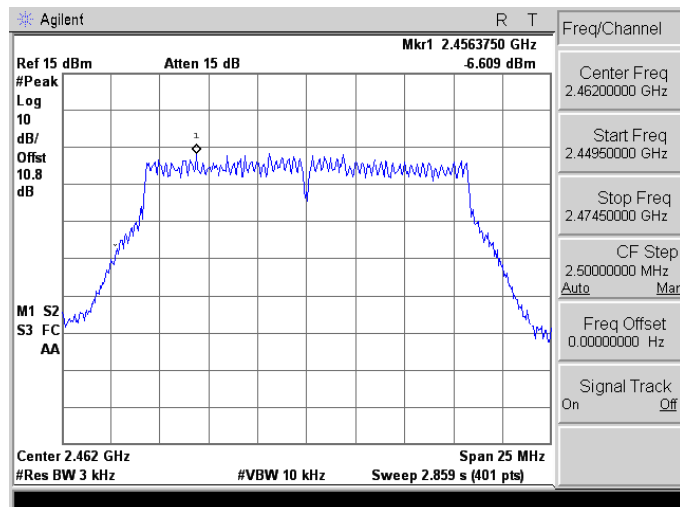
2412 MHz



2437 MHz



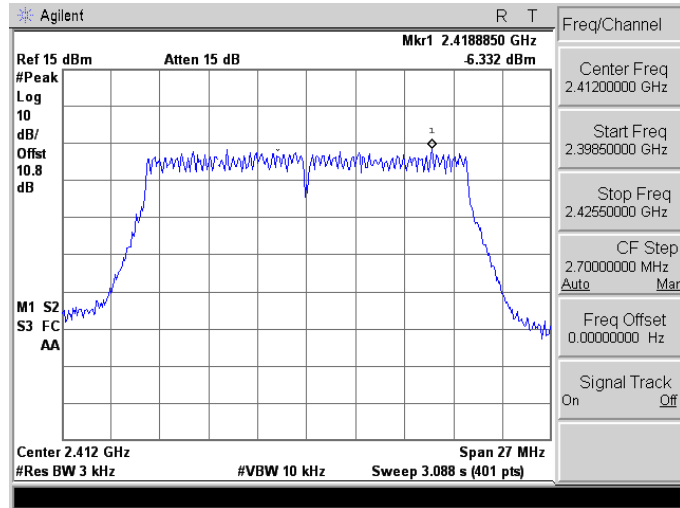
2462 MHz



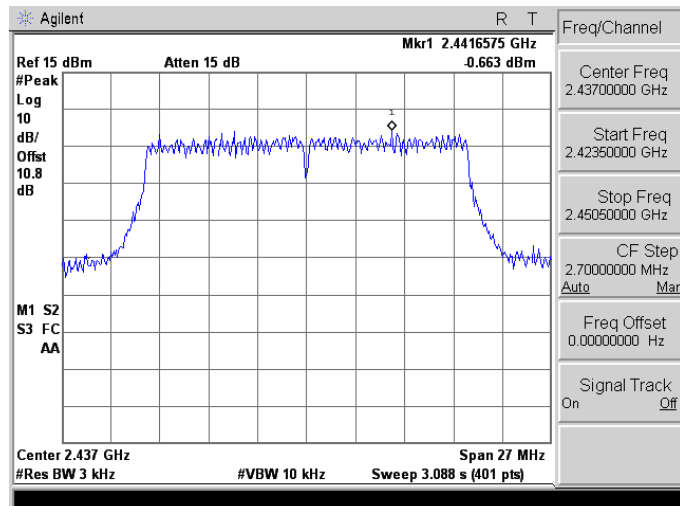


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-0

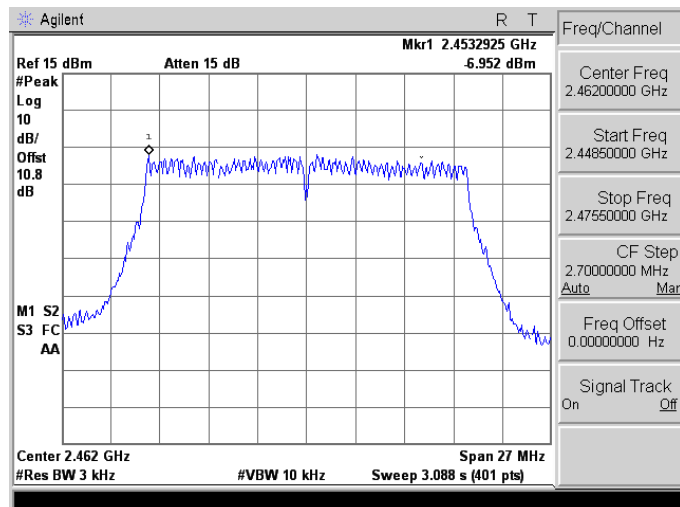
2412 MHz



2437 MHz



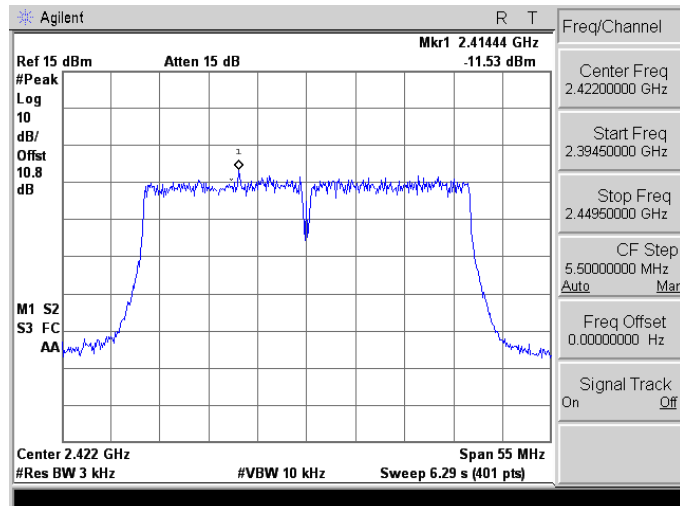
2462 MHz



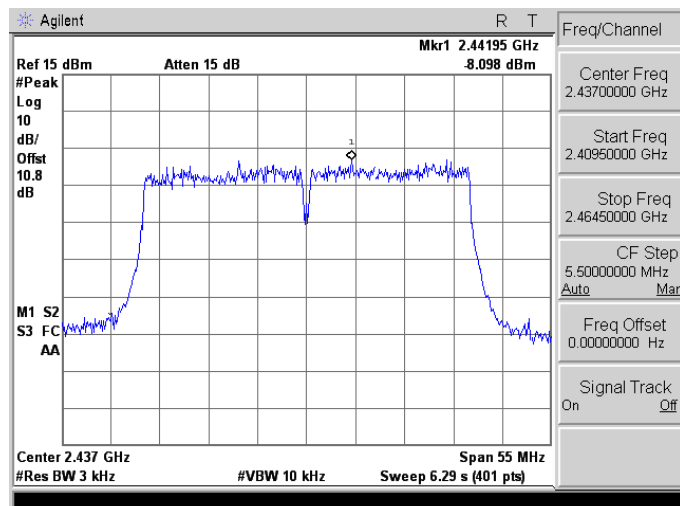


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-0

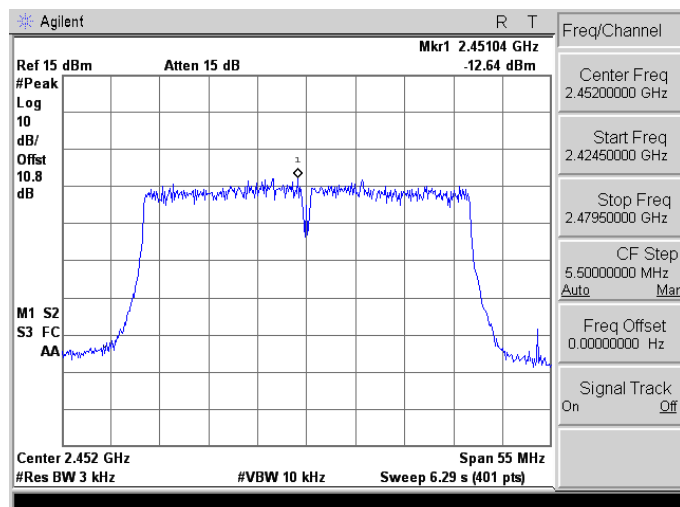
2422 MHz



2437 MHz



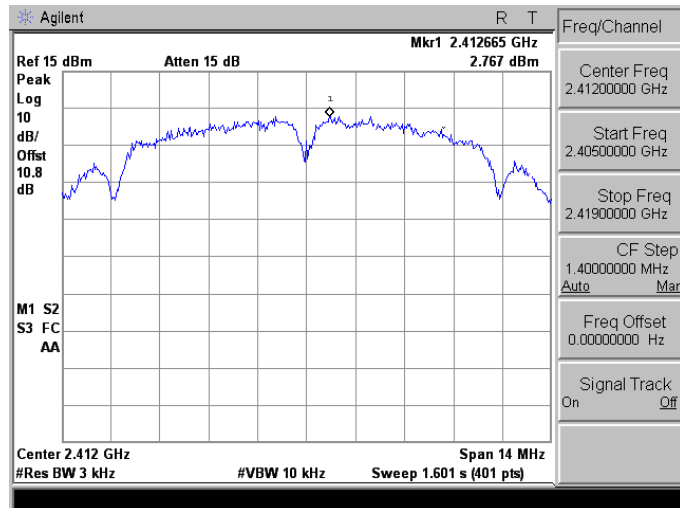
2452 MHz



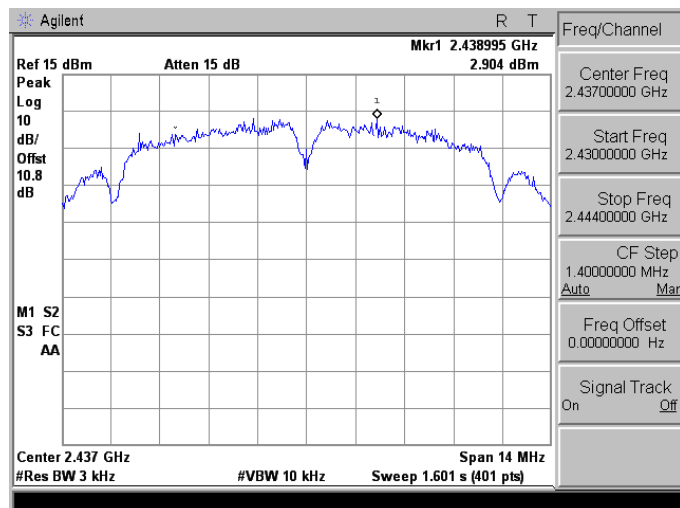


Mode 2: IEEE 802.11b Continuous TX mode_ANT-1

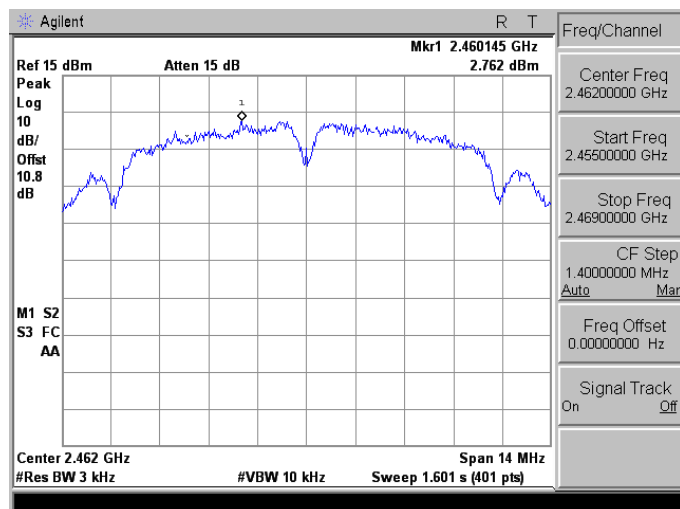
2412 MHz



2437 MHz



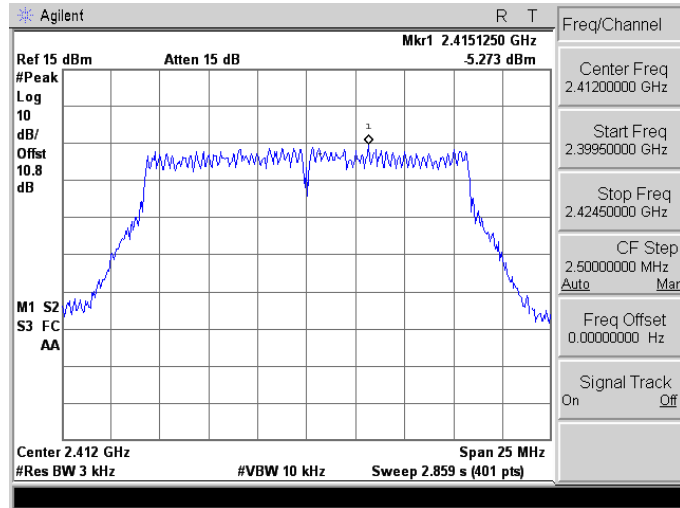
2462 MHz



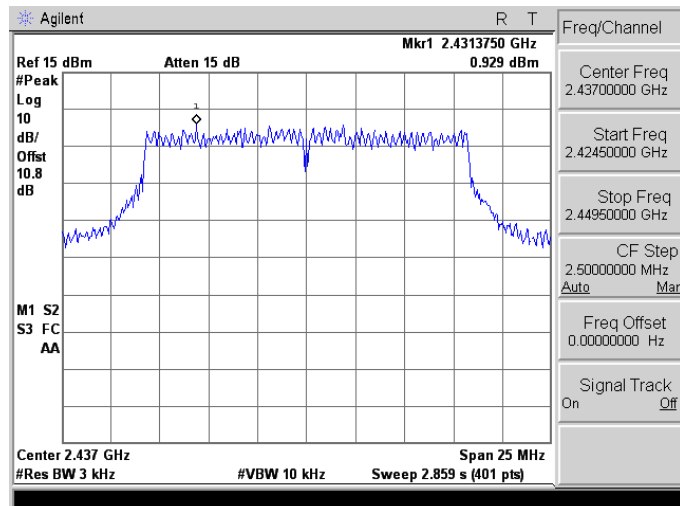


Mode 3: IEEE 802.11g Continuous TX mode_ANT-1

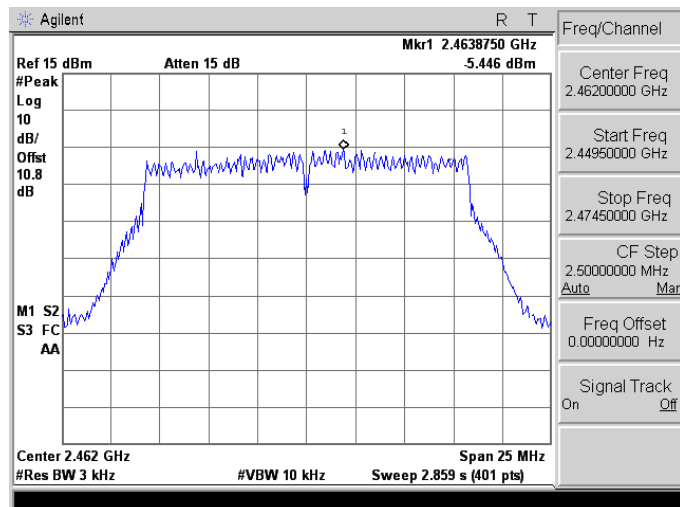
2412 MHz



2437 MHz



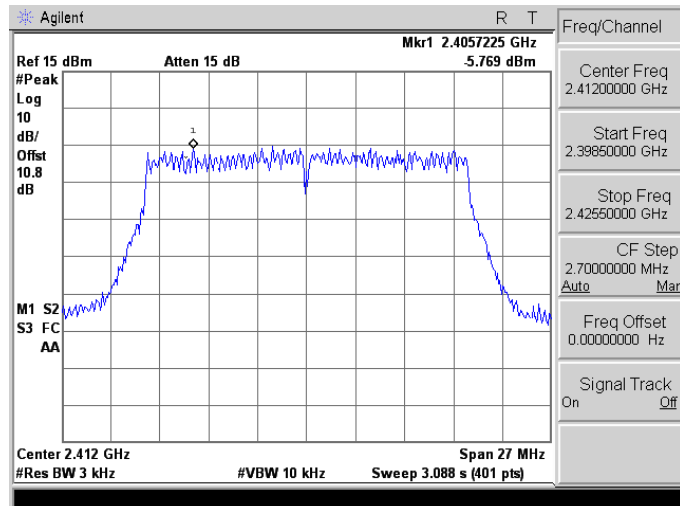
2462 MHz



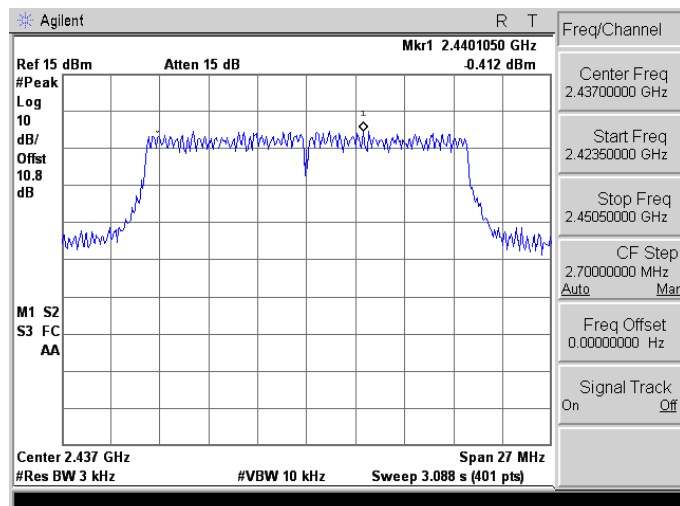


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-1

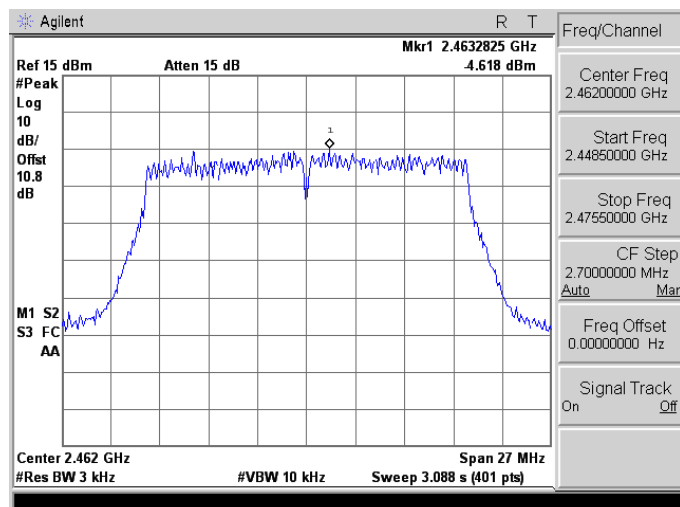
2412 MHz



2437 MHz



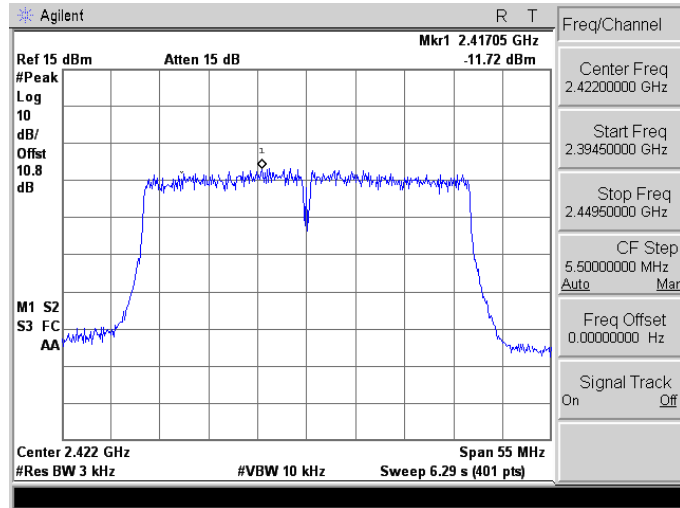
2462 MHz



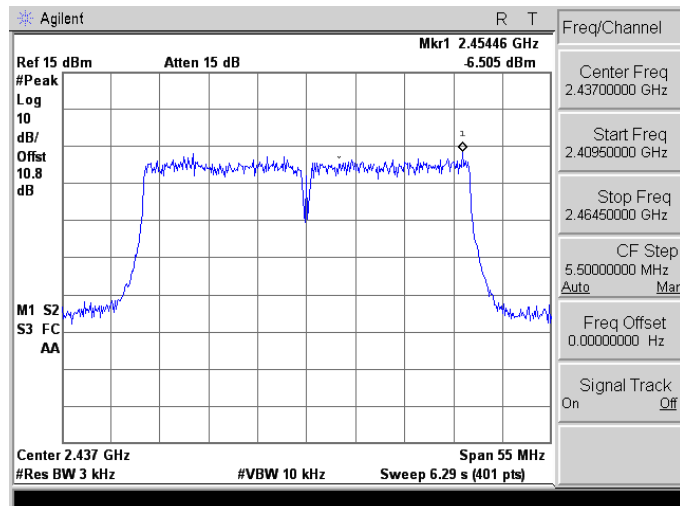


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-1

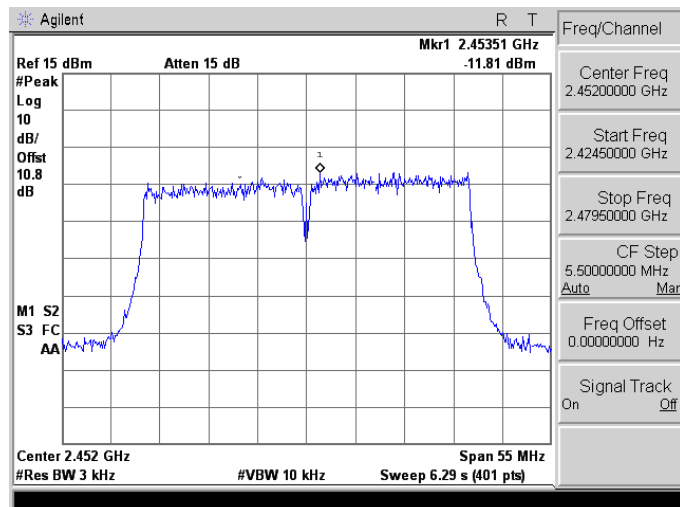
2422 MHz



2437 MHz



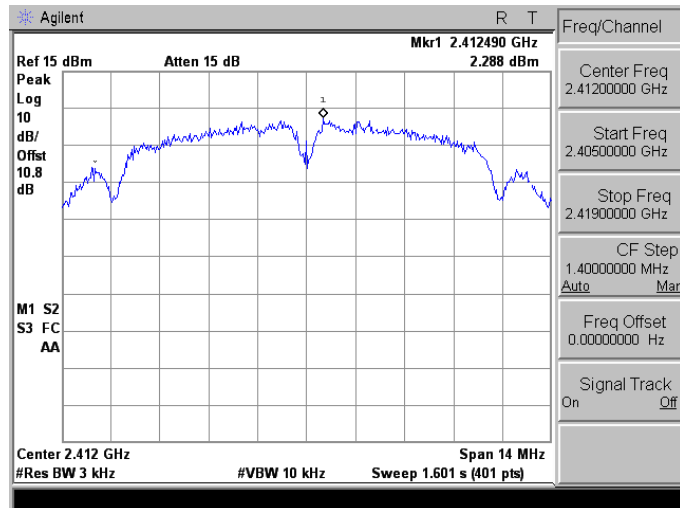
2452 MHz



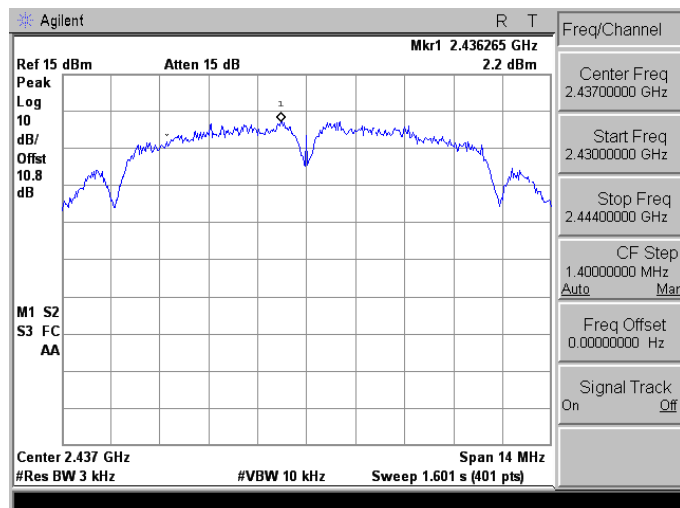


Mode 2: IEEE 802.11b Continuous TX mode_ANT-2

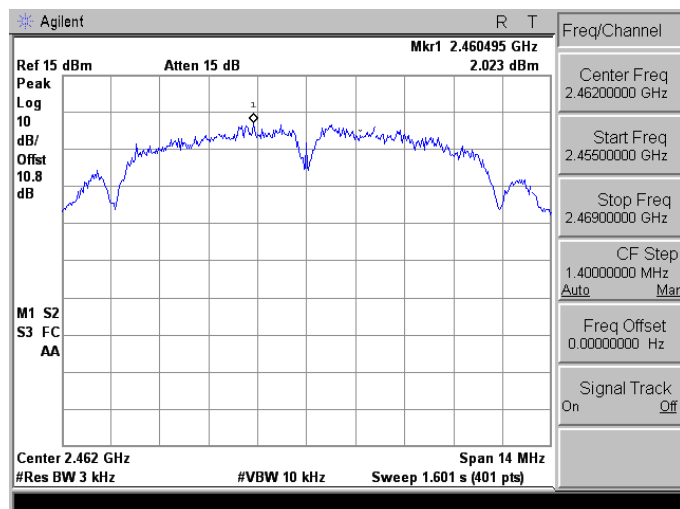
2412 MHz



2437 MHz



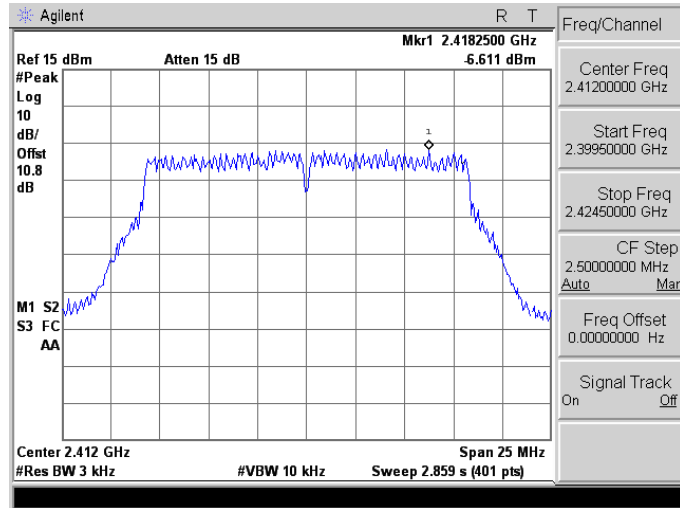
2462 MHz



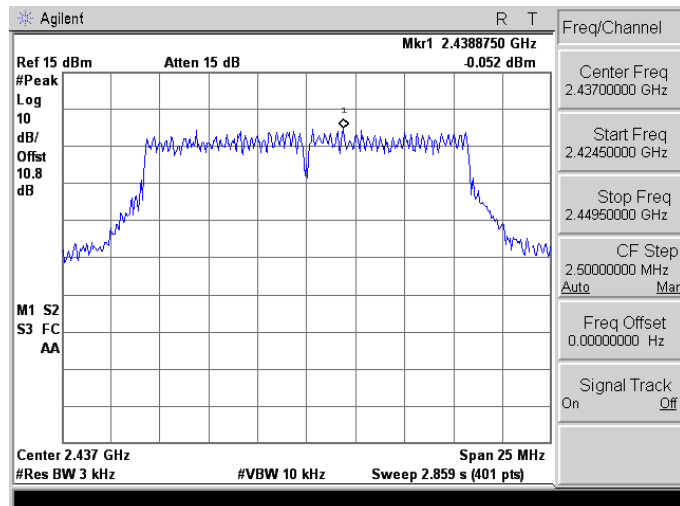


Mode 3: IEEE 802.11g Continuous TX mode_ANT-2

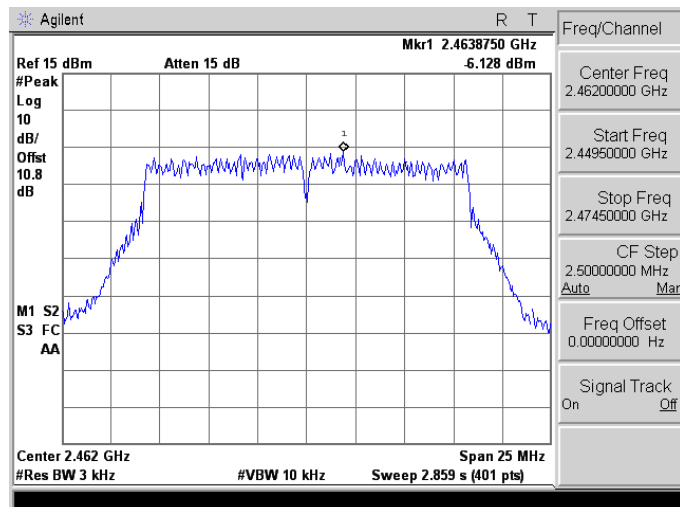
2412 MHz



2437 MHz



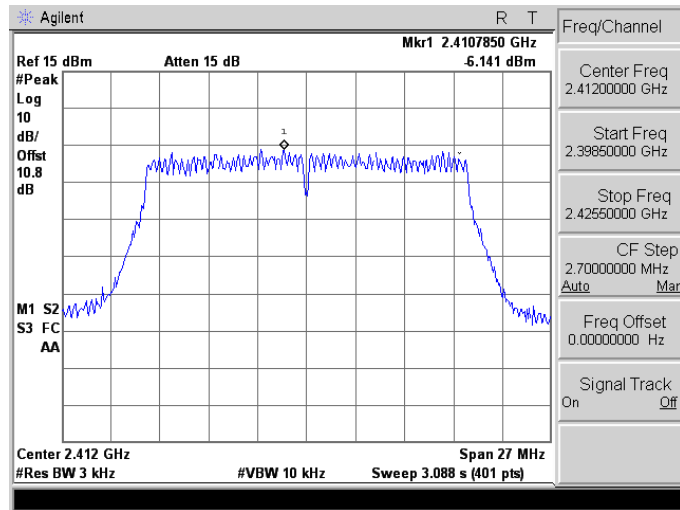
2462 MHz



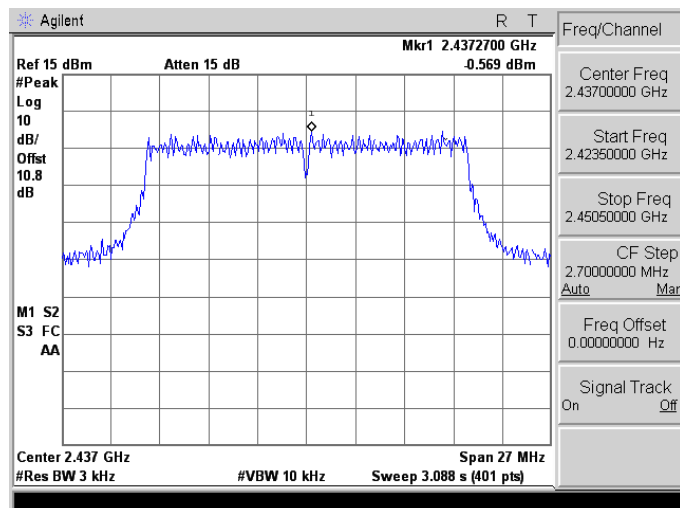


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-2

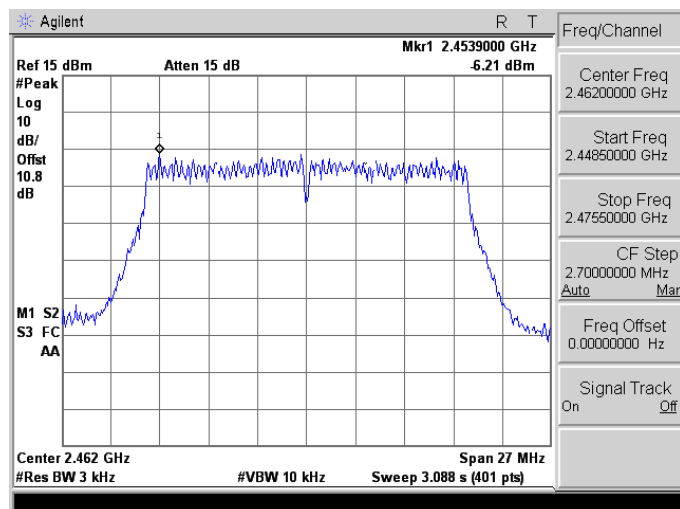
2412 MHz



2437 MHz



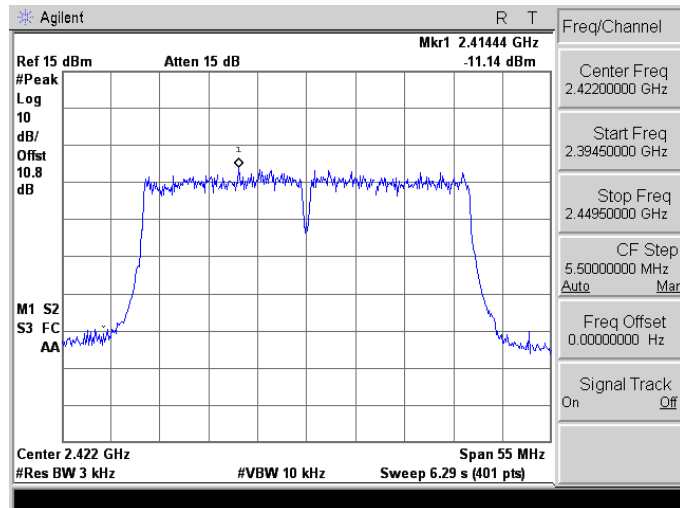
2462 MHz



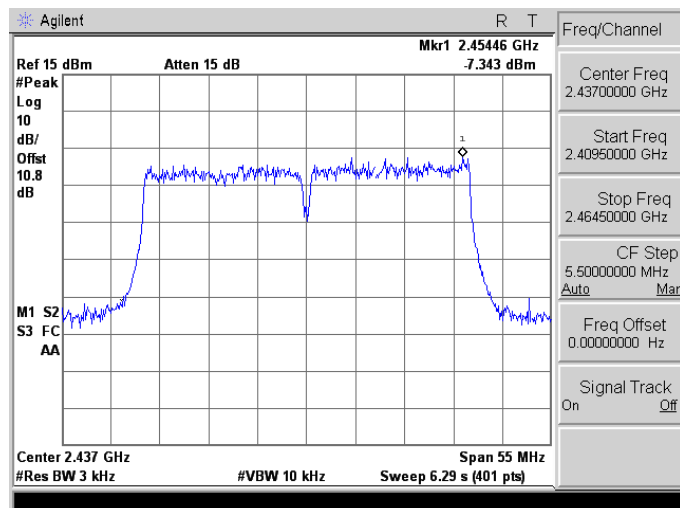


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-2

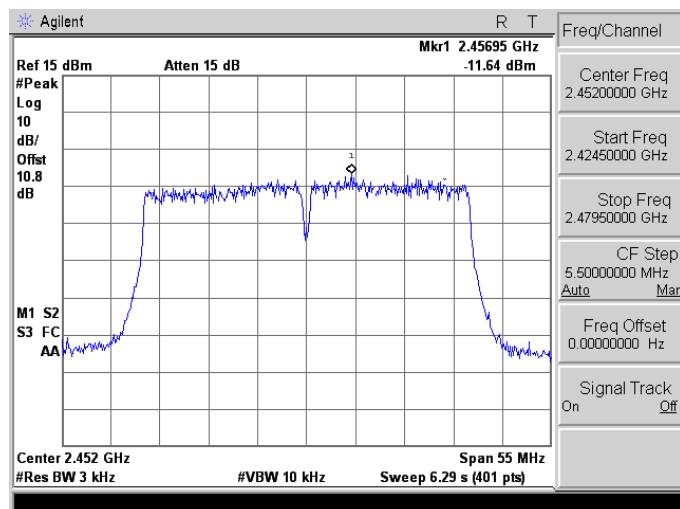
2422 MHz



2437 MHz



2452 MHz

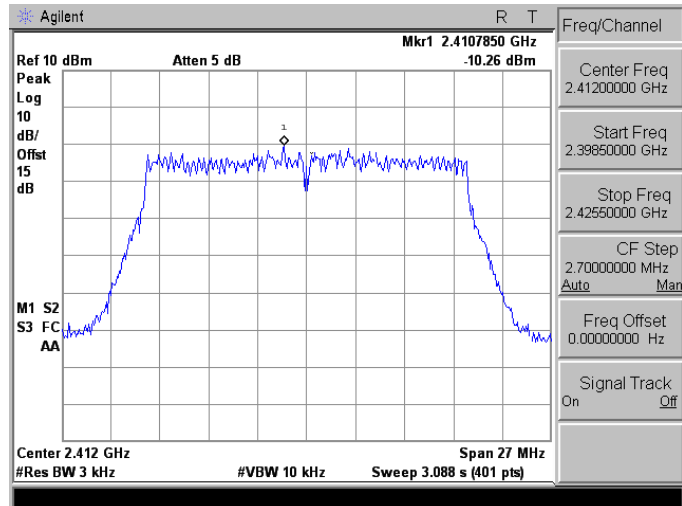




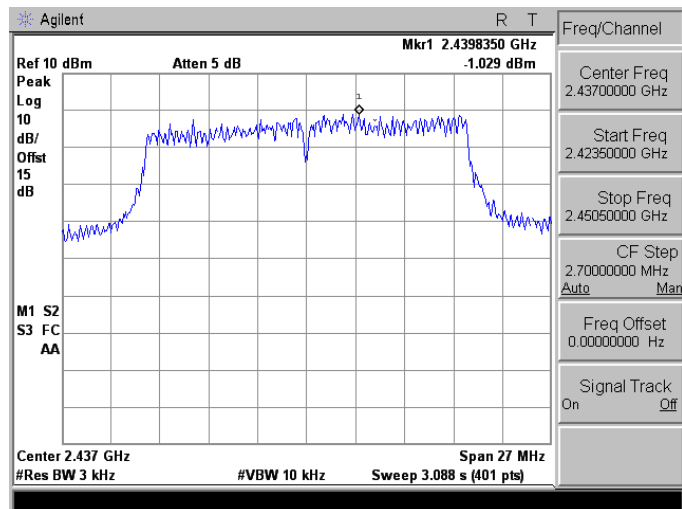
Beamforming on

Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-0

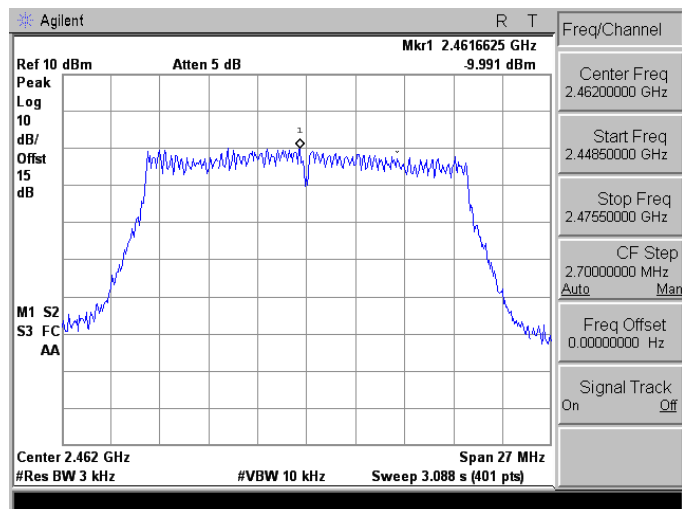
2412 MHz



2437 MHz



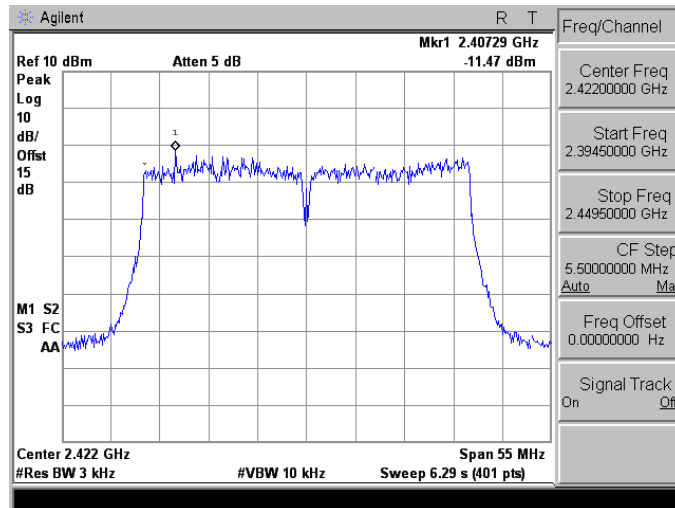
2462 MHz



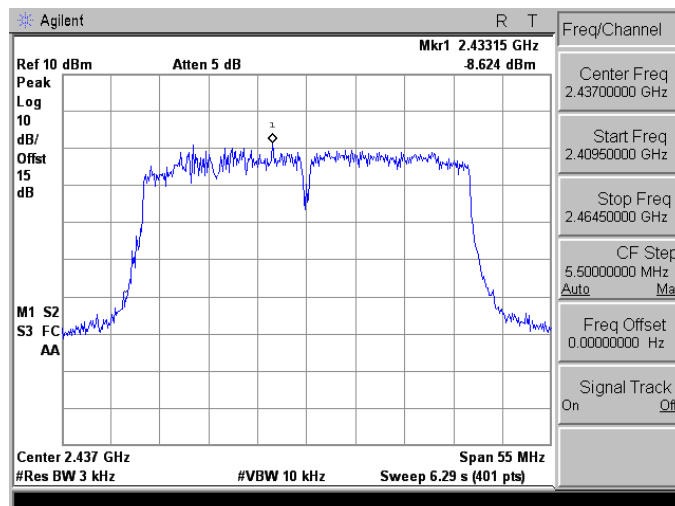


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-0

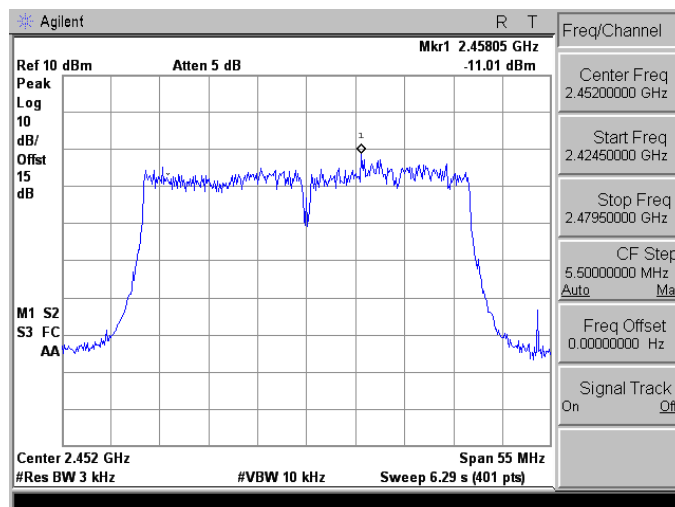
2422 MHz



2437 MHz



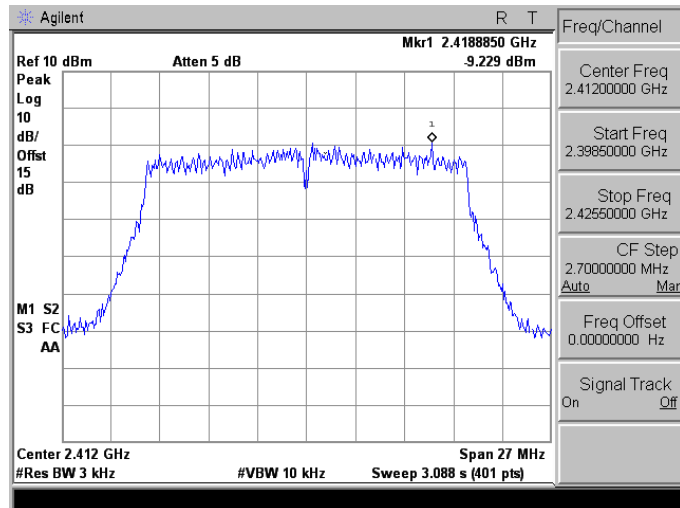
2452 MHz



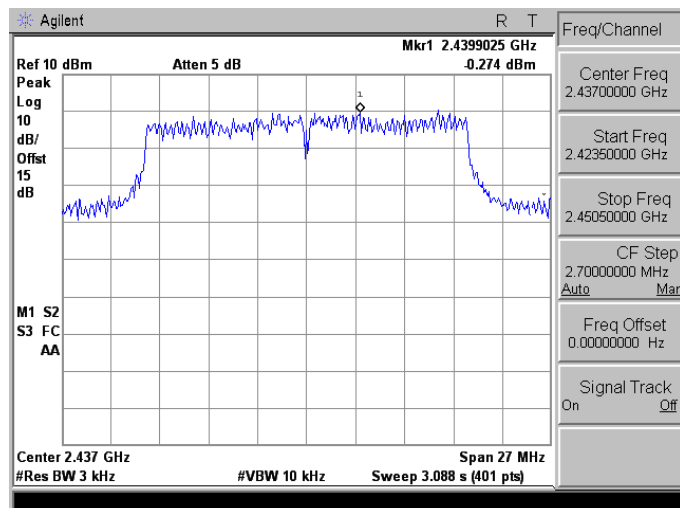


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-1

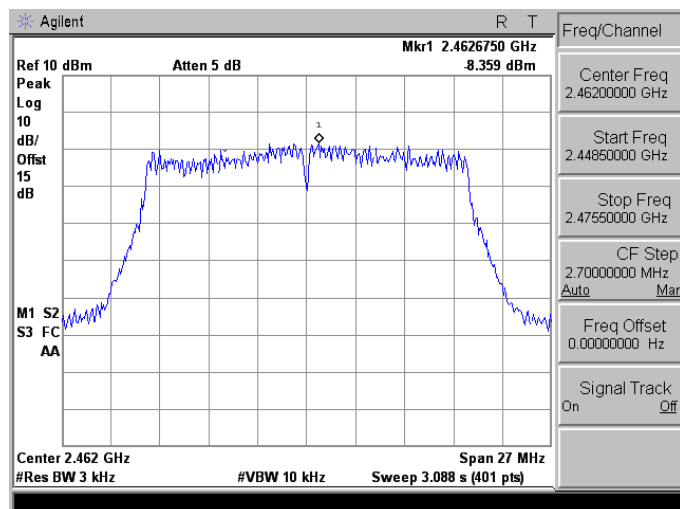
2412 MHz



2437 MHz



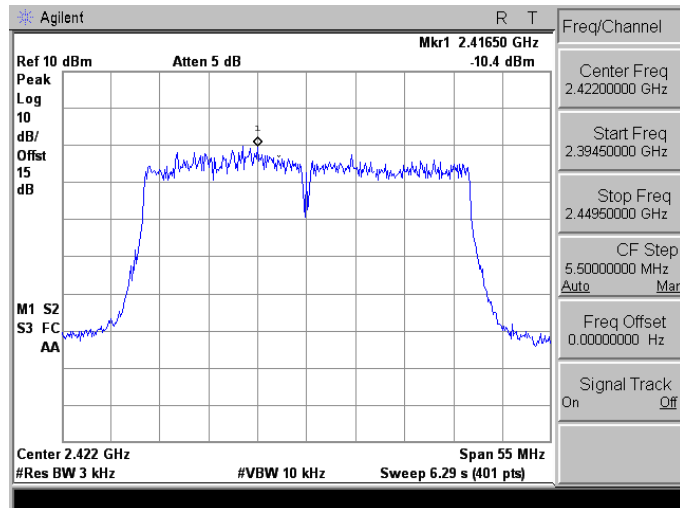
2462 MHz



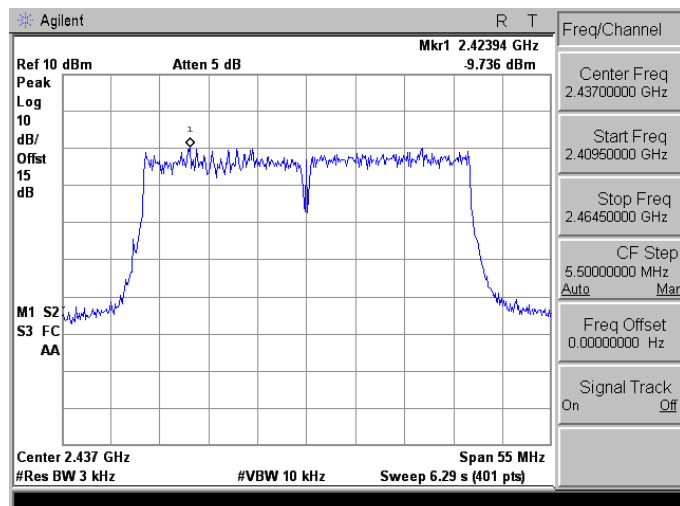


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-1

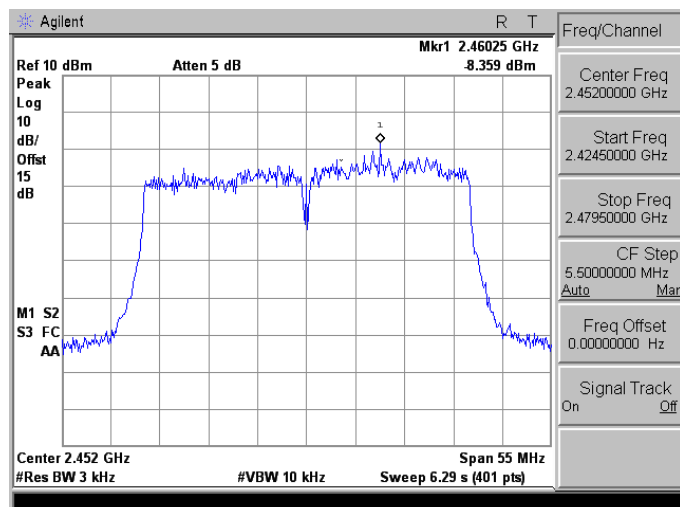
2422 MHz



2437 MHz



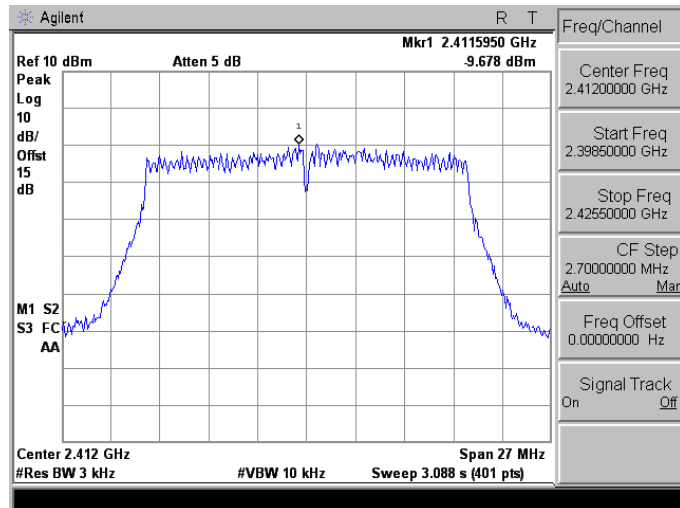
2452 MHz



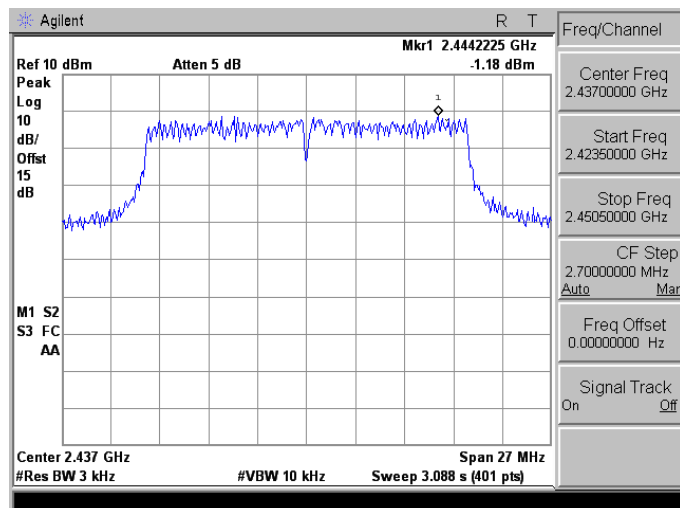


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-2

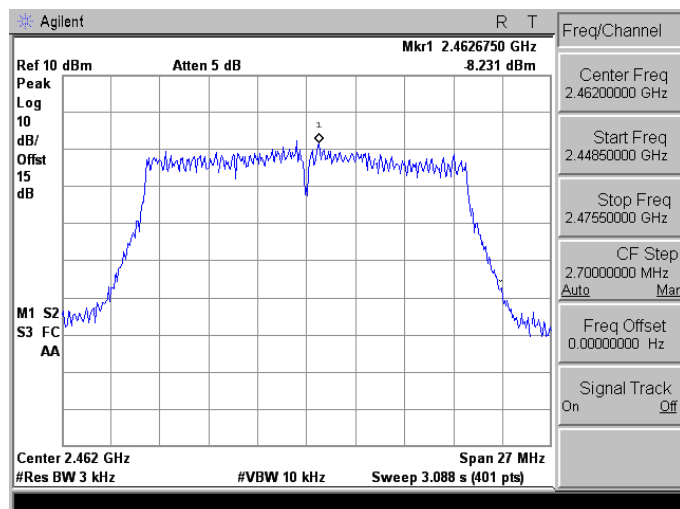
2412 MHz



2437 MHz



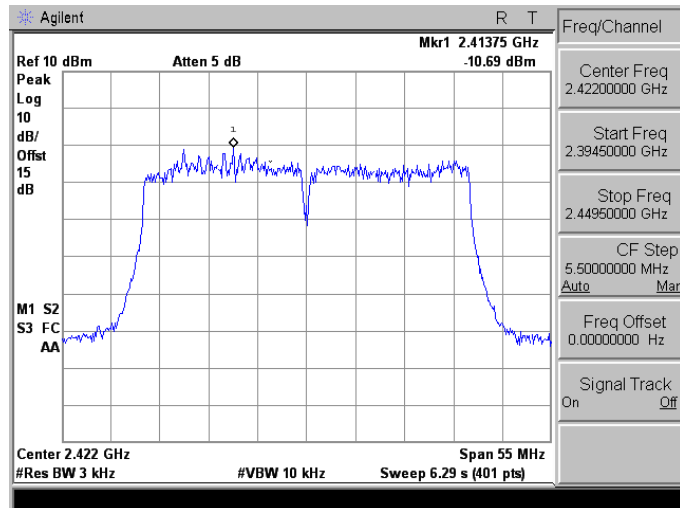
2462 MHz



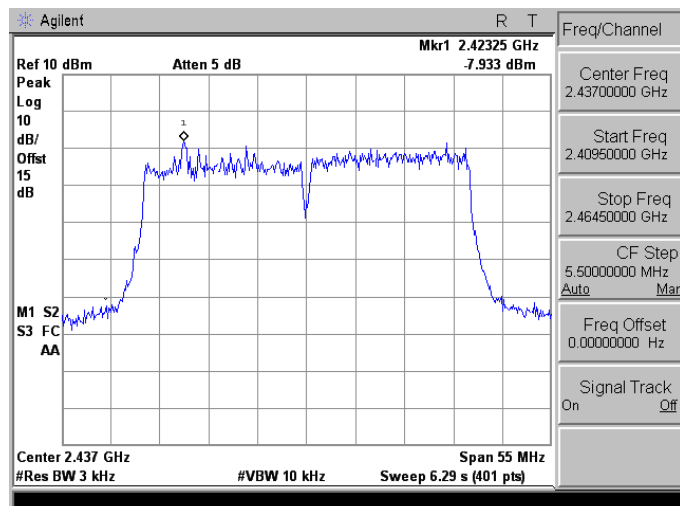


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-2

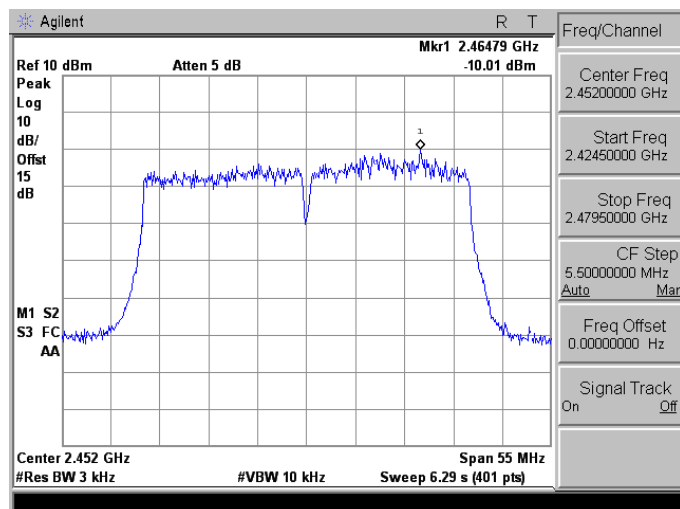
2422 MHz



2437 MHz



2452 MHz

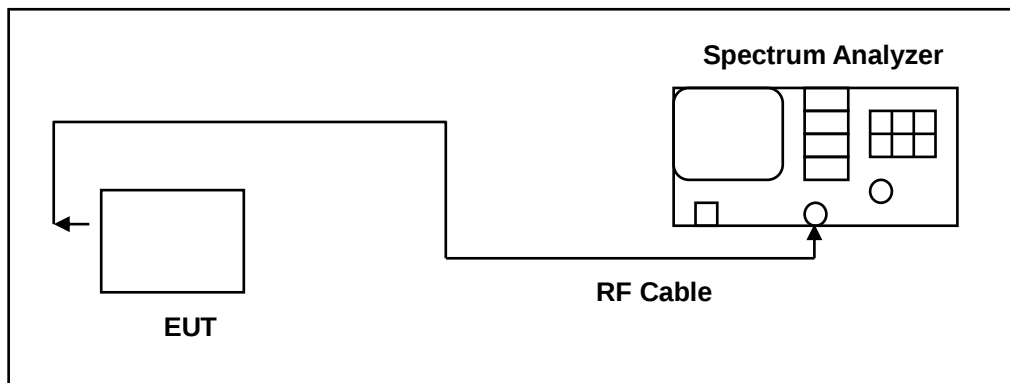


9 Out of Band Conducted Emissions Measurement

9.1. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

9.2. Test Setup



9.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/19/2016	1 year
Spectrum Analyzer	Agilent	E4408B	MY45107753	08/08/2016	1 year
Microwave Cable	EMCI	EMC104-SM-SM-1500	140303	02/22/2017	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

Note: N.C.R. = No Calibration Request.

9.4. Test Procedure

In any 100 kHz bandwidth outside the EUT pass band, the RF power produced by the modulation products of the spreading sequence, the information sequence, and the carrier frequency shall be at least 30dB below that of the maximum in-band 100 kHz emission, antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function. All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the pass band. The test was performed at 3 channels.



9.5. Test Graphs

Reference level

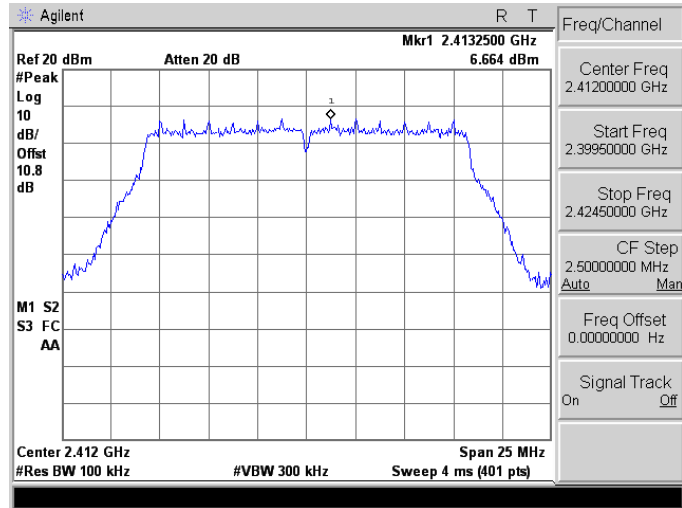
Mode 2: IEEE 802.11b Continuous TX mode_ANT-0

2412 MHz	
2437 MHz	
2462 MHz	

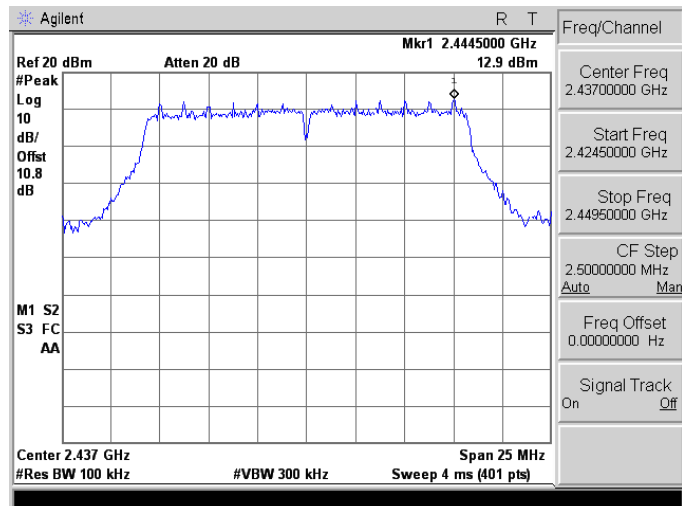


Mode 3: IEEE 802.11g Continuous TX mode_ANT-0

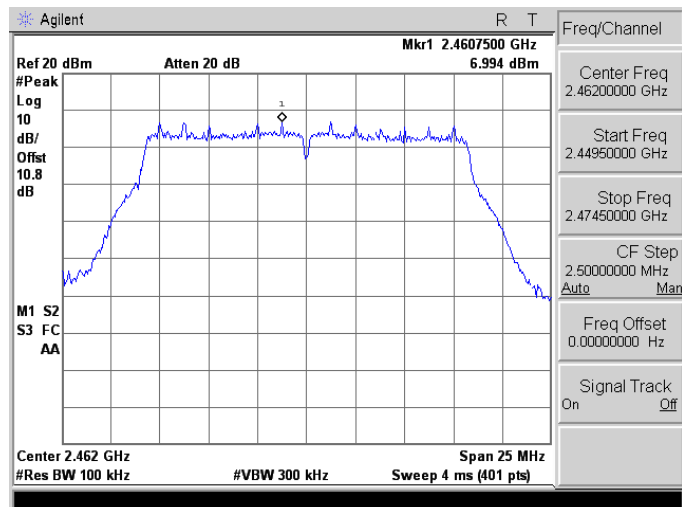
2412 MHz



2437 MHz



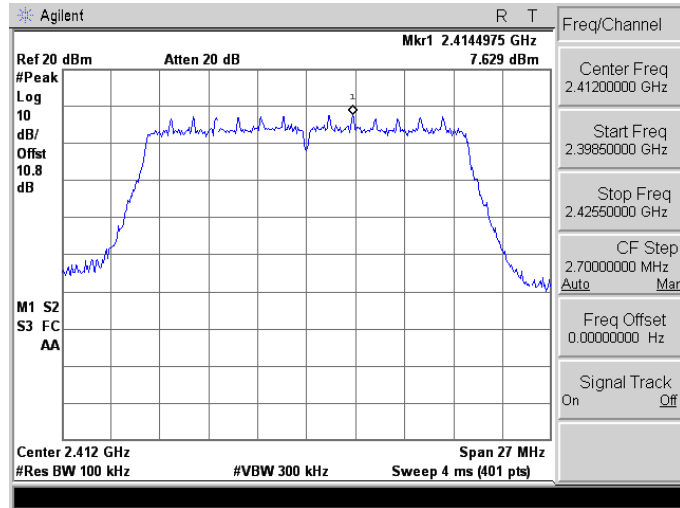
2462 MHz



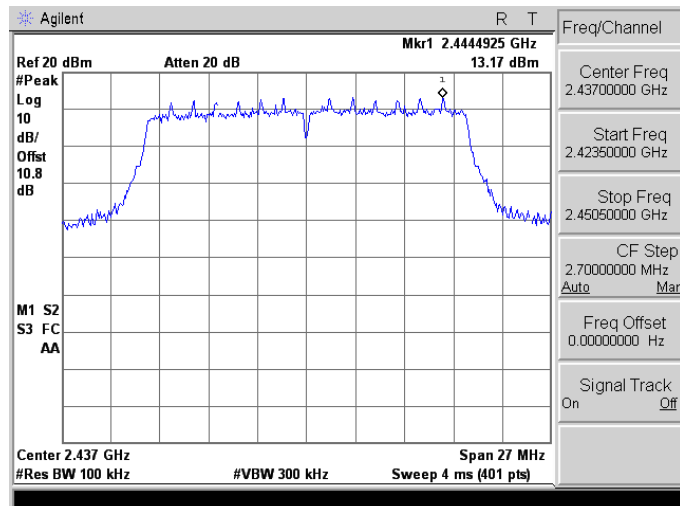


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-0

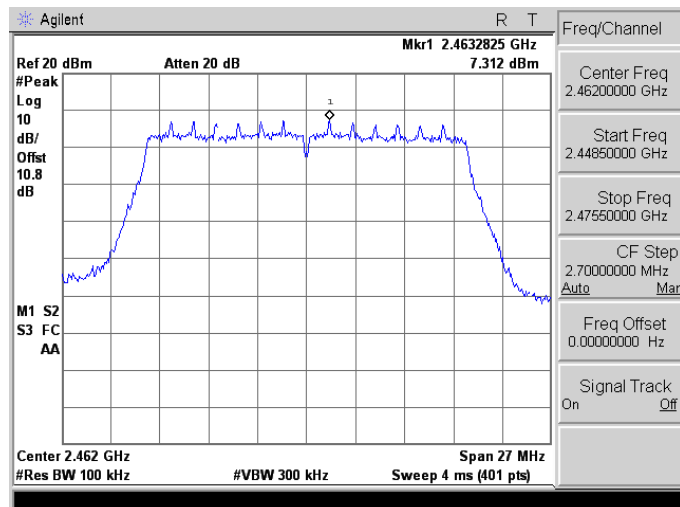
2412 MHz



2437 MHz



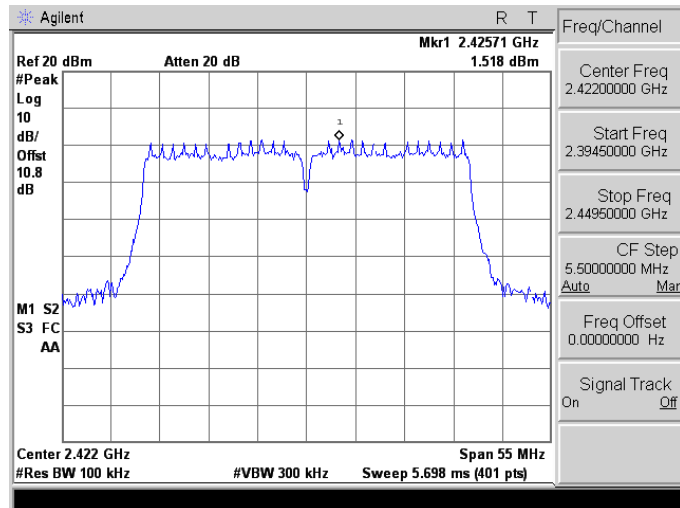
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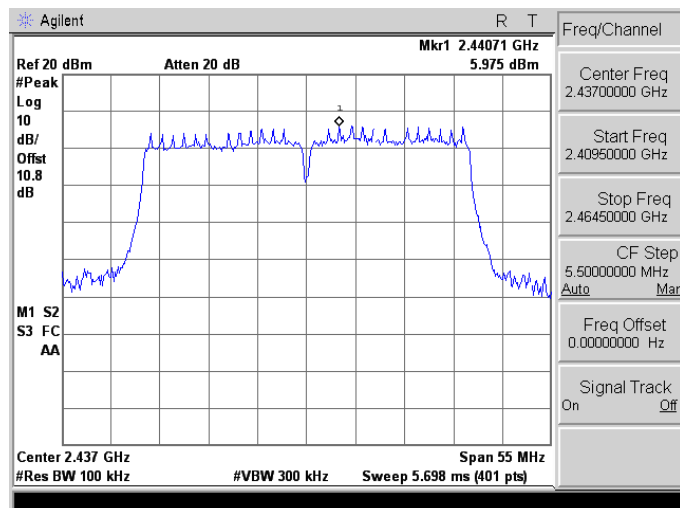


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-0

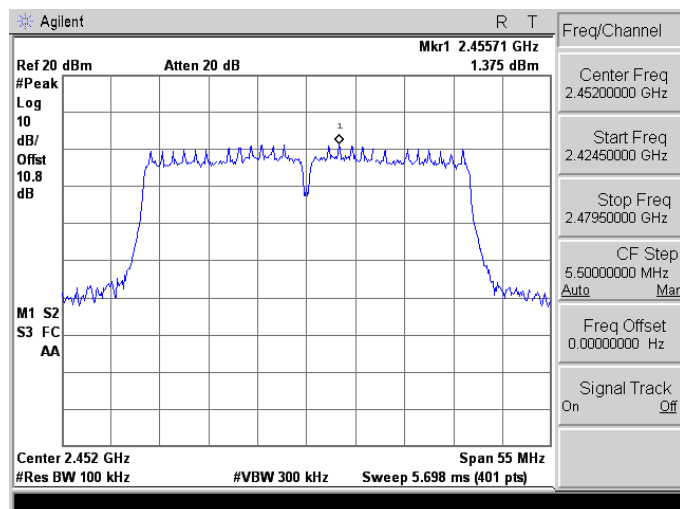
2422 MHz



2437 MHz



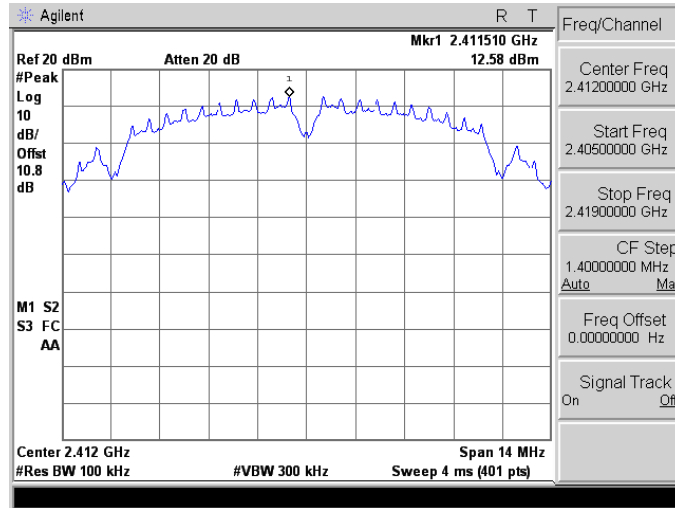
2452 MHz



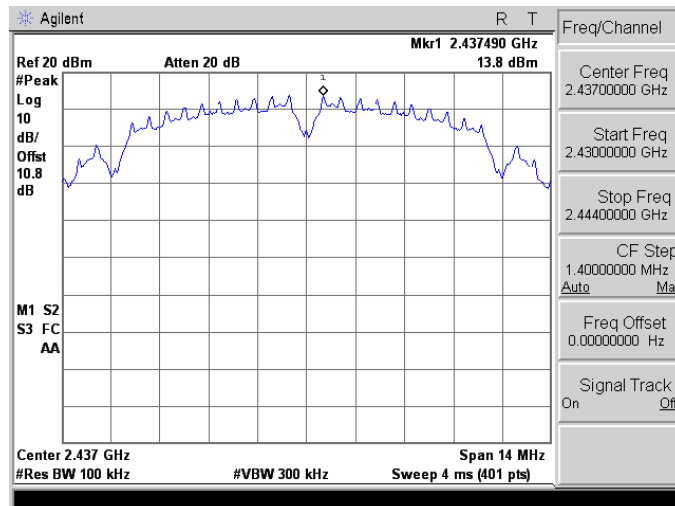


Mode 2: IEEE 802.11b Continuous TX mode_ANT-1

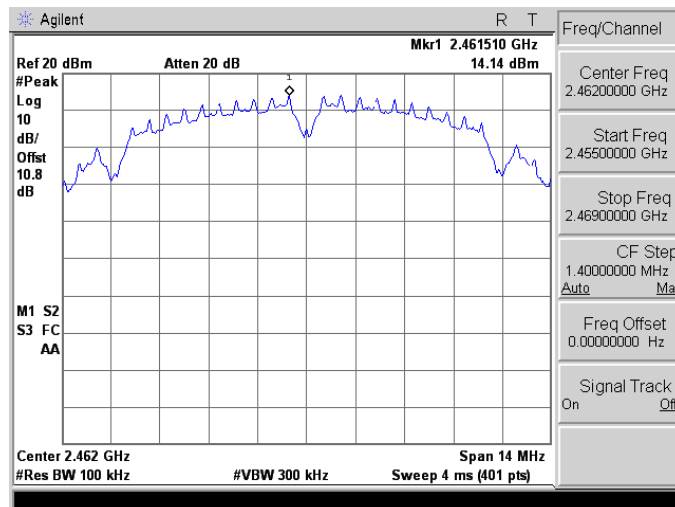
2412 MHz



2437 MHz



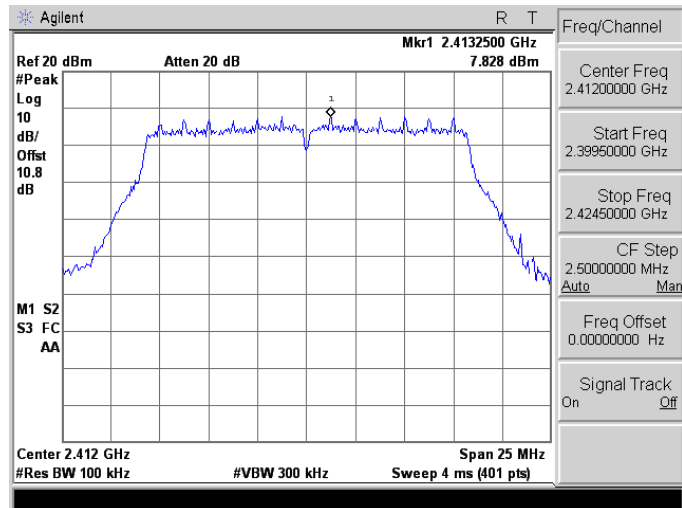
2462 MHz



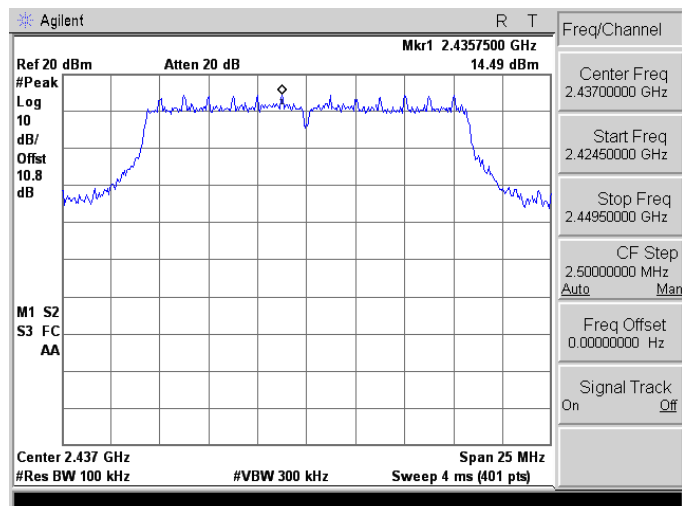


Mode 3: IEEE 802.11g Continuous TX mode_ANT-1

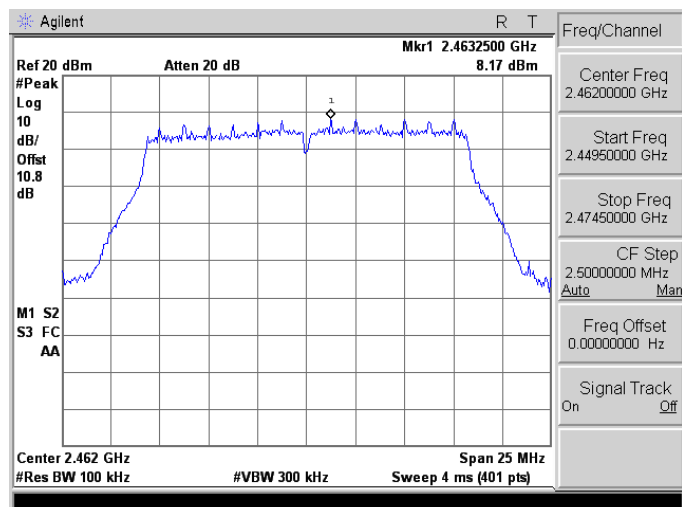
2412 MHz



2437 MHz



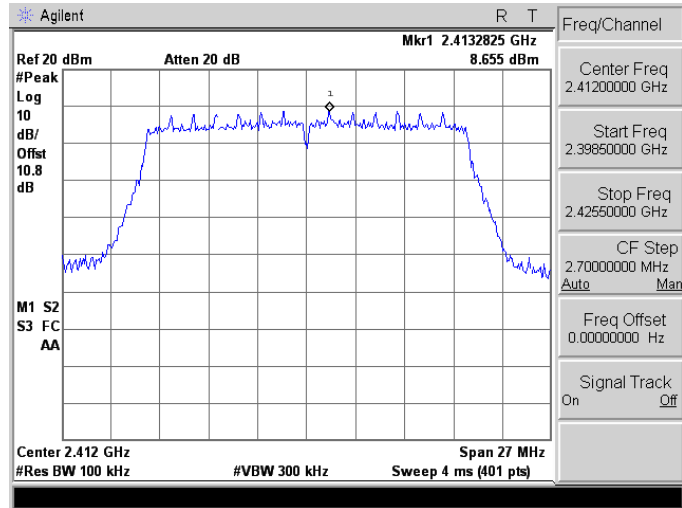
2462 MHz



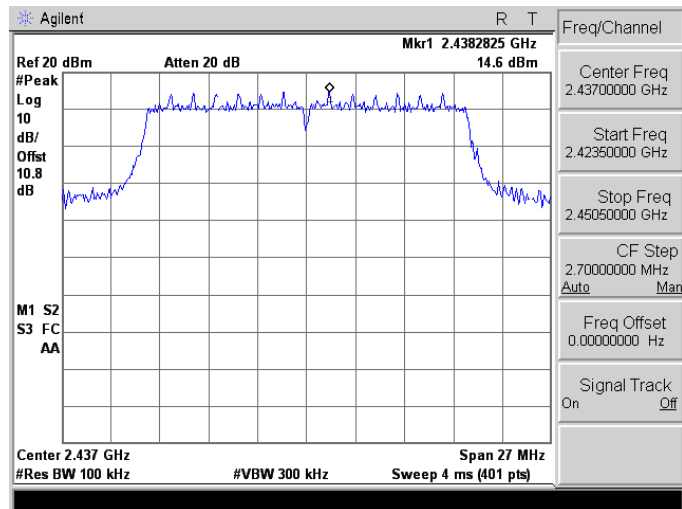


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-1

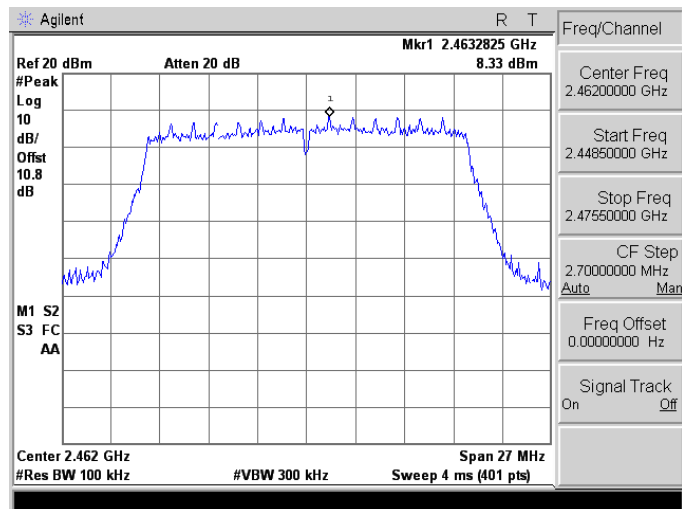
2412 MHz



2437 MHz



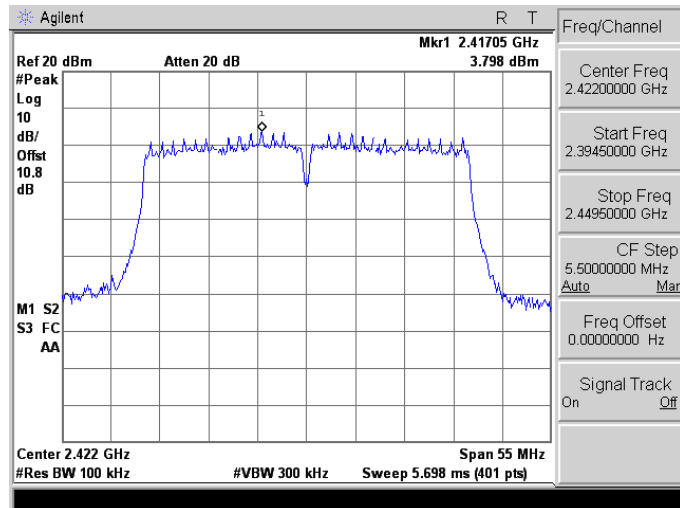
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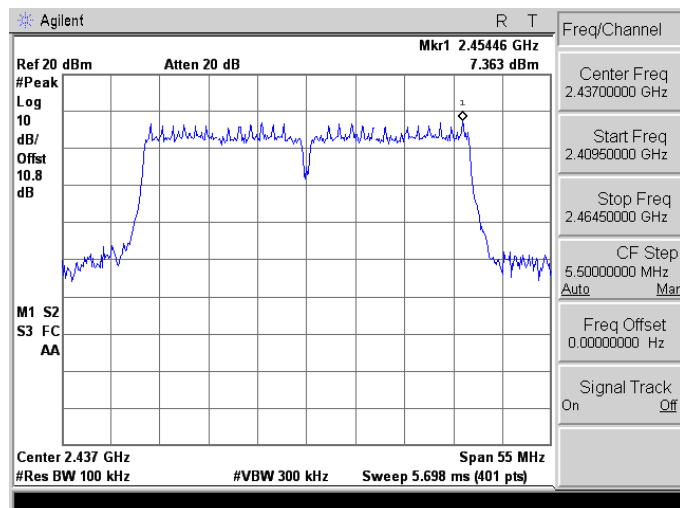


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-1

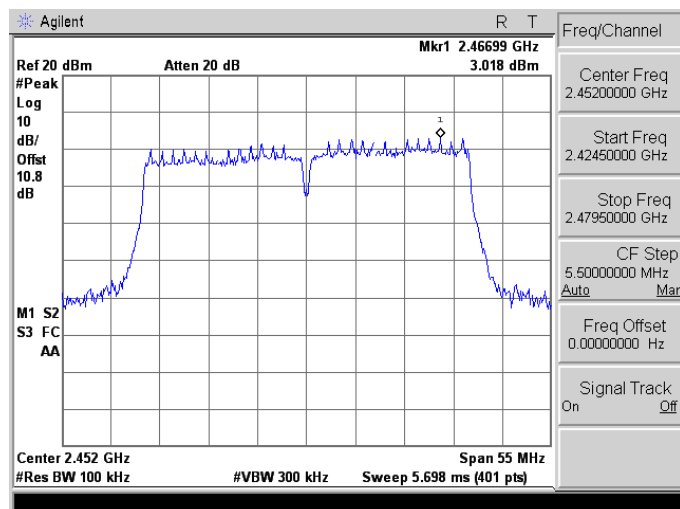
2422 MHz



2437 MHz



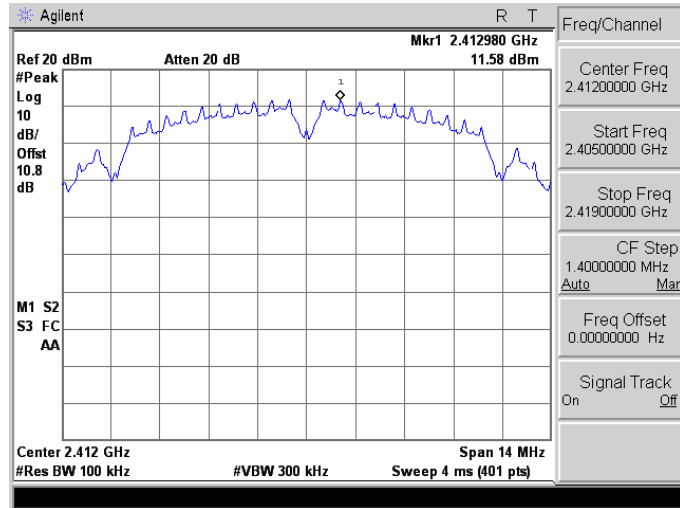
2452 MHz



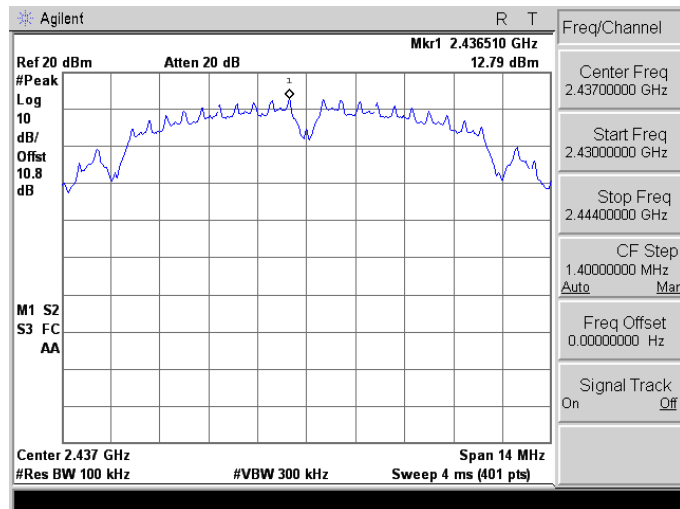


Mode 2: IEEE 802.11b Continuous TX mode_ANT-2

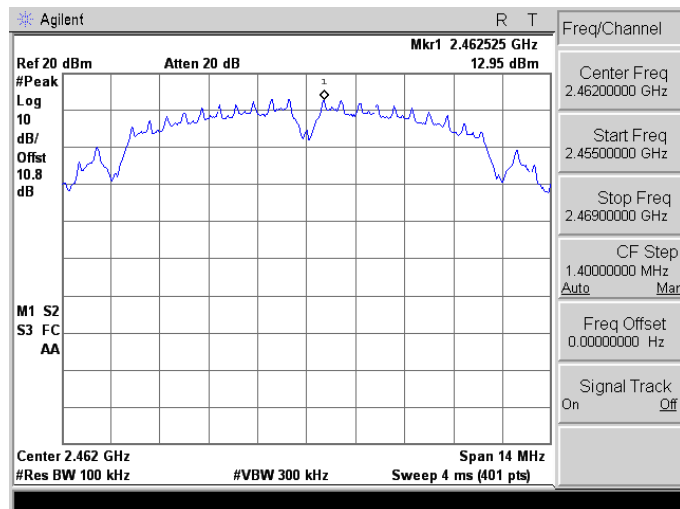
2412 MHz



2437 MHz



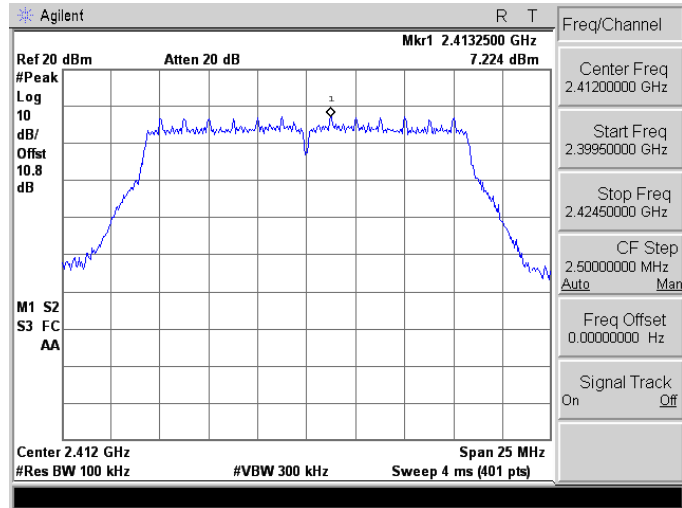
2462 MHz



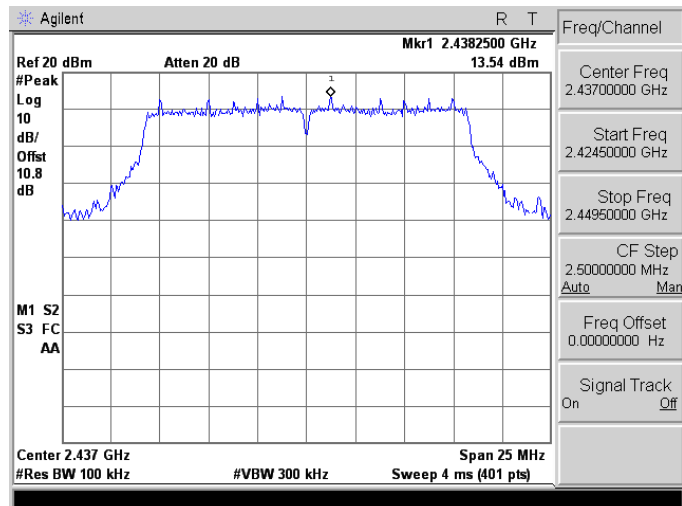


Mode 3: IEEE 802.11g Continuous TX mode_ANT-2

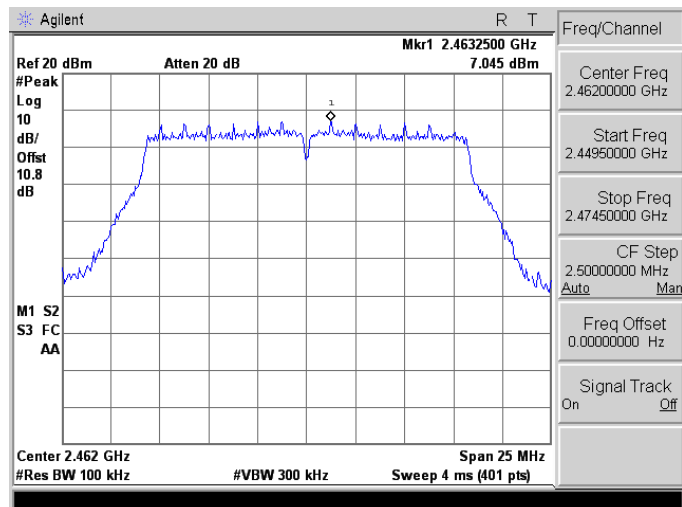
2412 MHz



2437 MHz



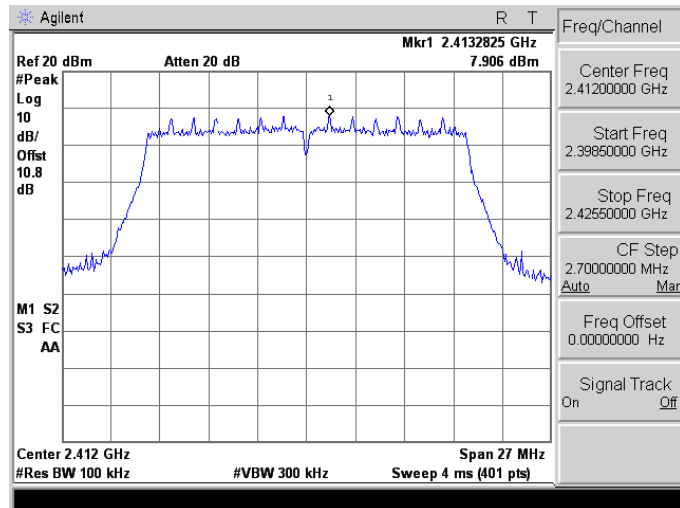
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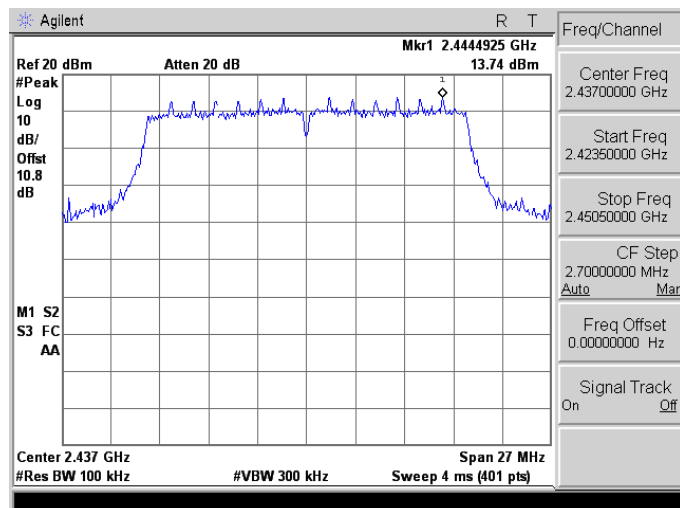


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-2

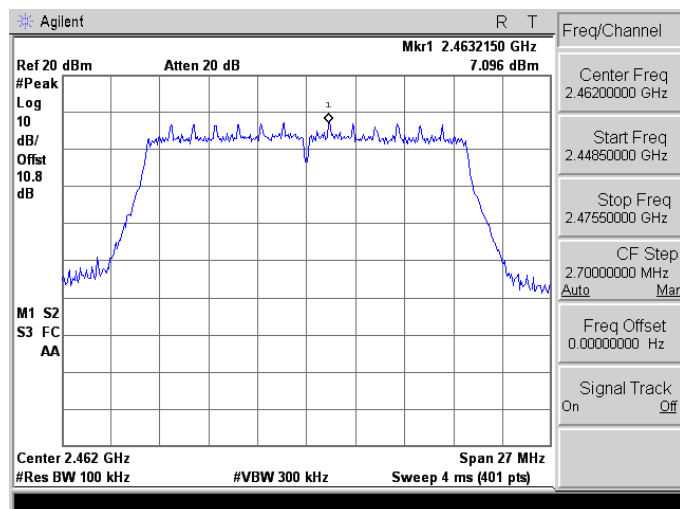
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2437 MHz



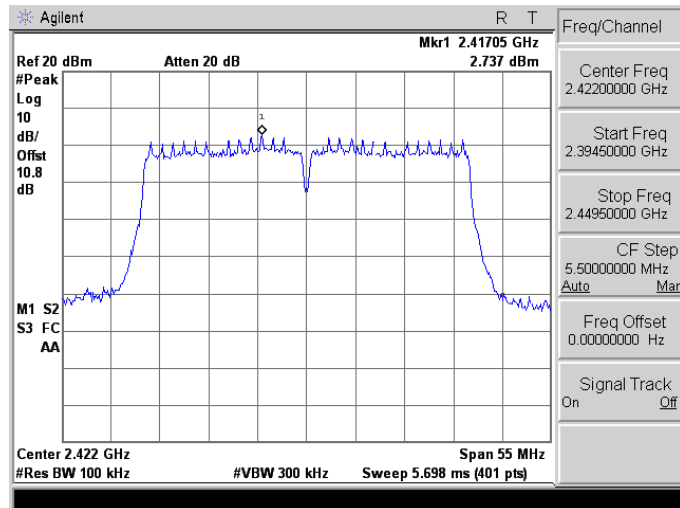
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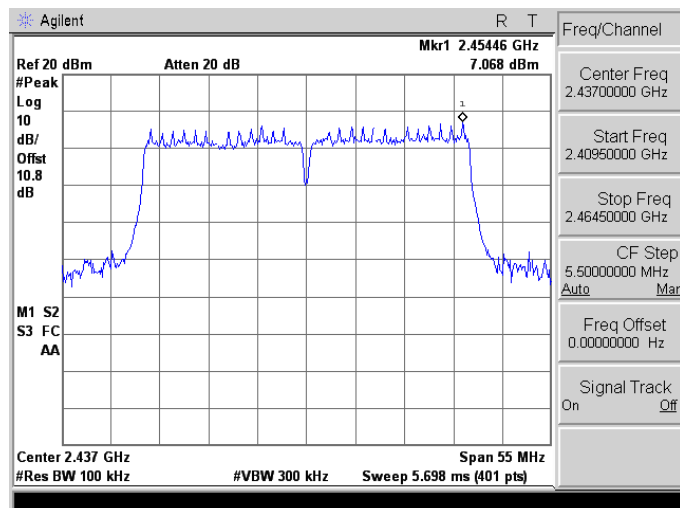


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-2

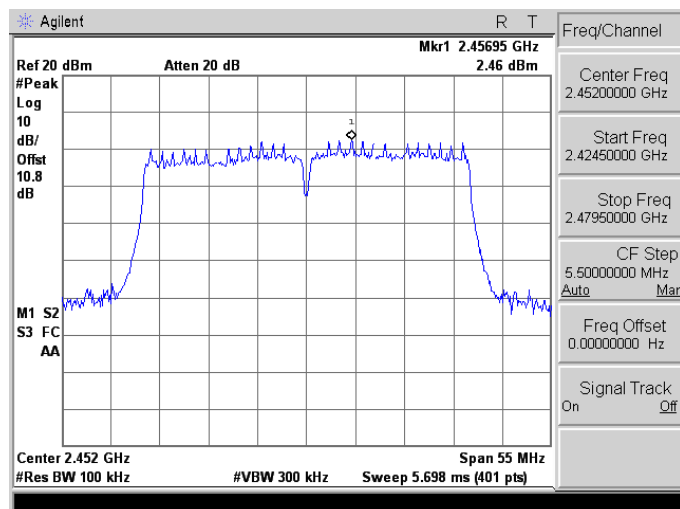
2422 MHz



2437 MHz



2452 MHz

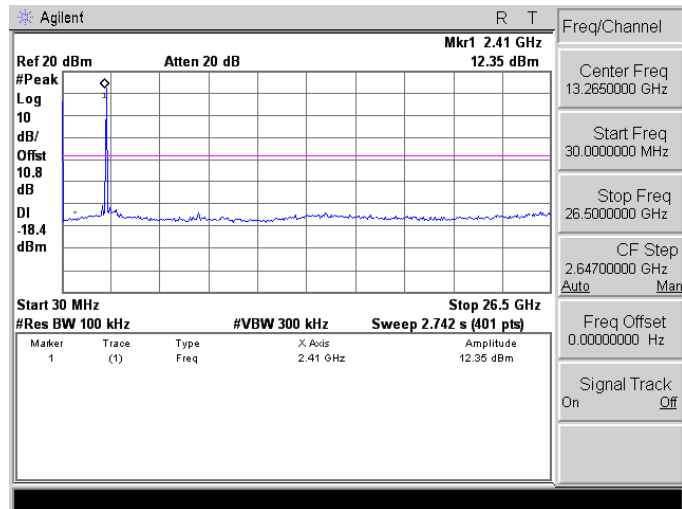




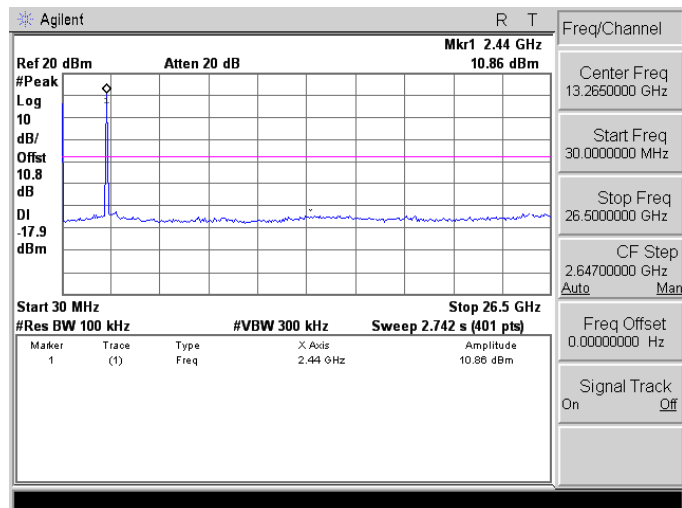
Out of Band Conducted Emissions

Mode 2: IEEE 802.11b Continuous TX mode_ANT-0

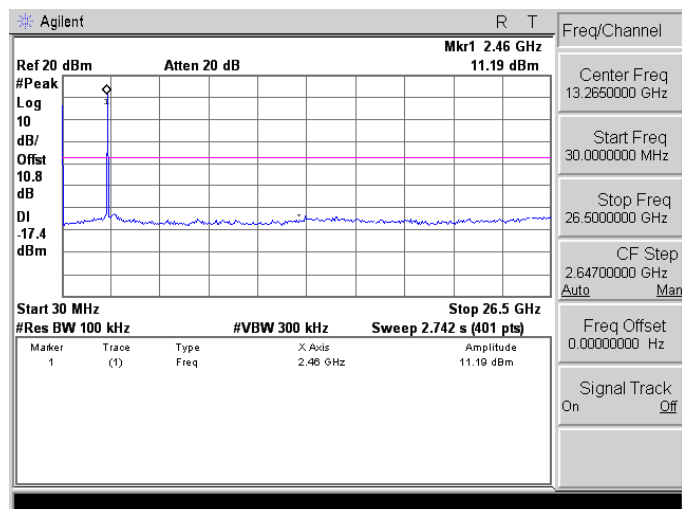
2412 MHz



2437 MHz



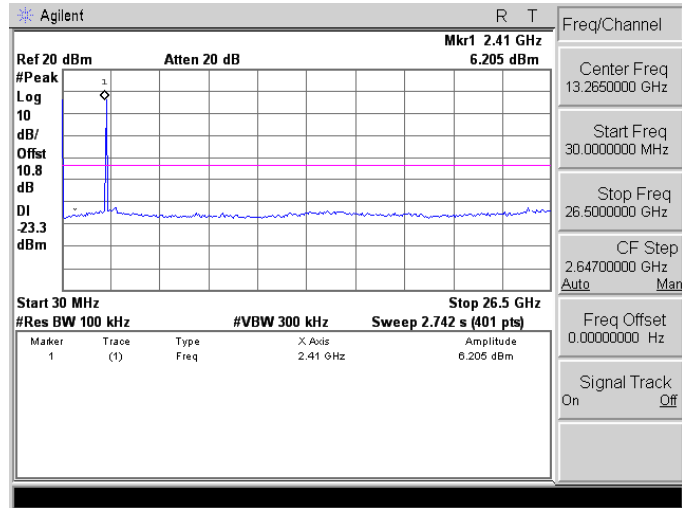
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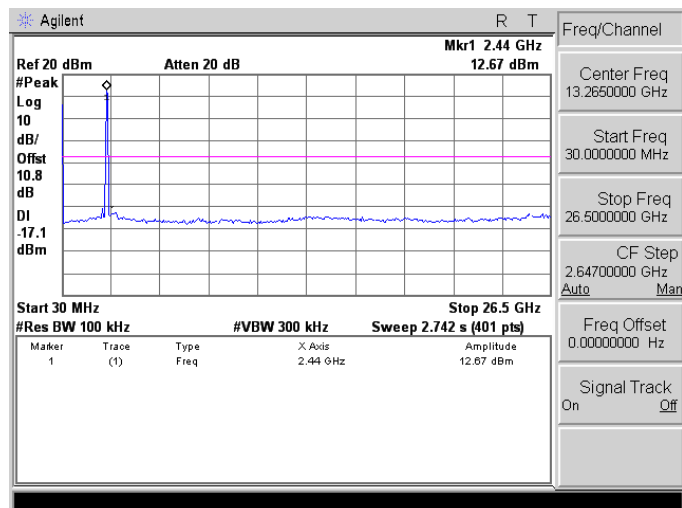


Mode 3: IEEE 802.11g Continuous TX mode_ANT-0

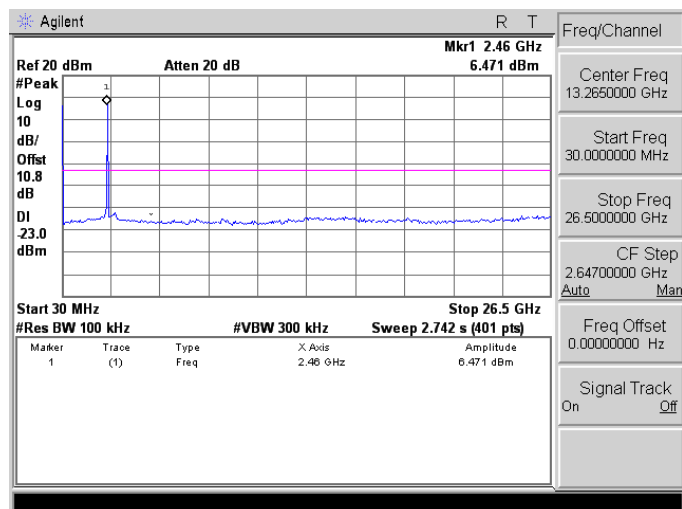
2412 MHz



2437 MHz



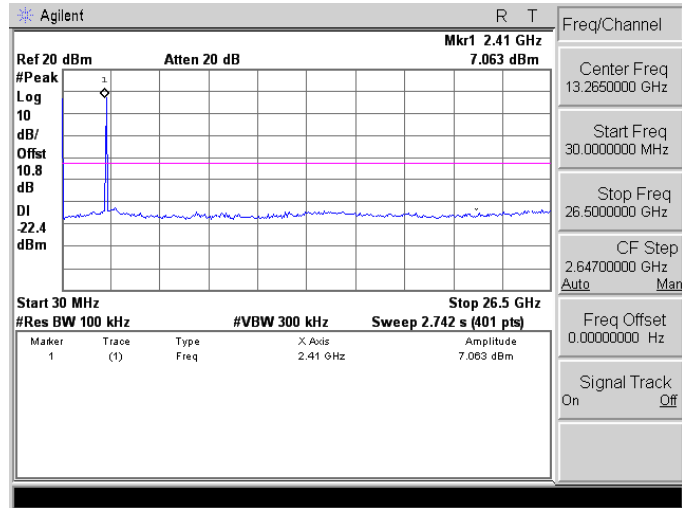
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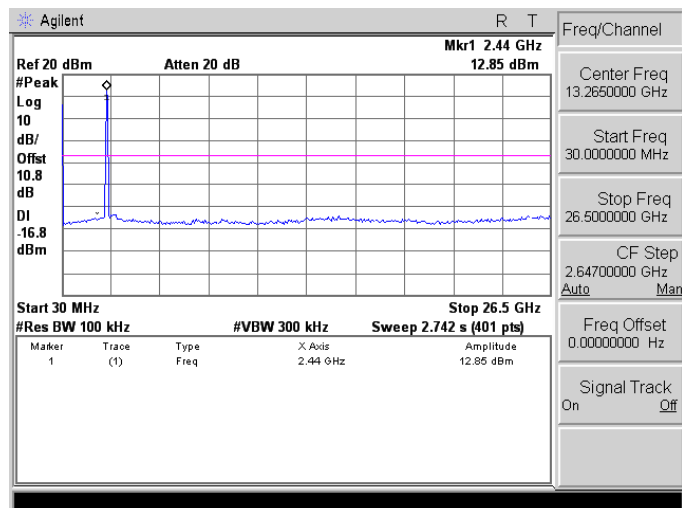


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-0

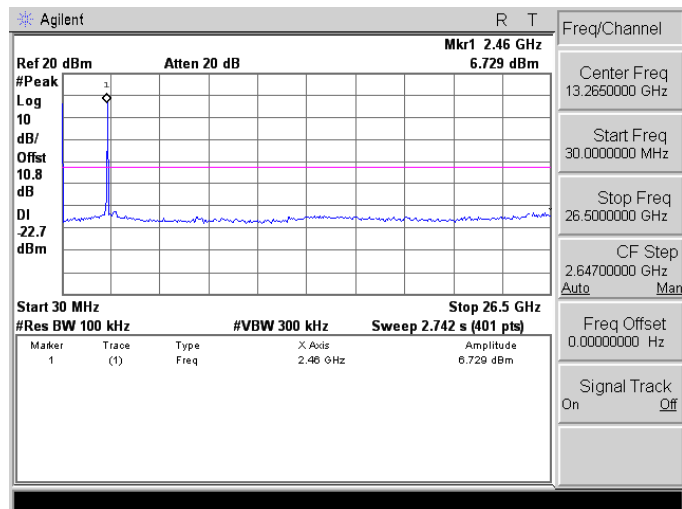
2412 MHz



2437 MHz



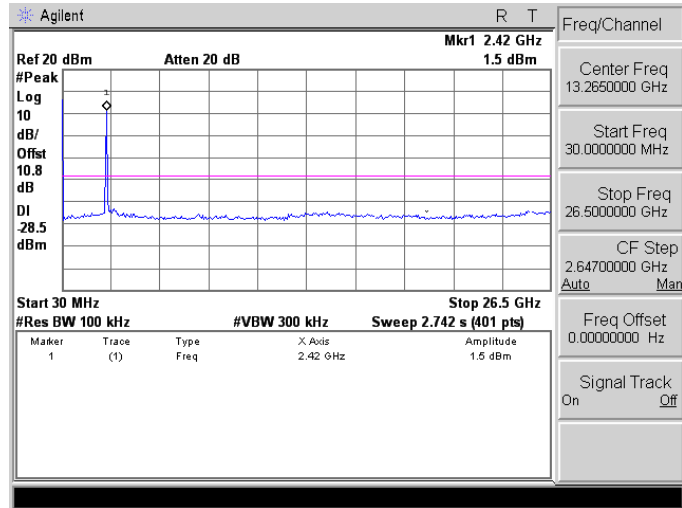
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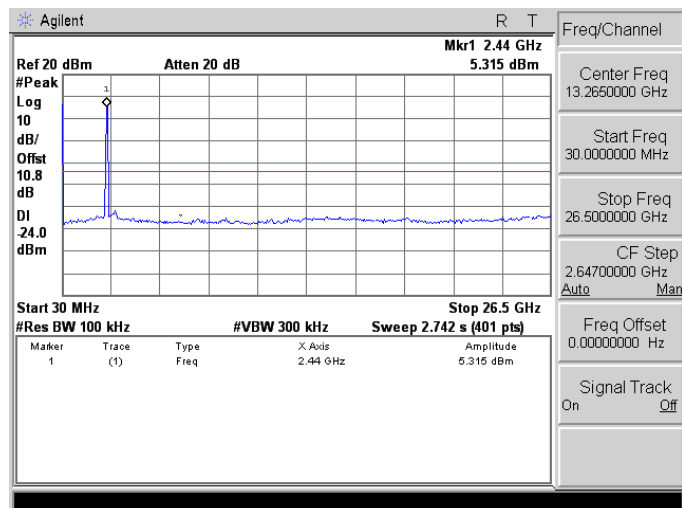


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-0

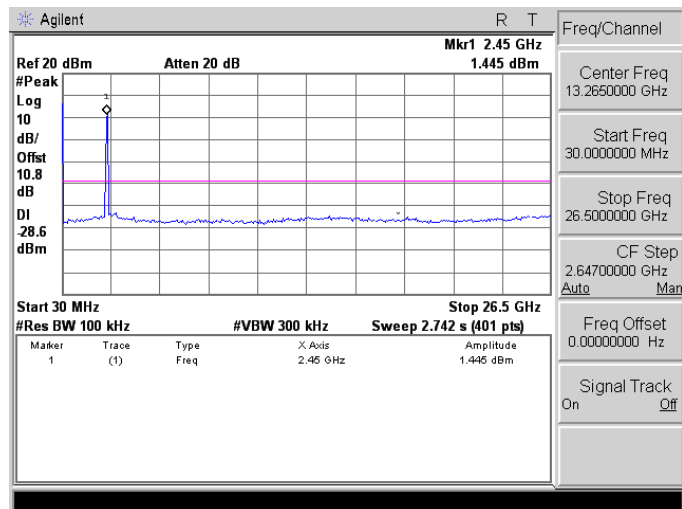
2422 MHz



2437 MHz



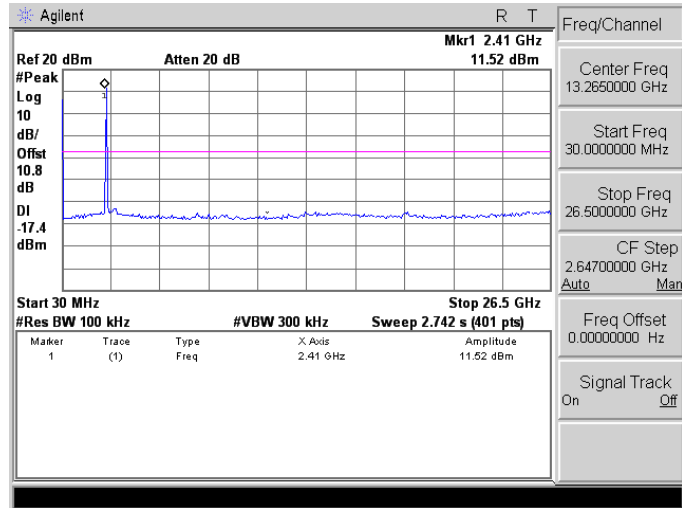
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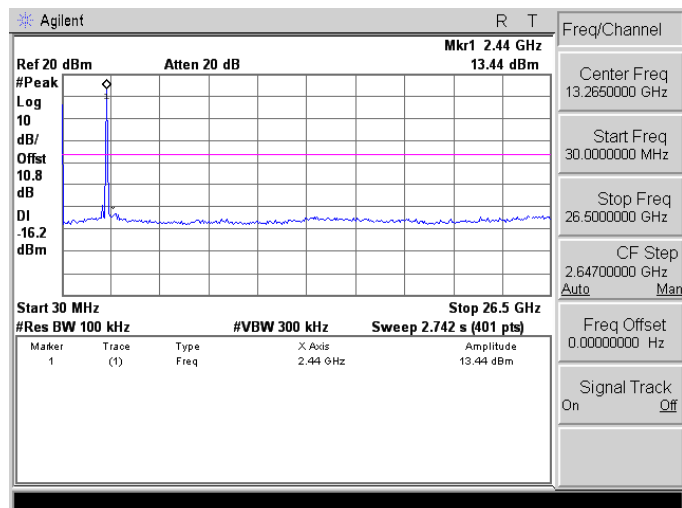


Mode 2: IEEE 802.11b Continuous TX mode_ANT-1

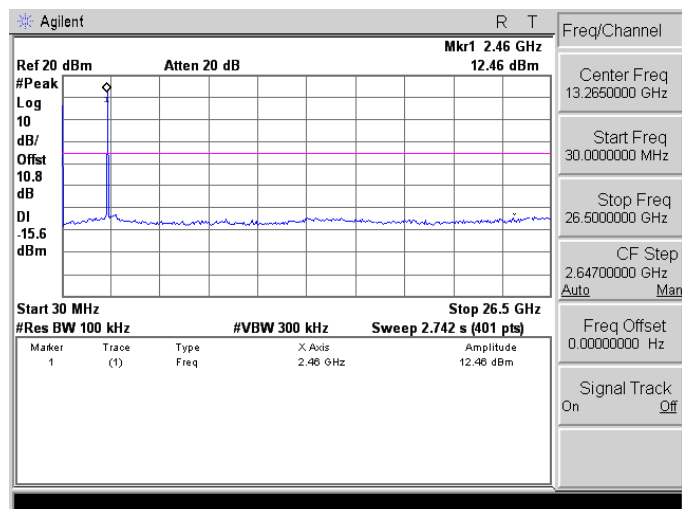
2412 MHz



2437 MHz



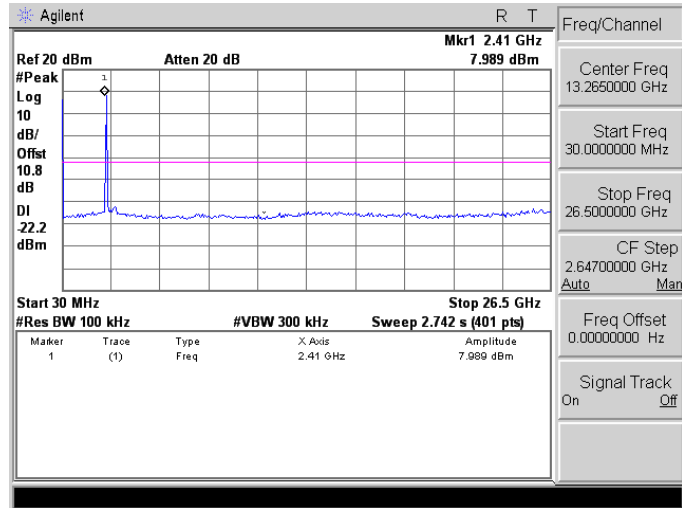
2462 MHz



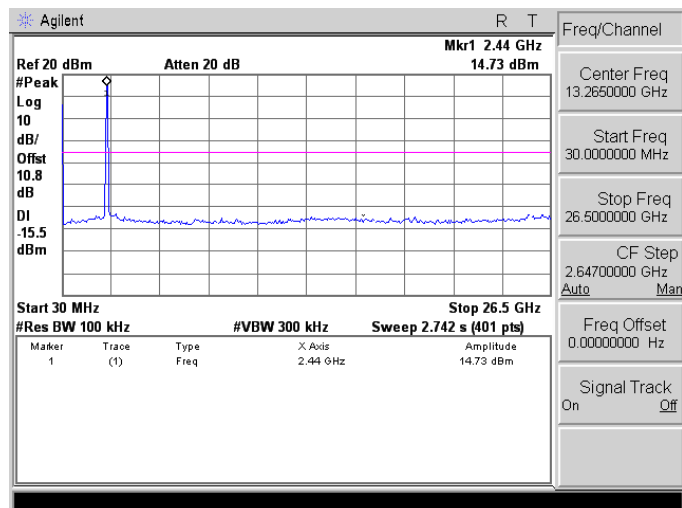


Mode 3: IEEE 802.11g Continuous TX mode_ANT-1

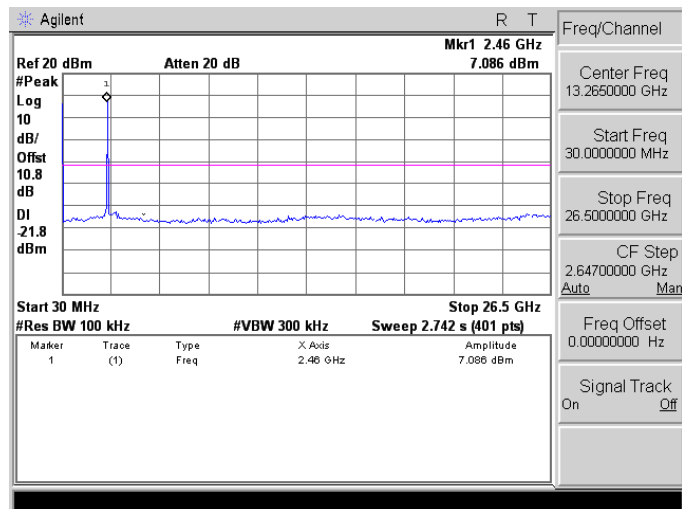
2412 MHz



2437 MHz



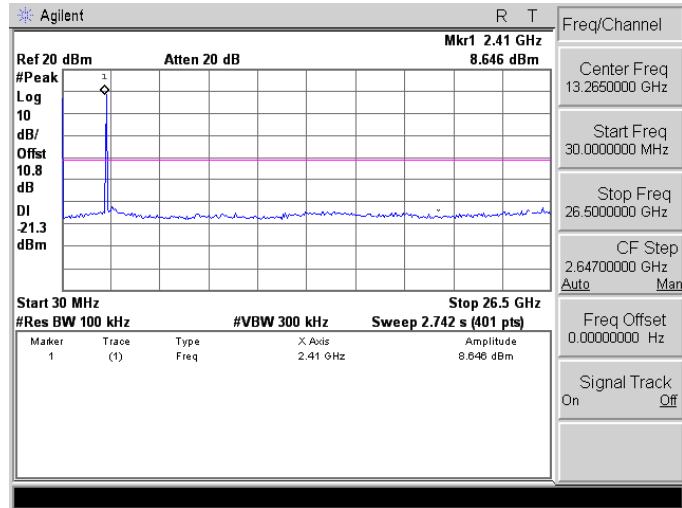
2462 MHz



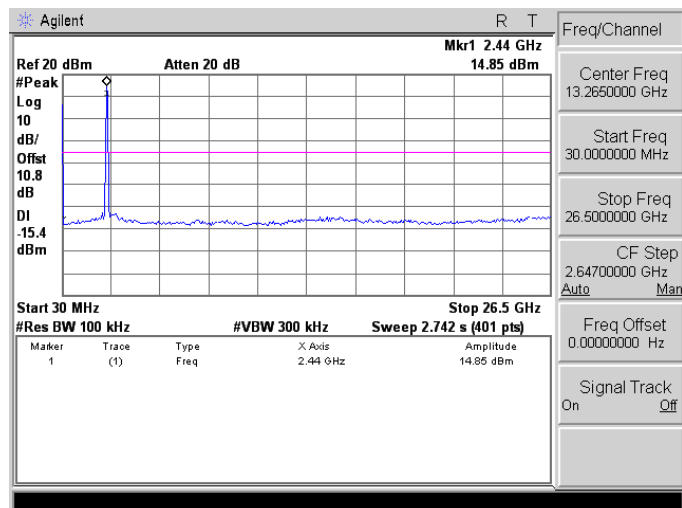


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-1

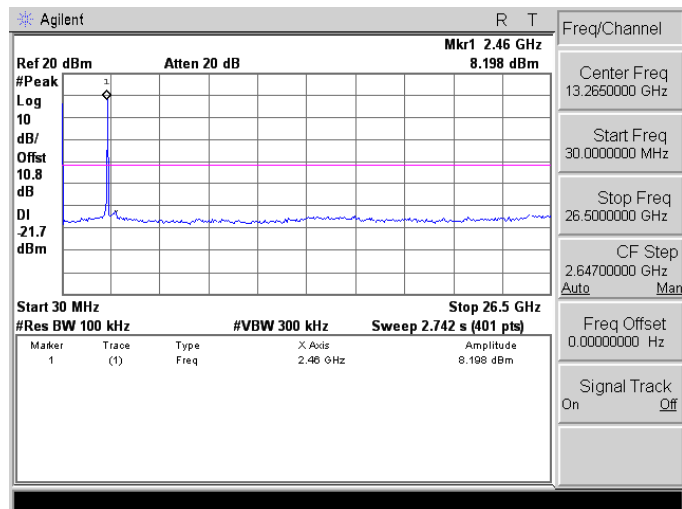
2412 MHz



2437 MHz



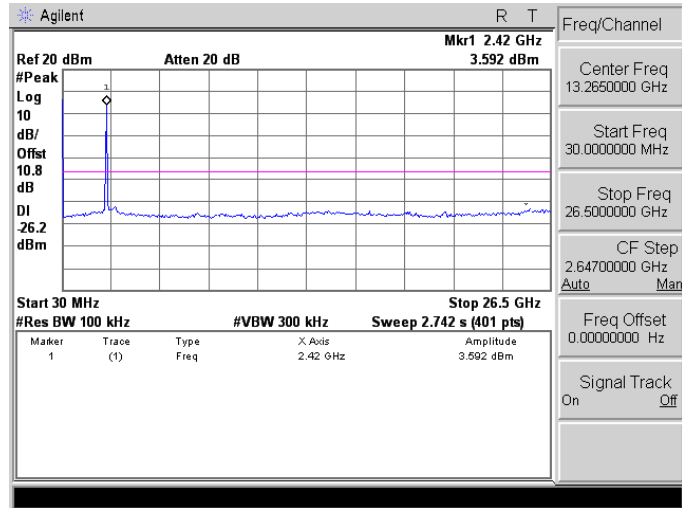
2462 MHz



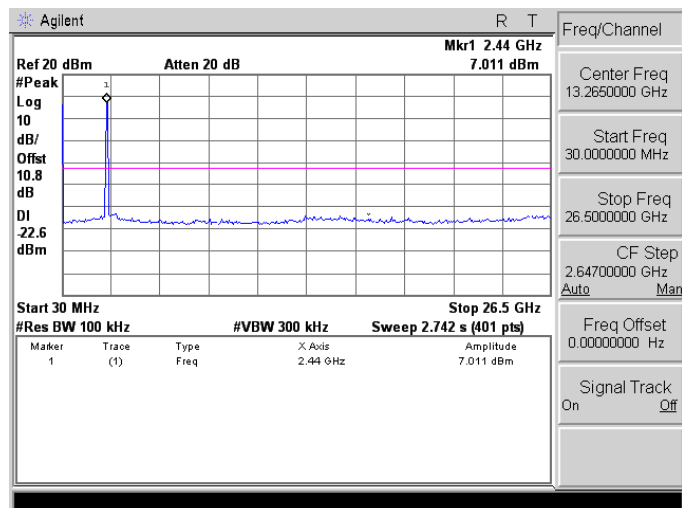


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-1

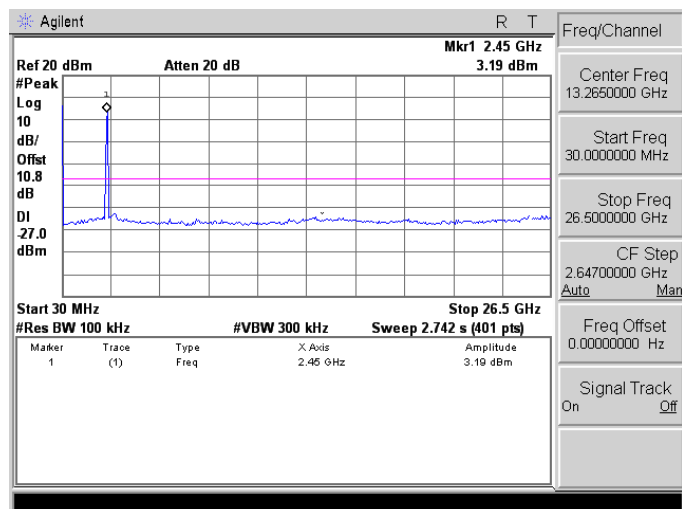
2422 MHz



2437 MHz



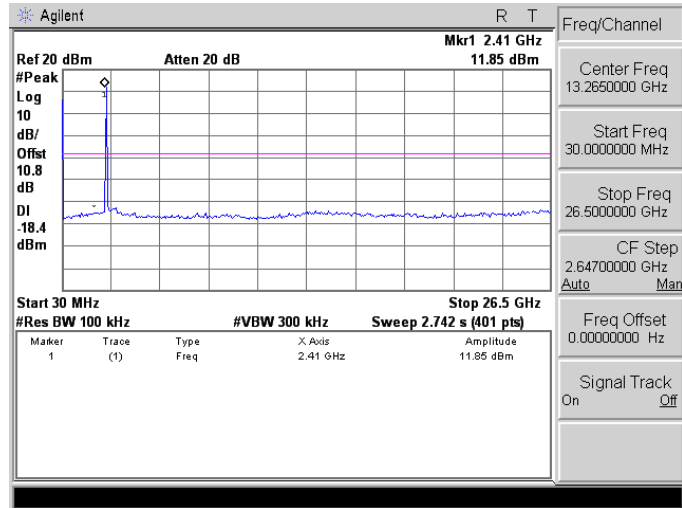
2452 MHz



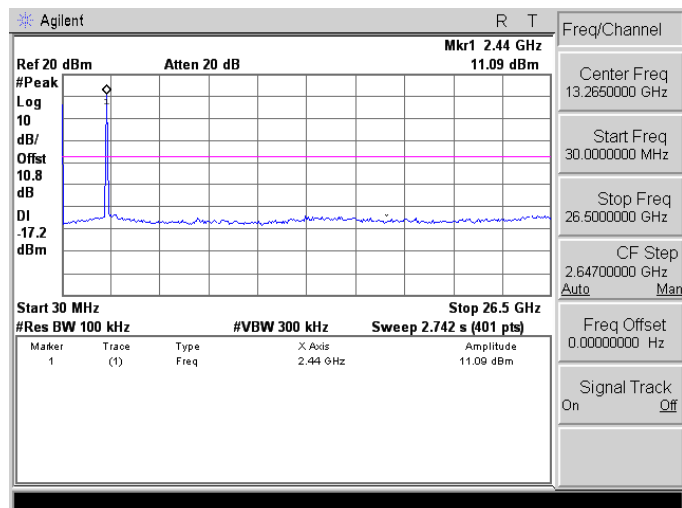


Mode 2: IEEE 802.11b Continuous TX mode_ANT-2

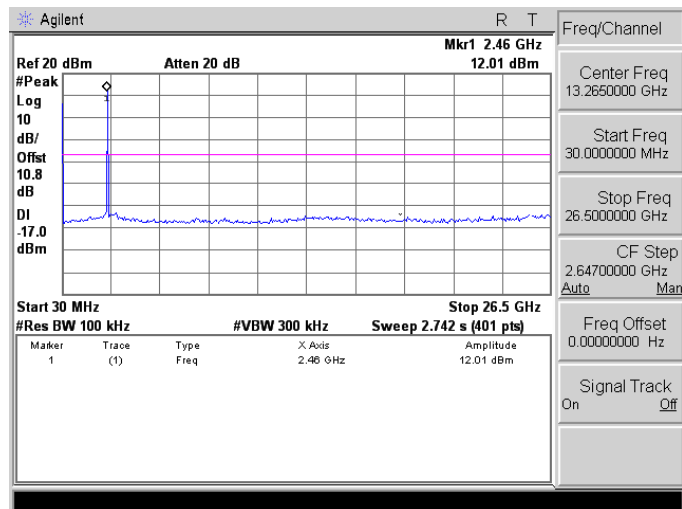
2412 MHz



2437 MHz



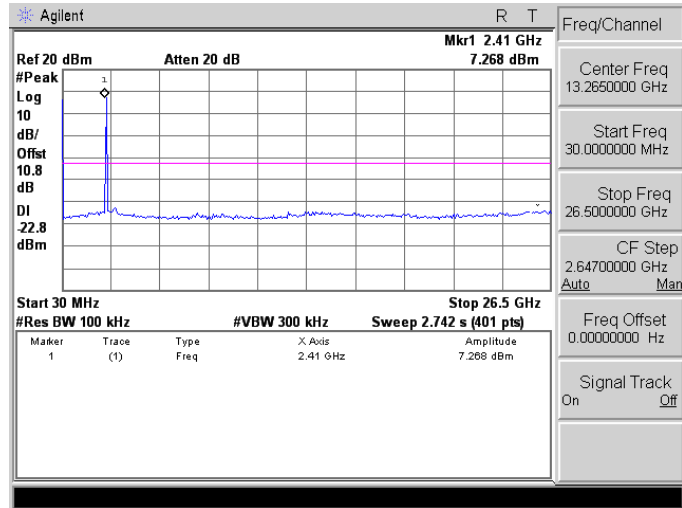
2462 MHz



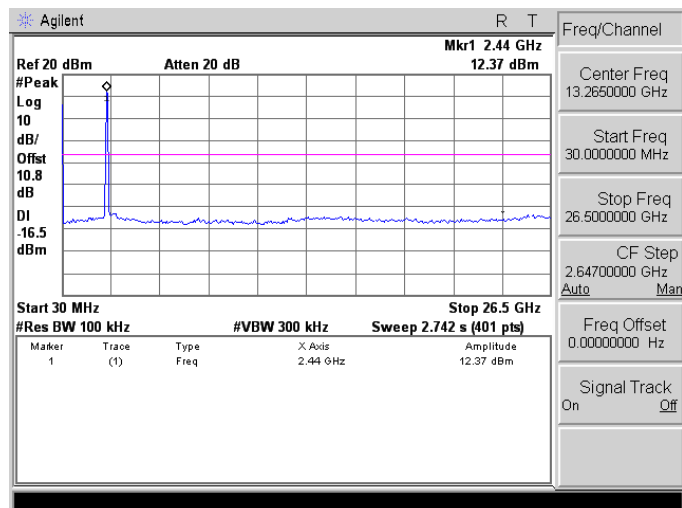


Mode 3: IEEE 802.11g Continuous TX mode_ANT-2

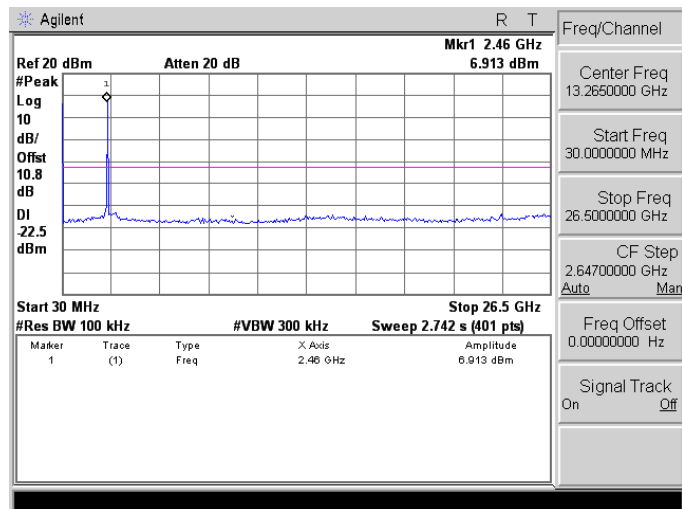
2412 MHz



2437 MHz



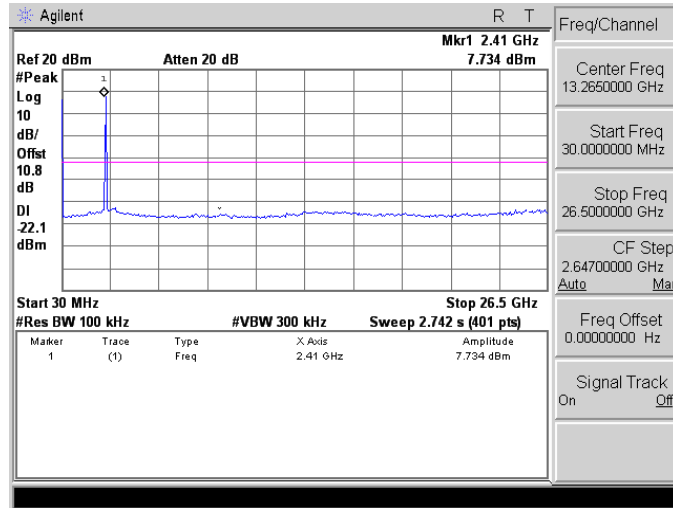
2462 MHz



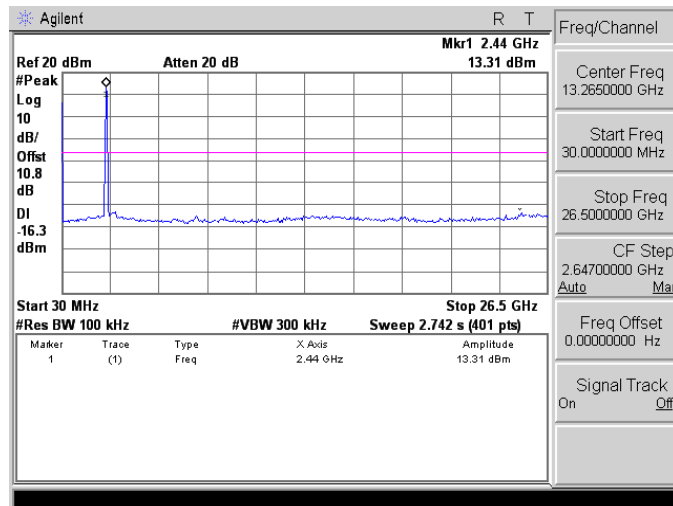


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-2

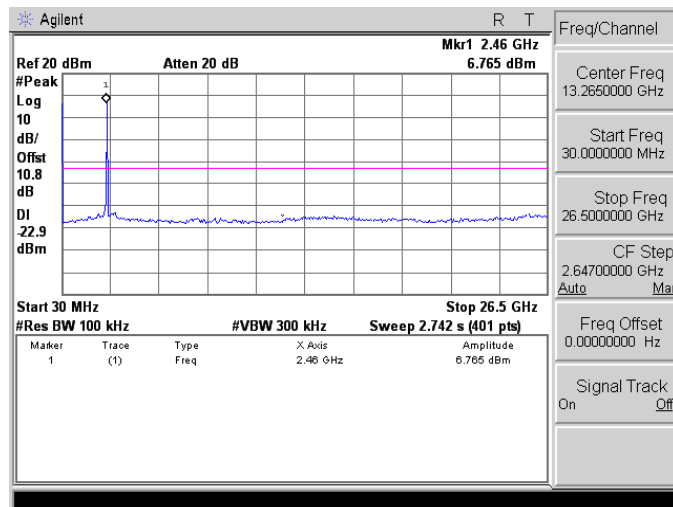
2412 MHz



2437 MHz



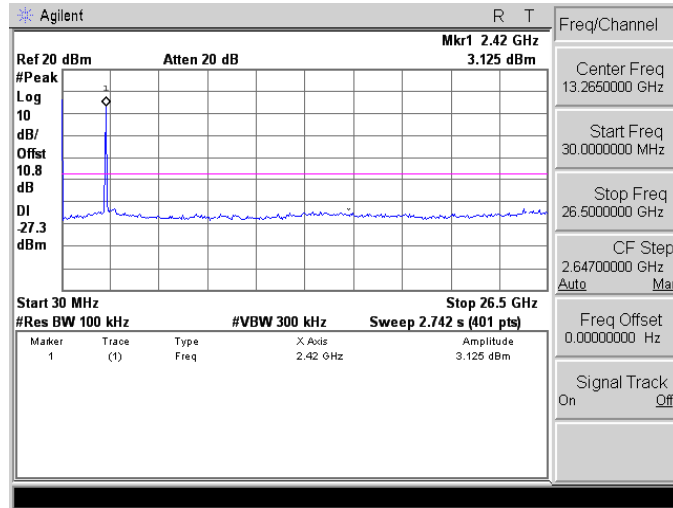
2462 MHz



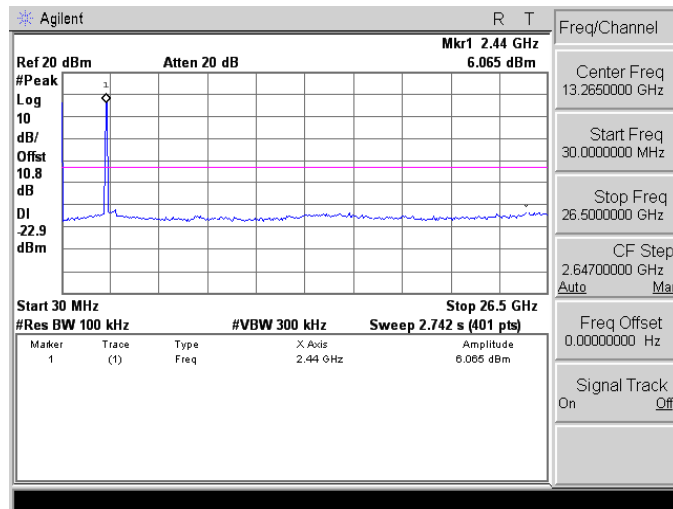


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-2

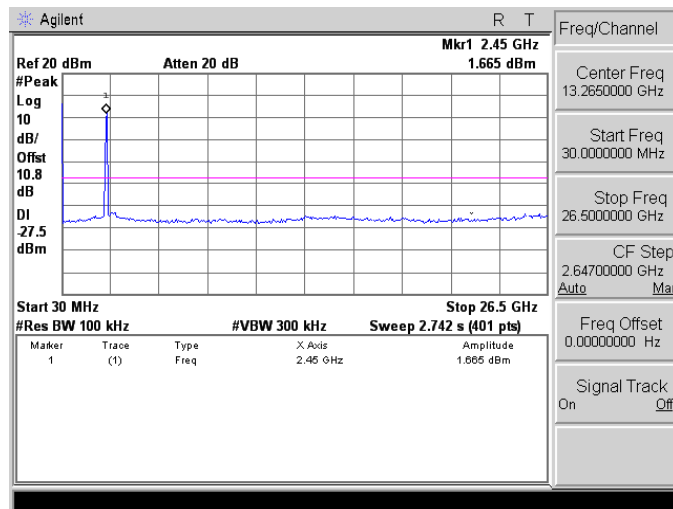
2422 MHz



2437 MHz



2452 MHz

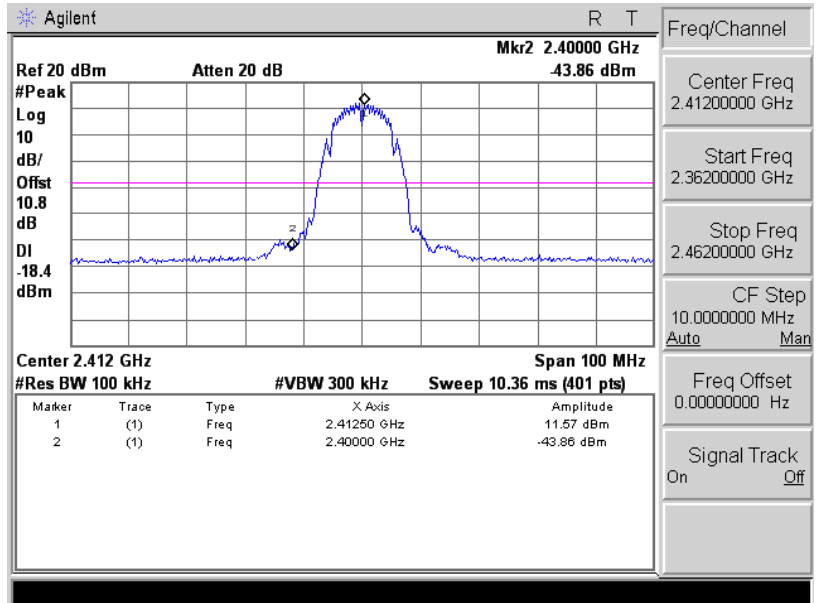




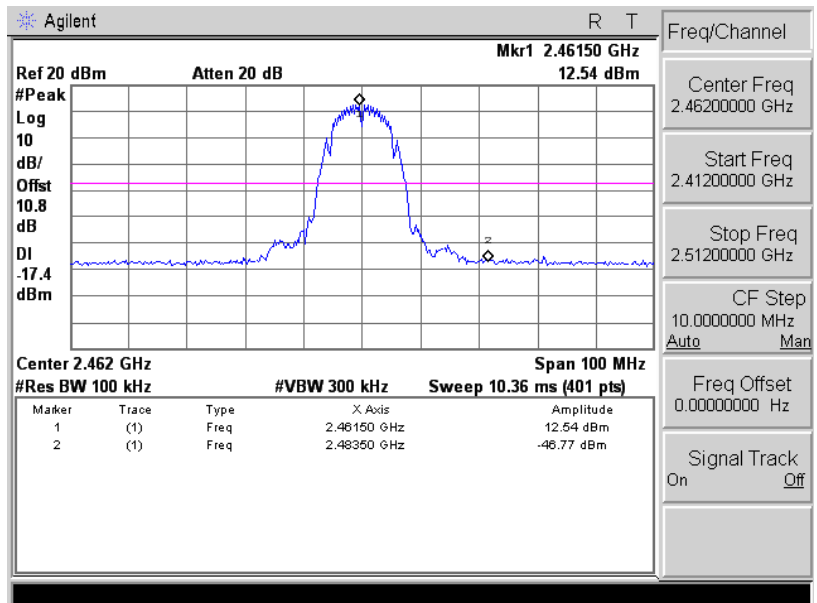
Conducted Band Edge

Mode 2: IEEE 802.11b Continuous TX mode_ANT-0

2412 MHz



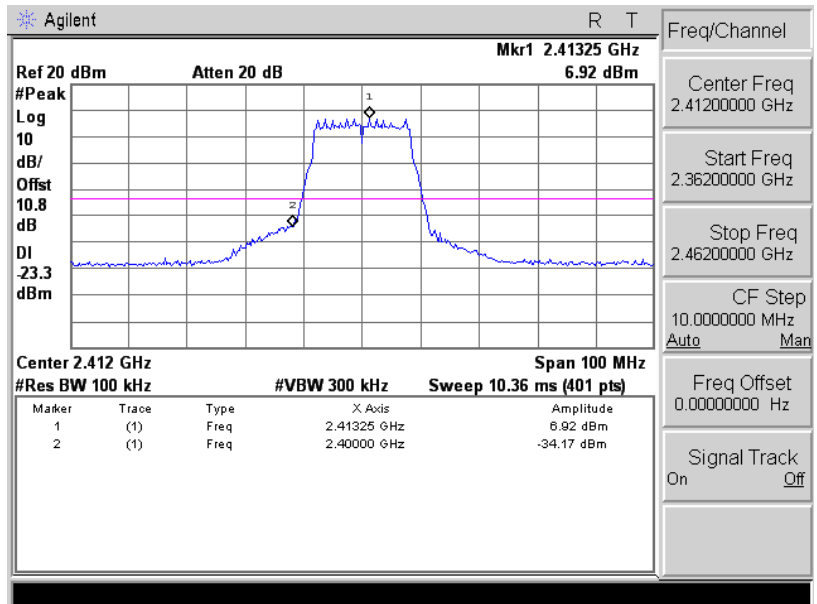
2462 MHz



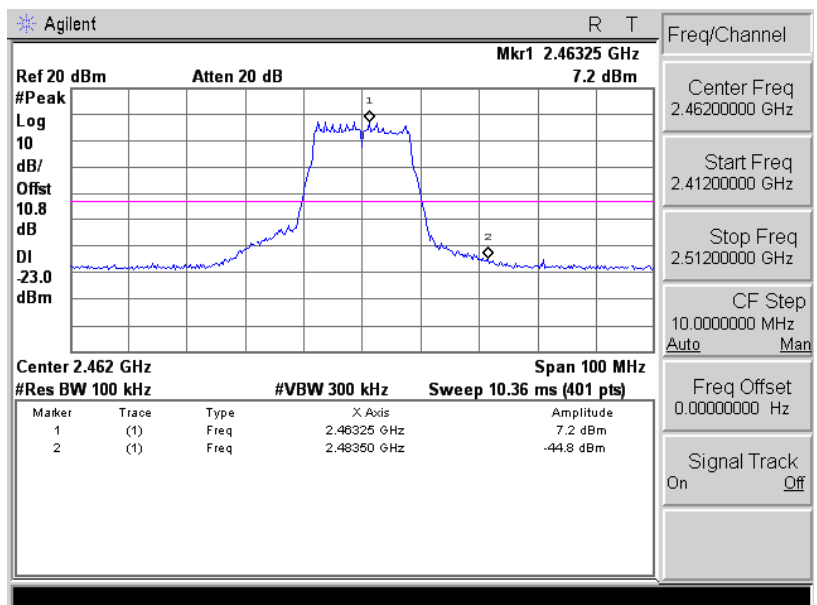


Mode 3: IEEE 802.11g Continuous TX mode_ANT-0

2412 MHz



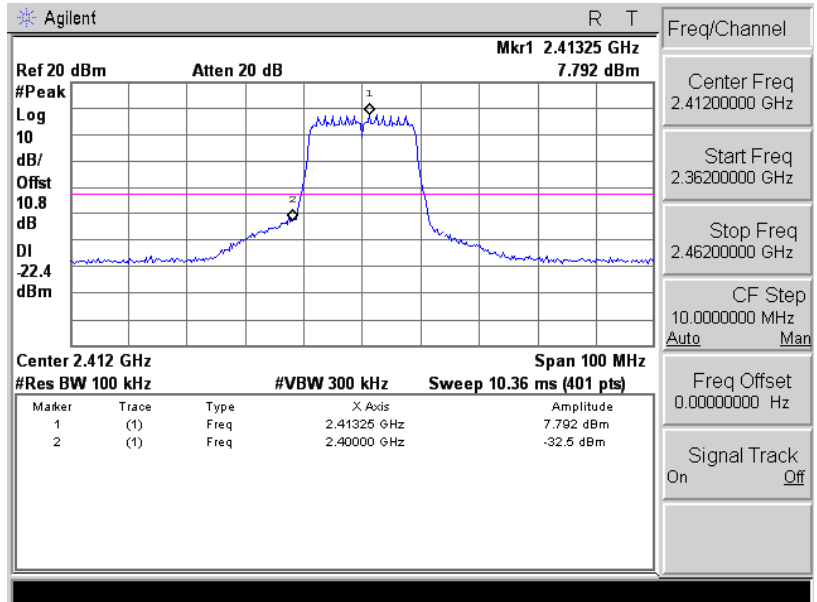
2462 MHz



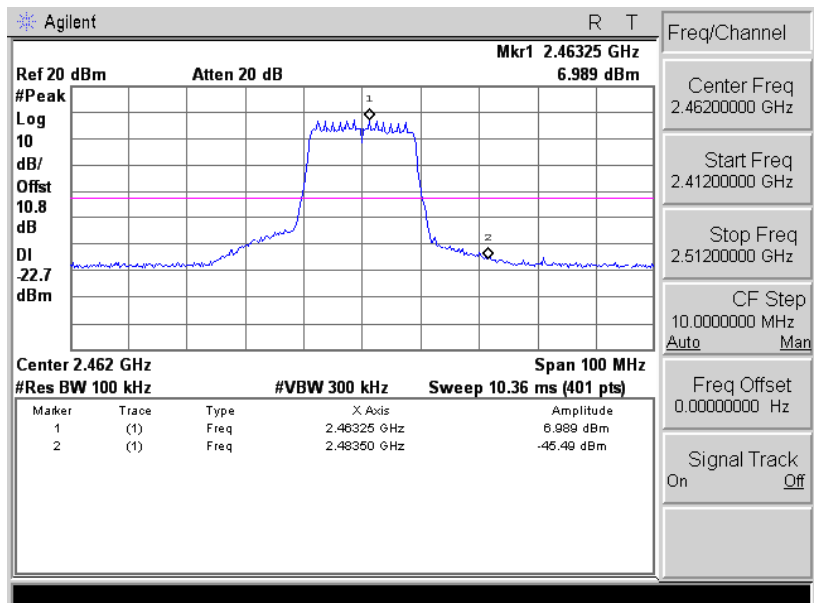


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-0

2412 MHz



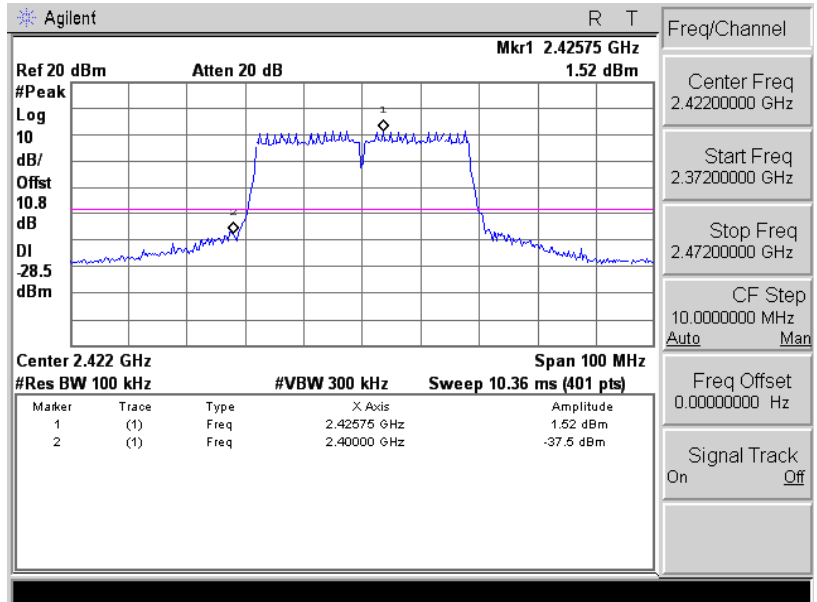
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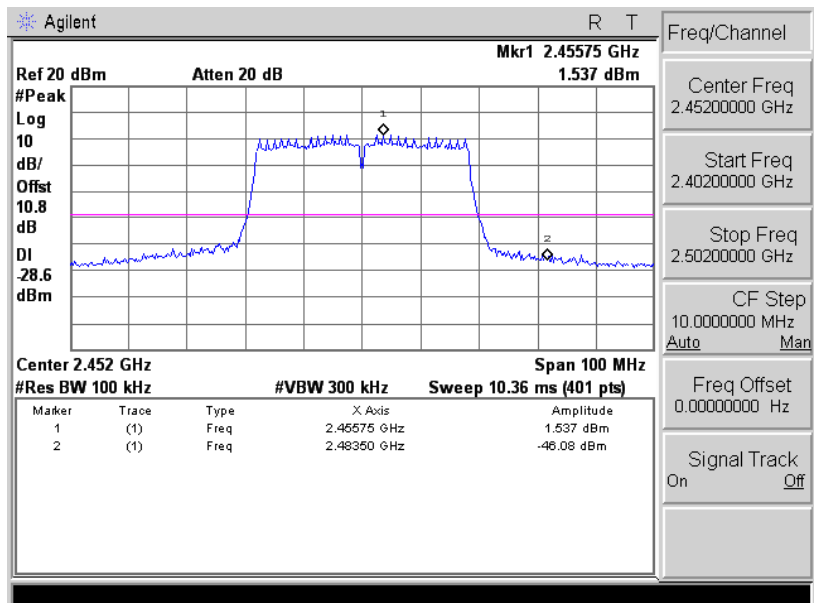


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-0

2422 MHz



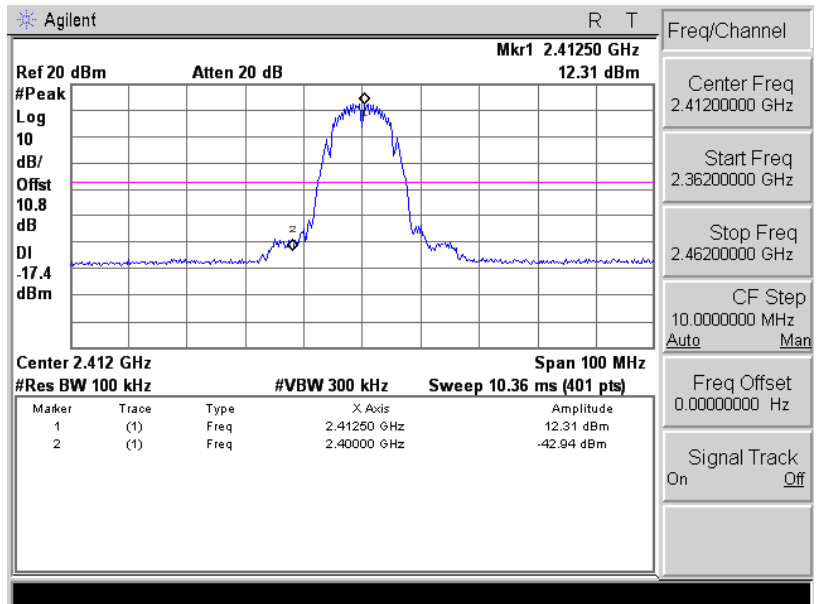
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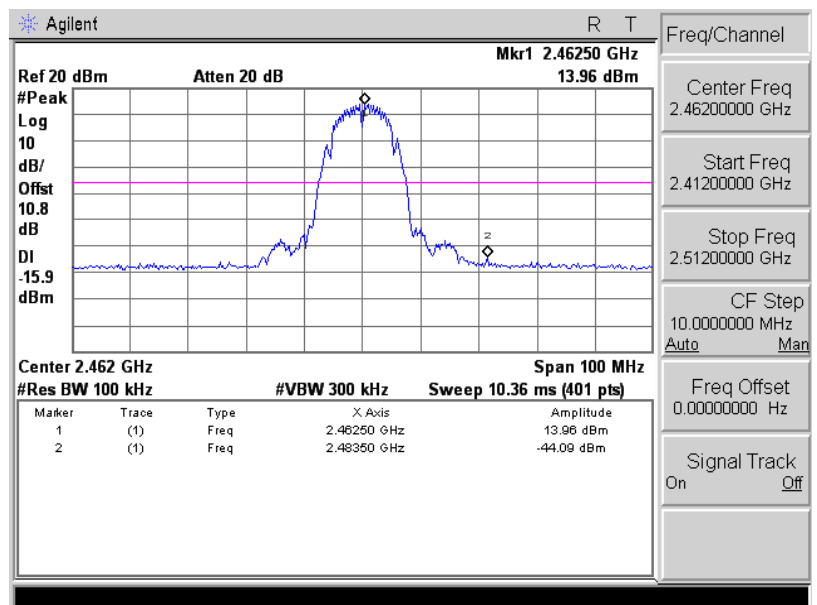


Mode 2: IEEE 802.11b Continuous TX mode_ANT-1

2412 MHz



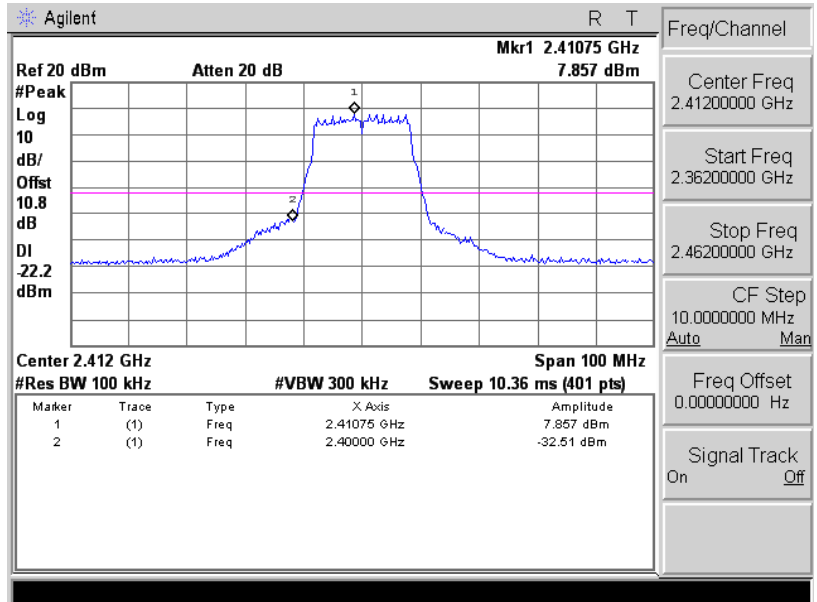
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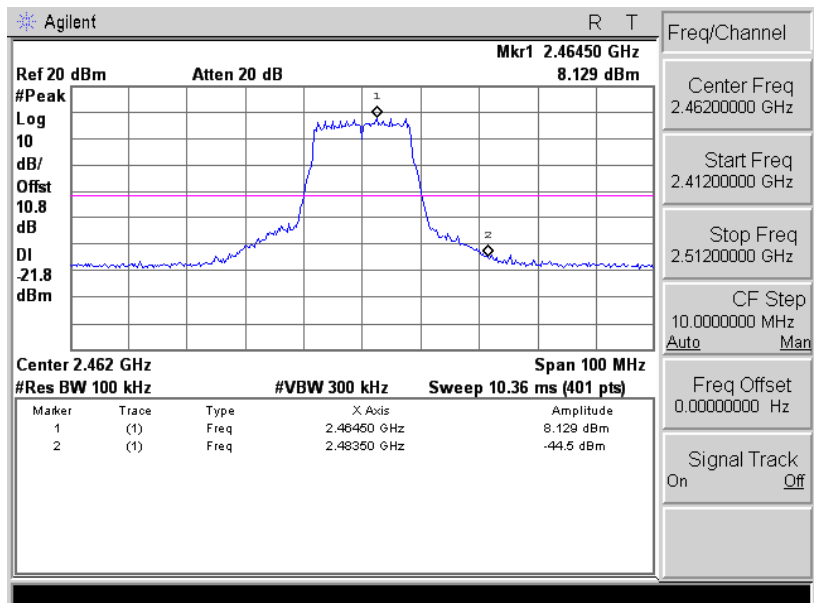


Mode 3: IEEE 802.11g Continuous TX mode_ANT-1

2412 MHz



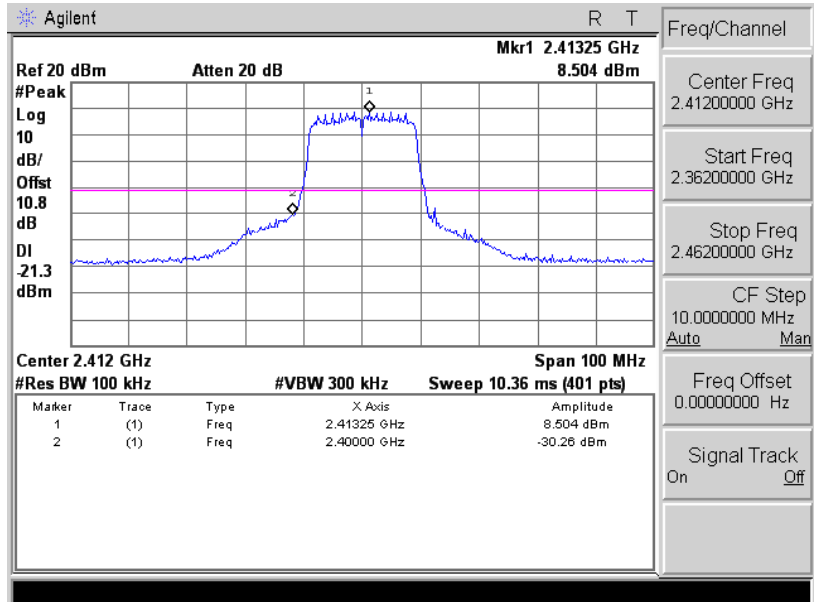
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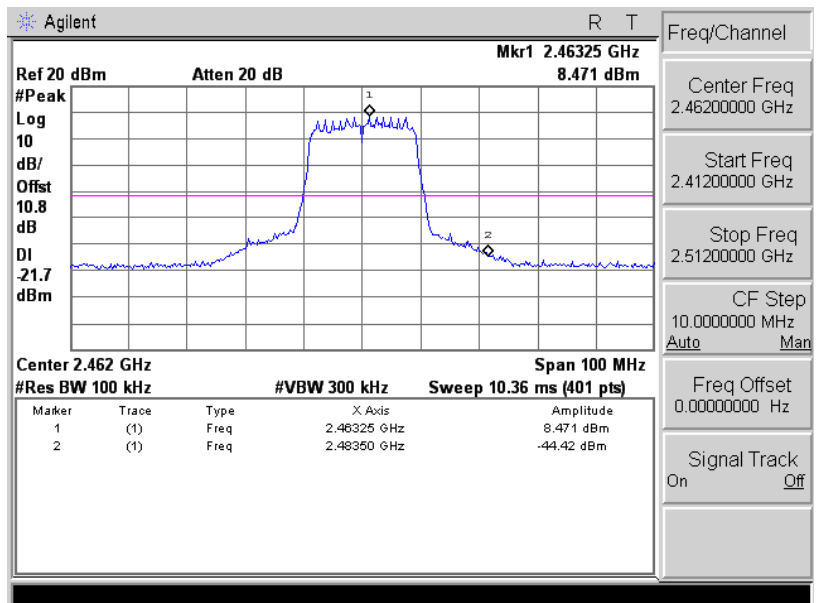


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-1

2412 MHz



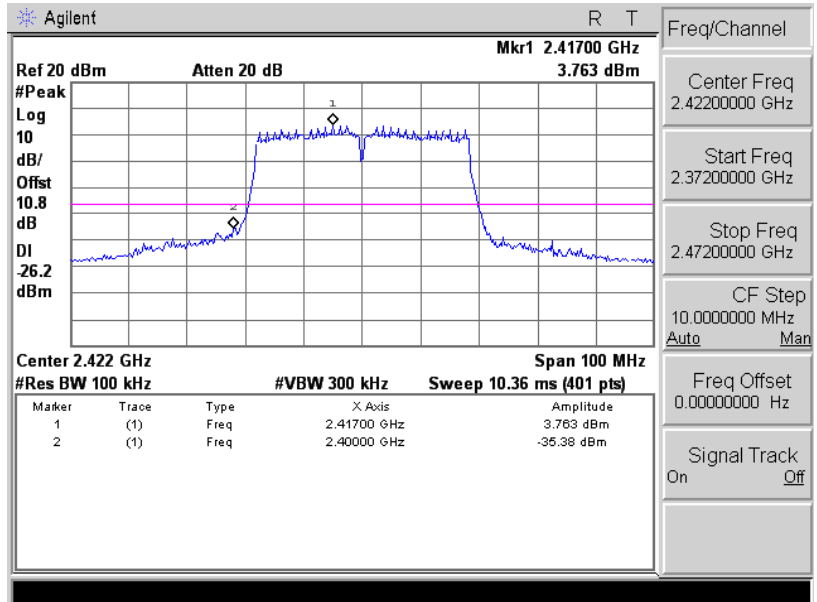
2462 MHz



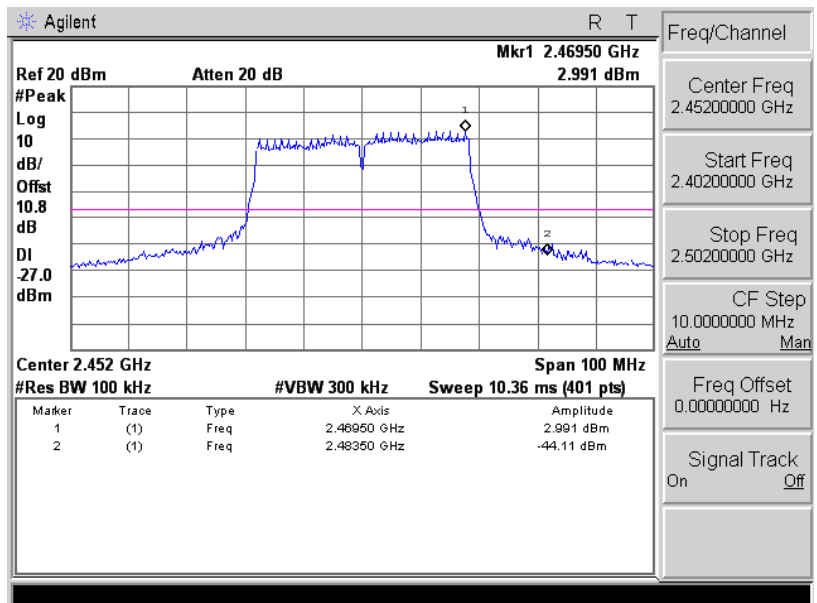


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-1

2422 MHz



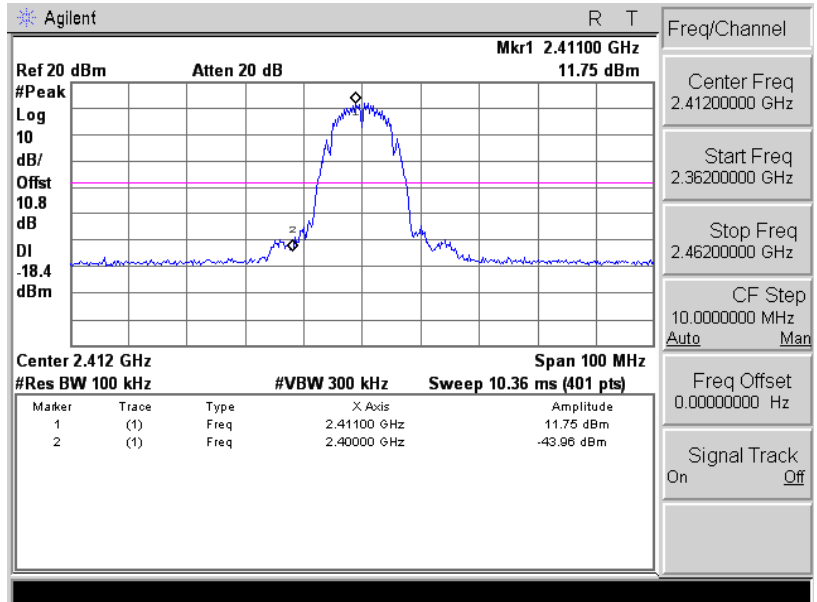
2452 MHz



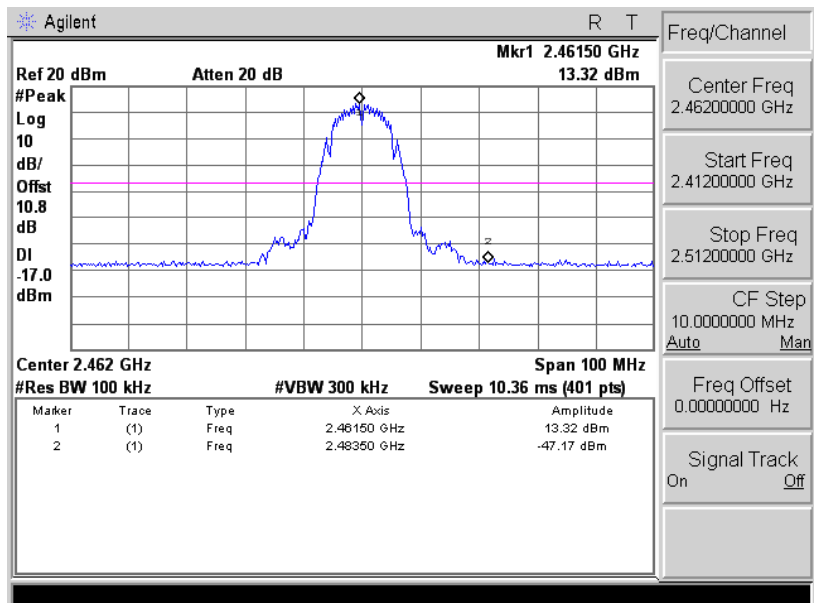


Mode 2: IEEE 802.11b Continuous TX mode_ANT-2

2412 MHz



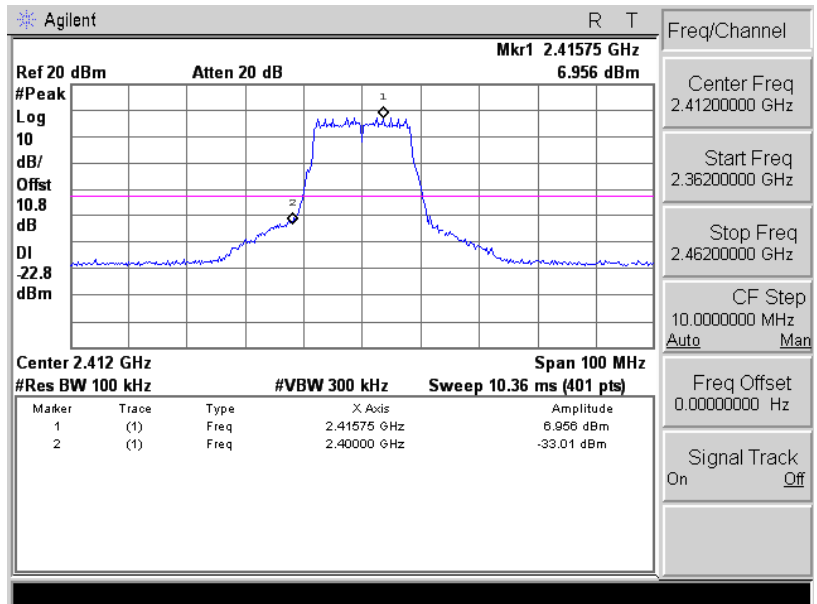
2462 MHz



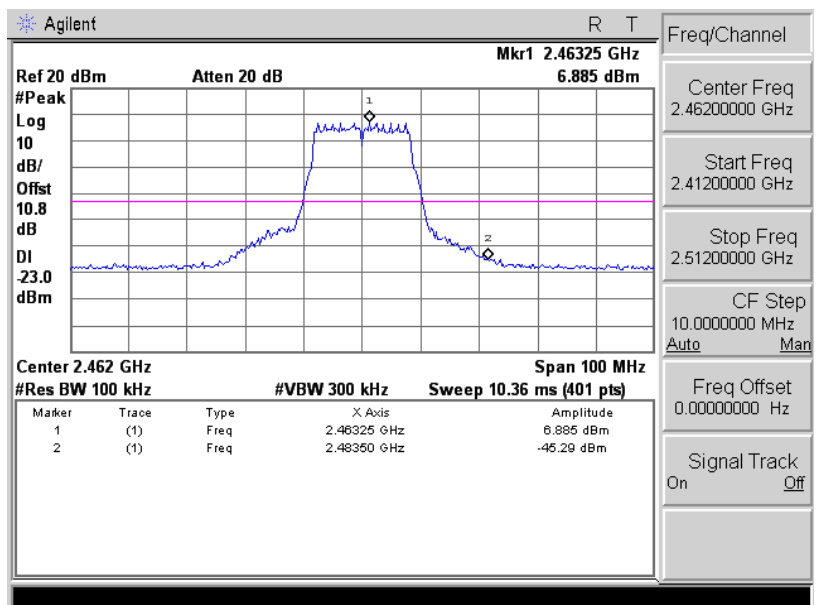


Mode 3: IEEE 802.11g Continuous TX mode_ANT-2

2412 MHz



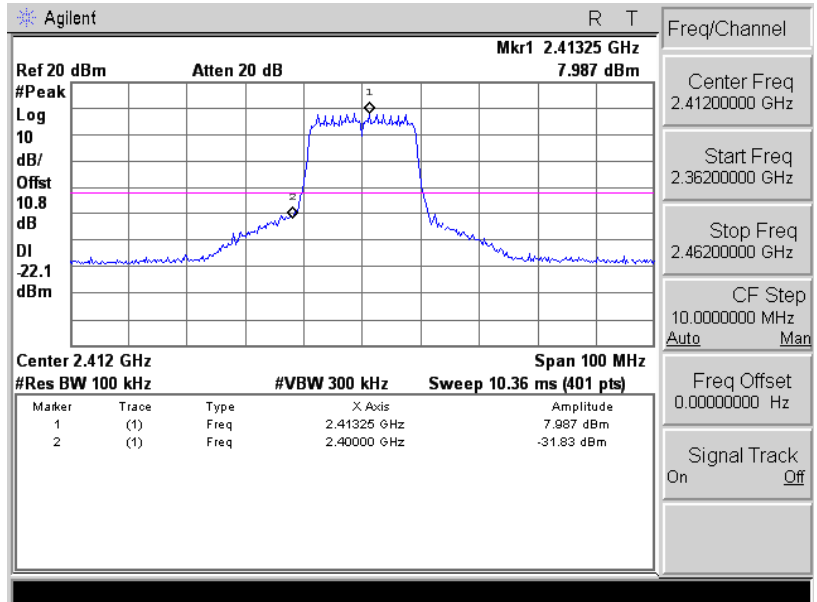
2462 MHz



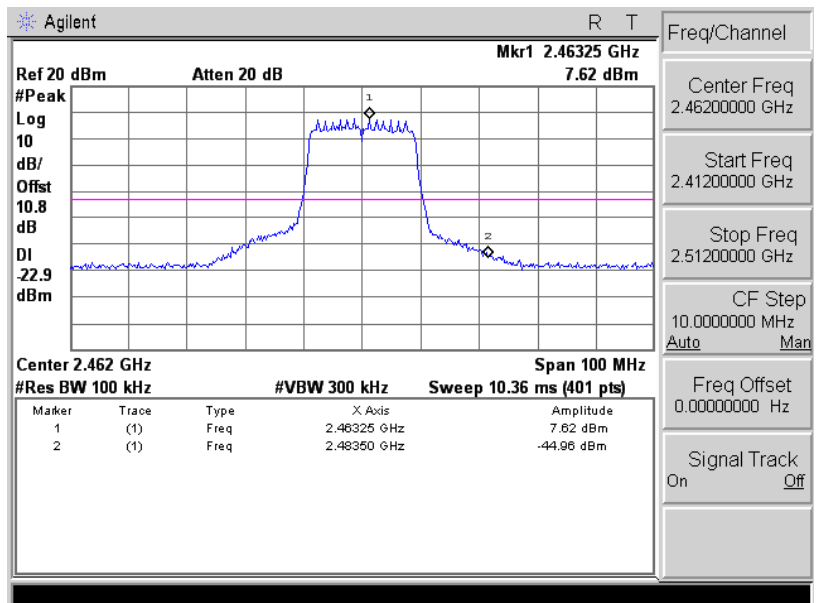


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-2

2412 MHz



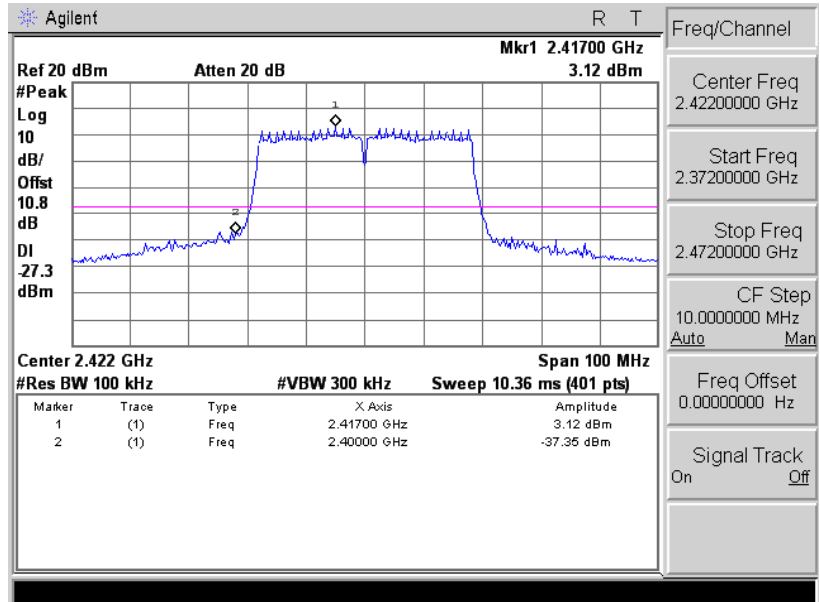
2462 MHz



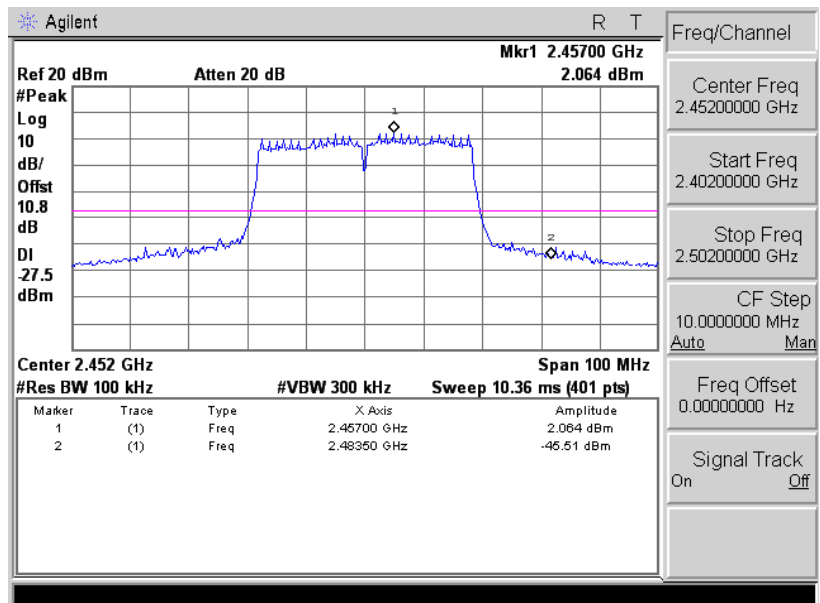


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-2

2422 MHz



2452 MHz



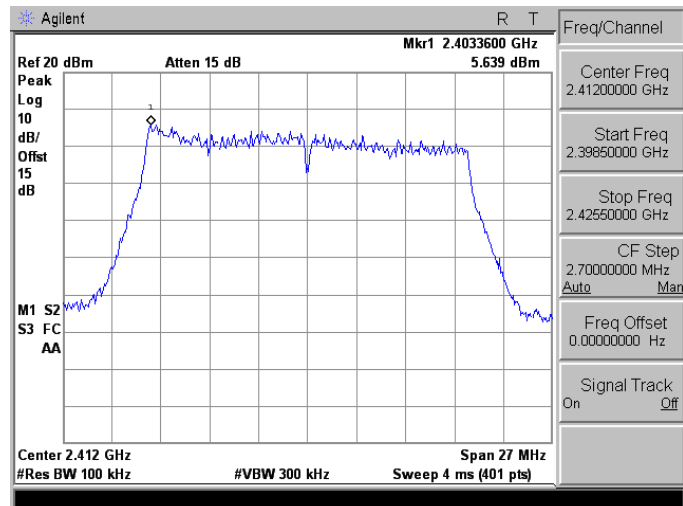


Reference level

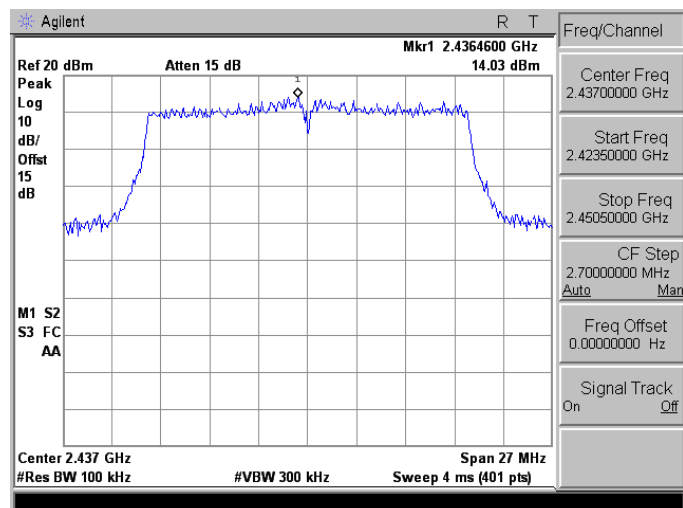
Beamforming on

Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-0

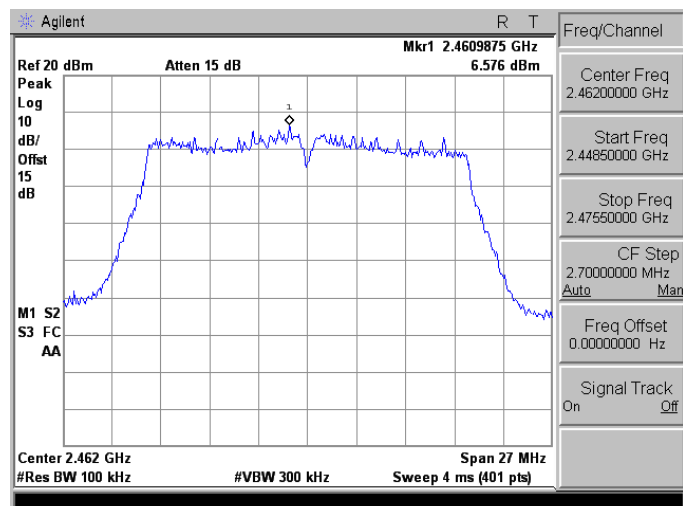
2412 MHz



2437 MHz



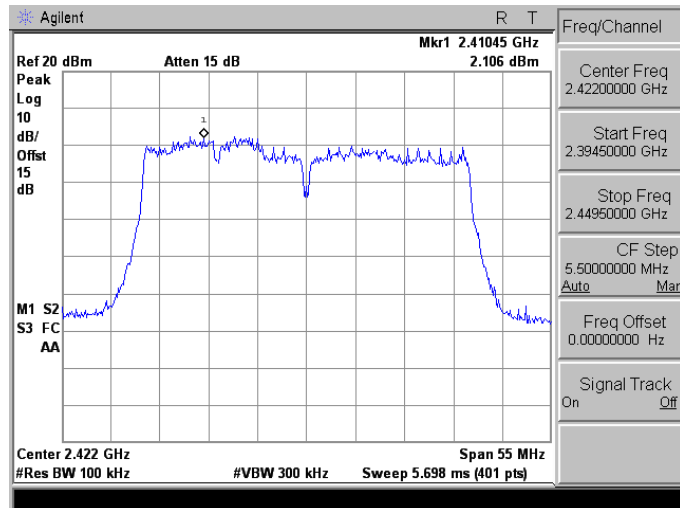
2462 MHz



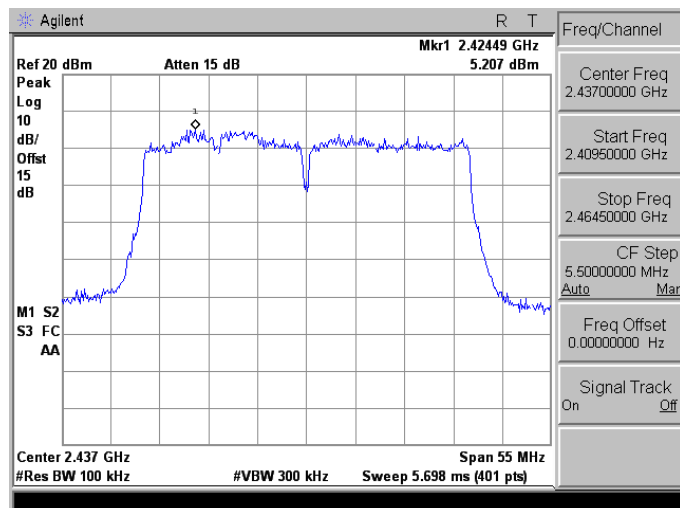


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-0

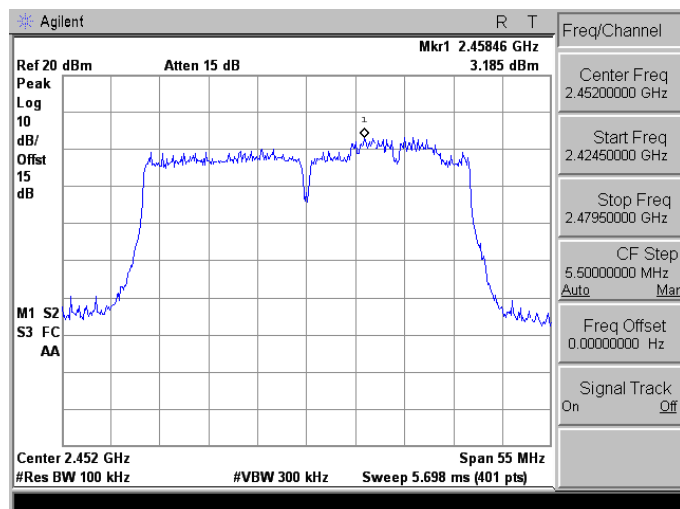
2422 MHz



2437 MHz



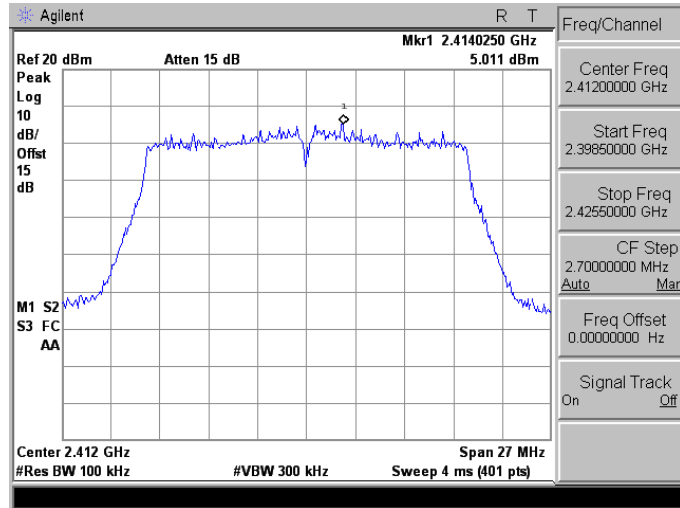
2452 MHz



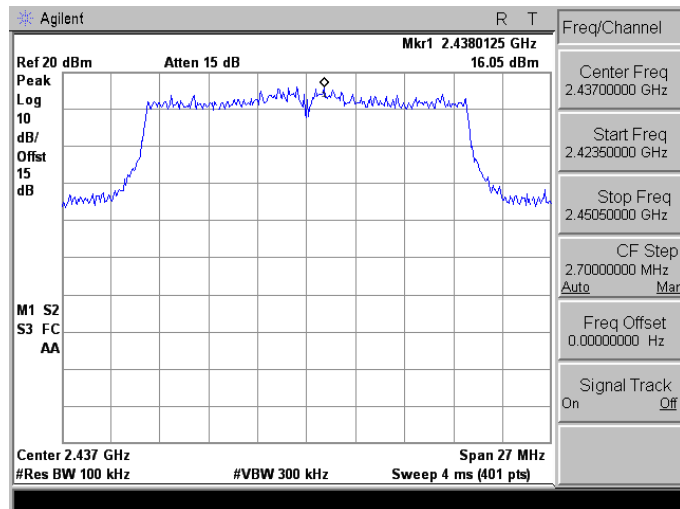


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-1

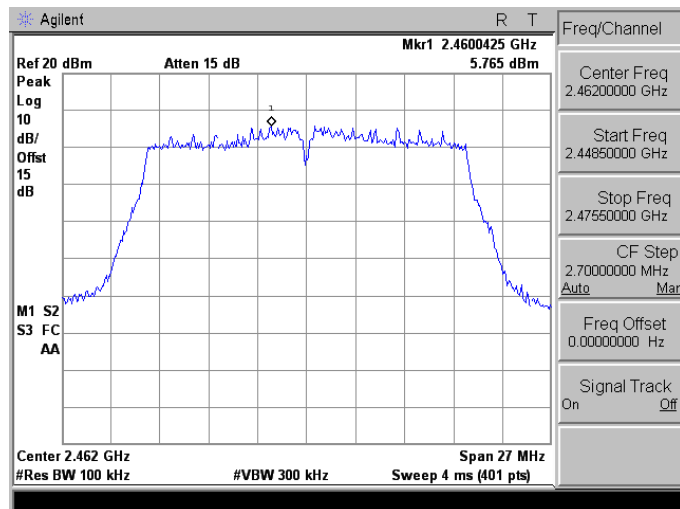
2412 MHz



2437 MHz



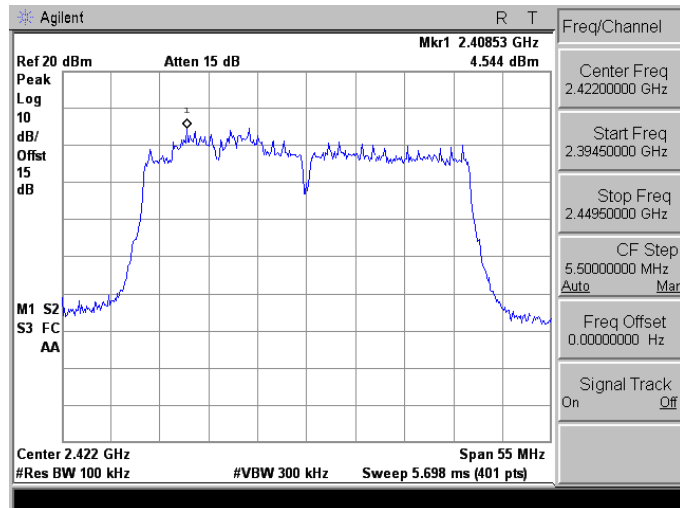
2462 MHz



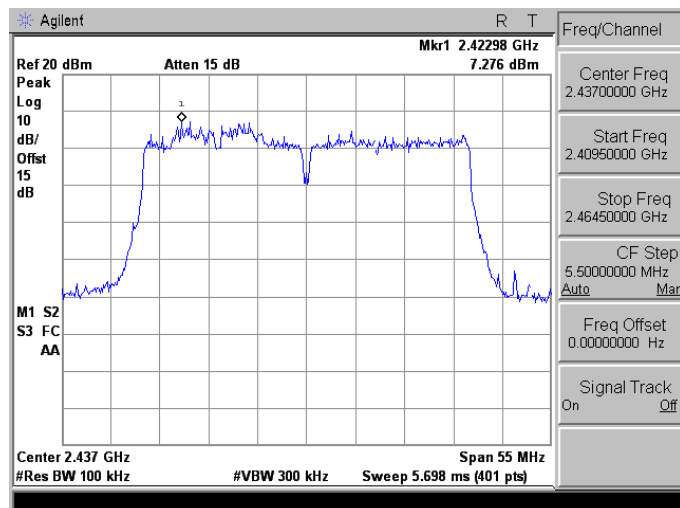


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-1

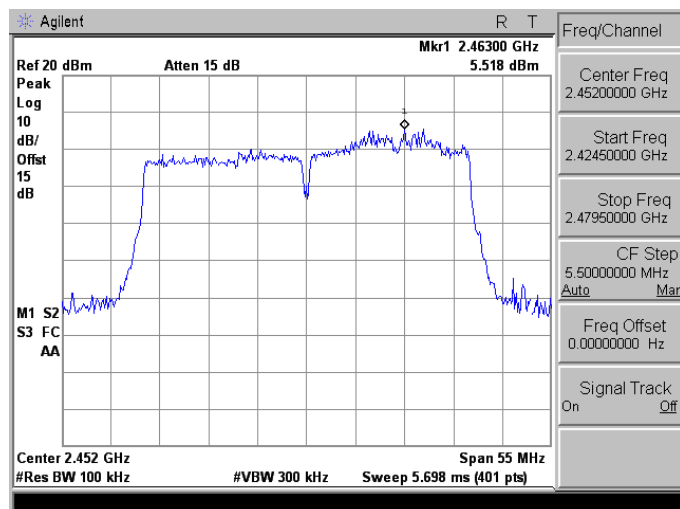
2422 MHz



2437 MHz



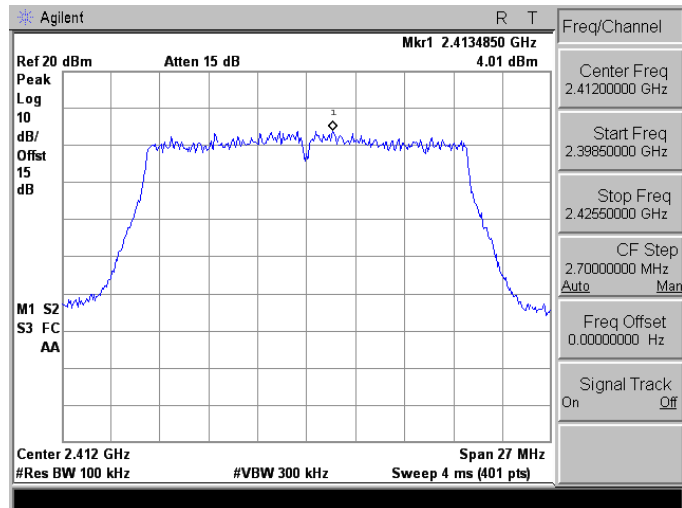
2452 MHz



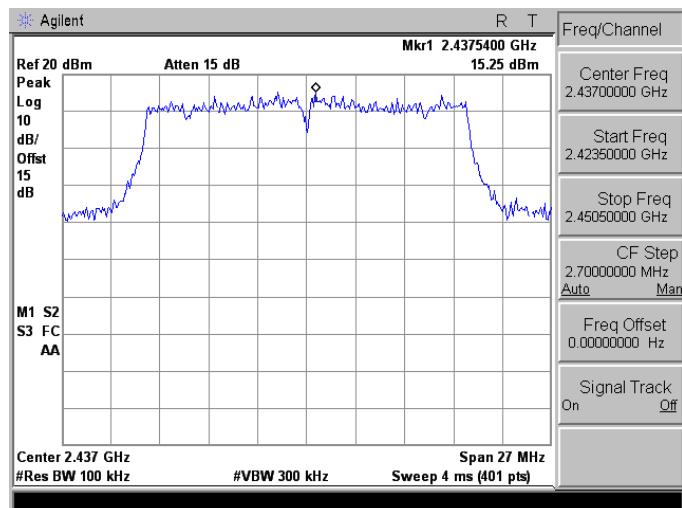


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-2

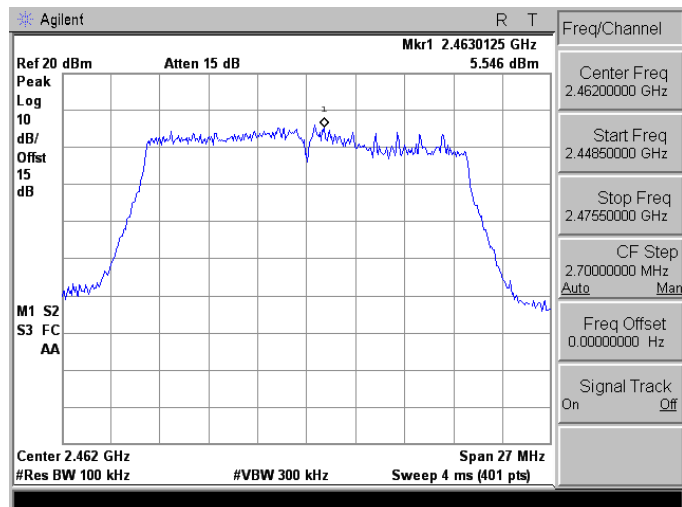
2412 MHz



2437 MHz



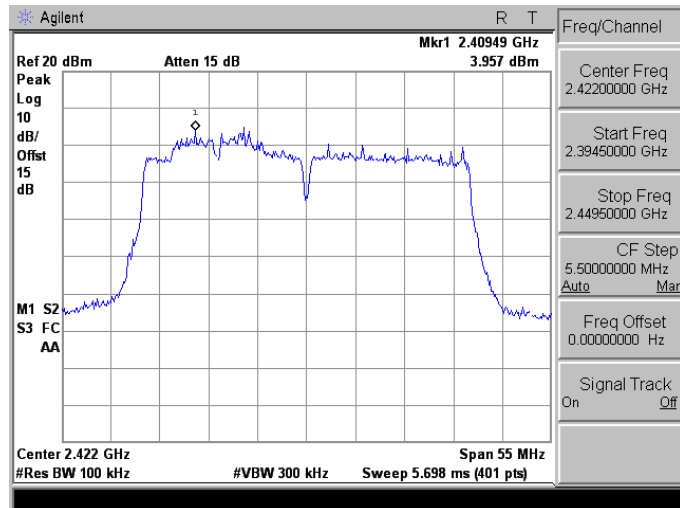
2462 MHz



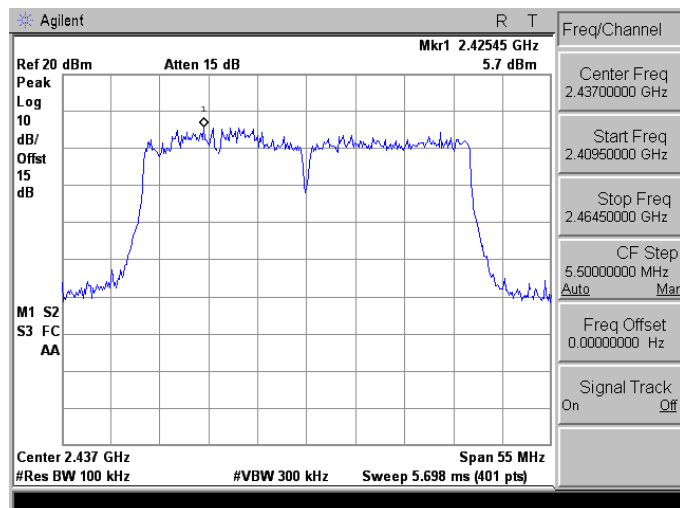


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-2

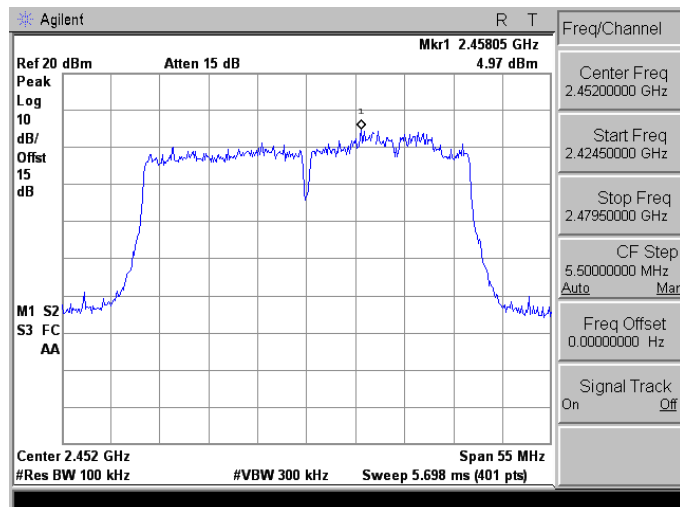
2422 MHz



2437 MHz



2452 MHz

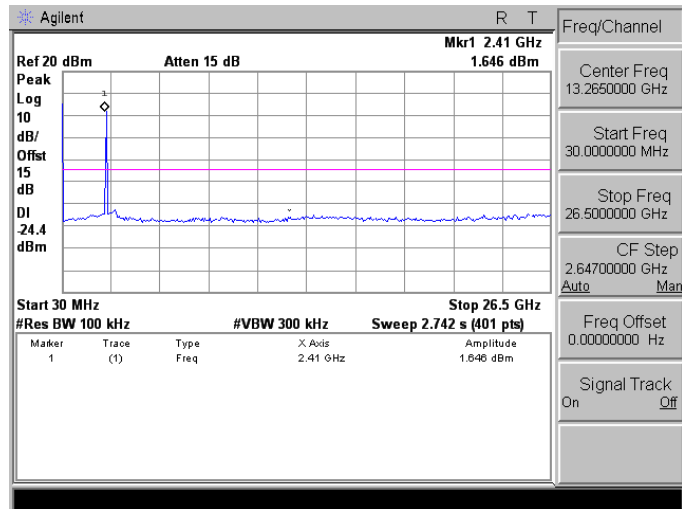




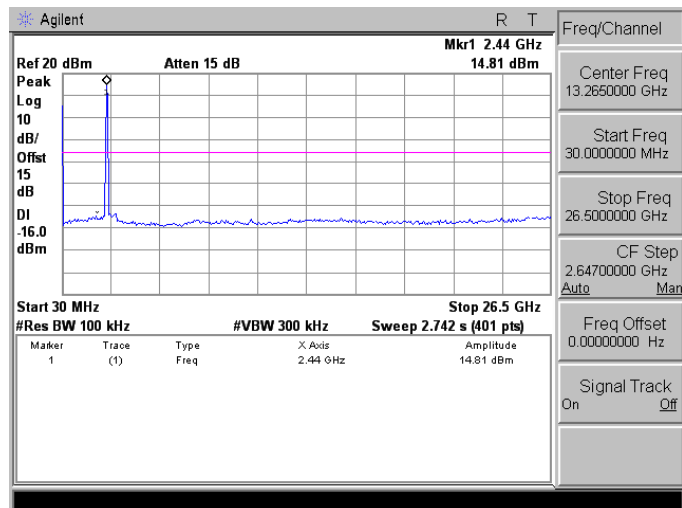
Out of Band Conducted Emissions

Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-0

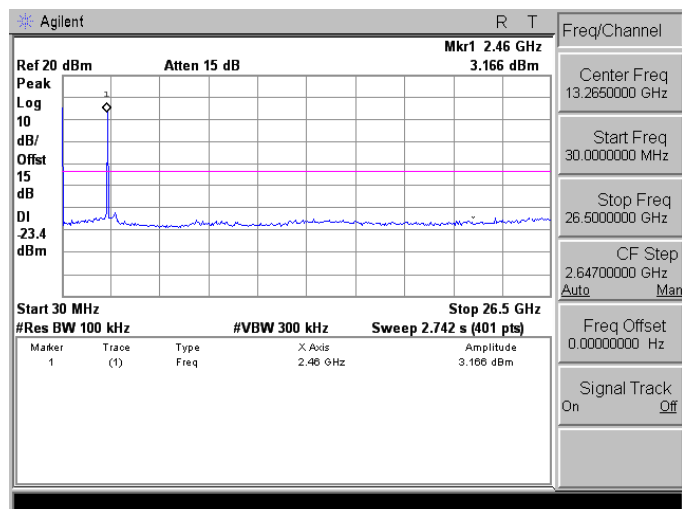
2412 MHz



2437 MHz



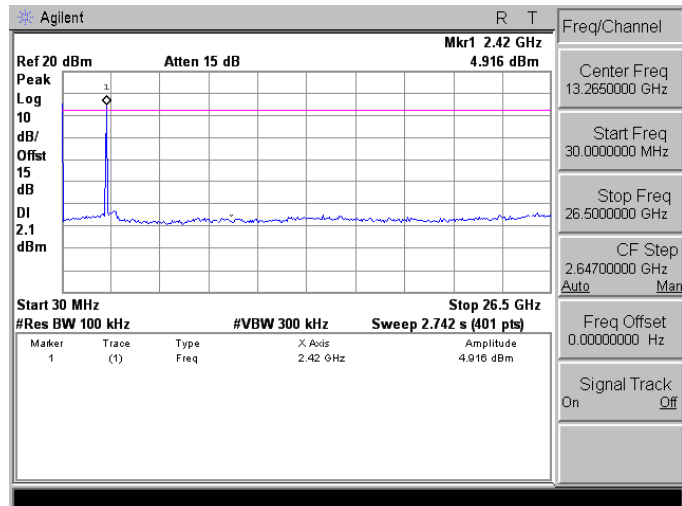
2462 MHz



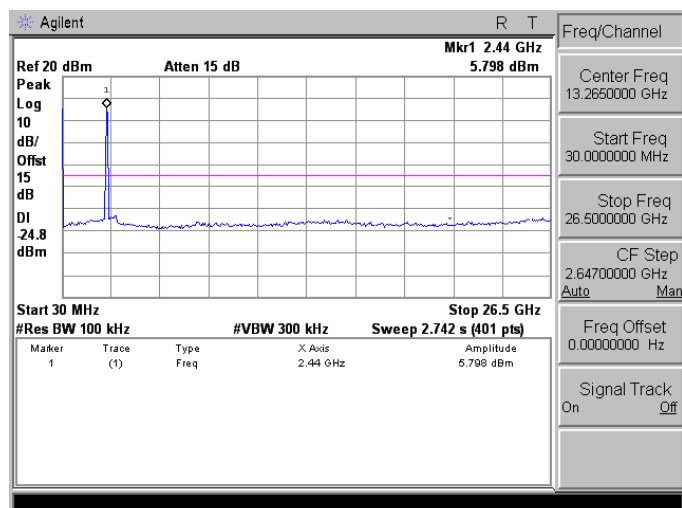


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-0

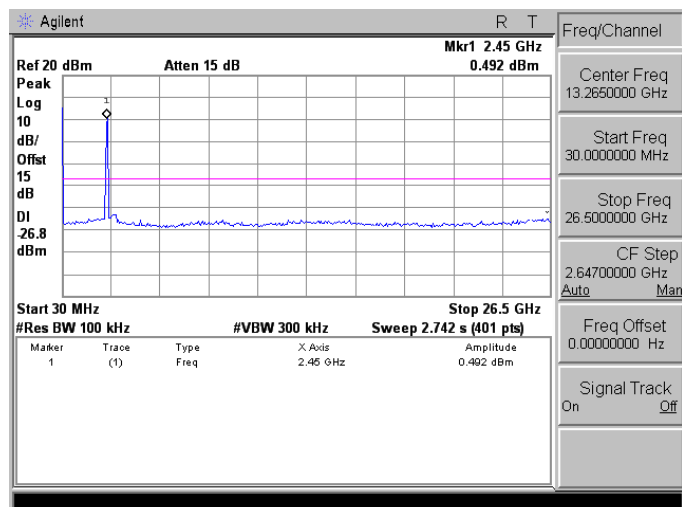
2422 MHz



2437 MHz



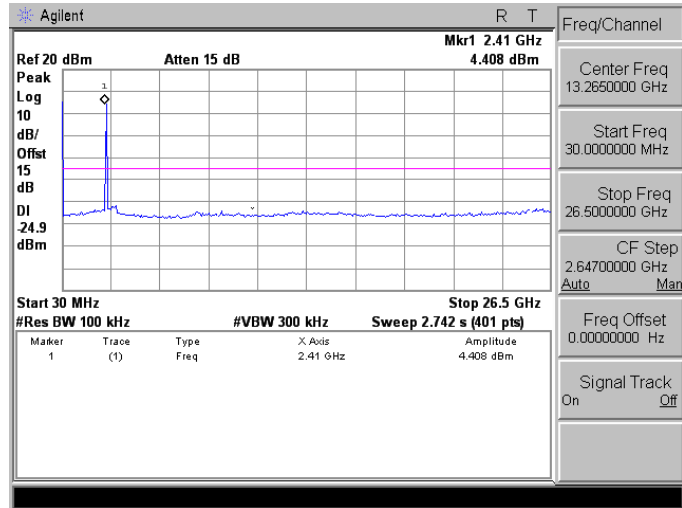
2452 MHz



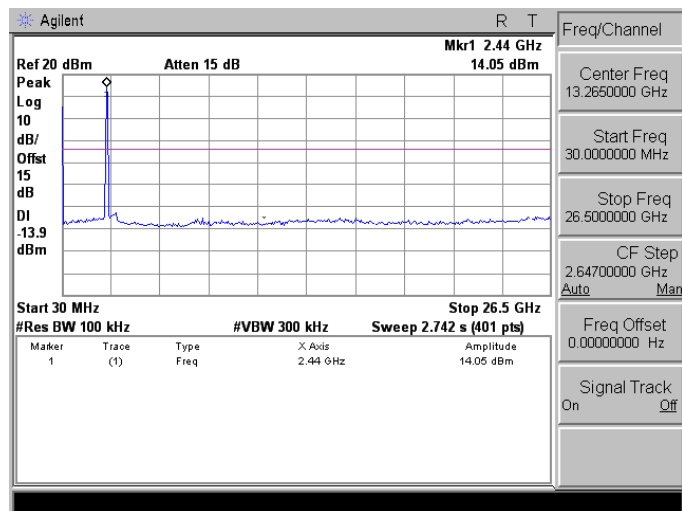


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-1

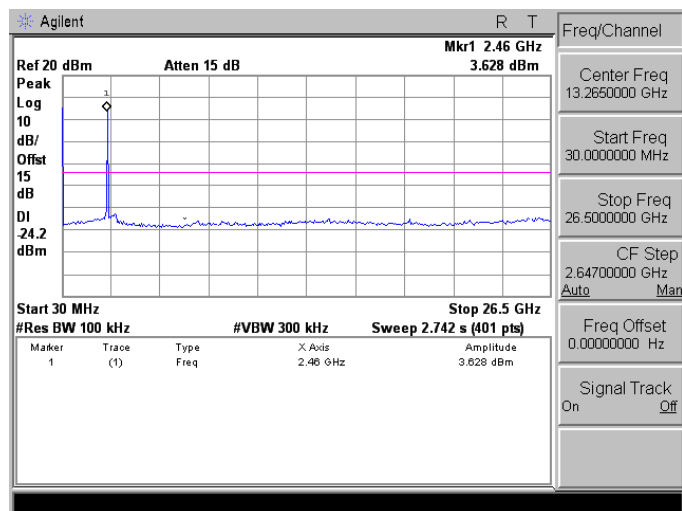
2412 MHz



2437 MHz



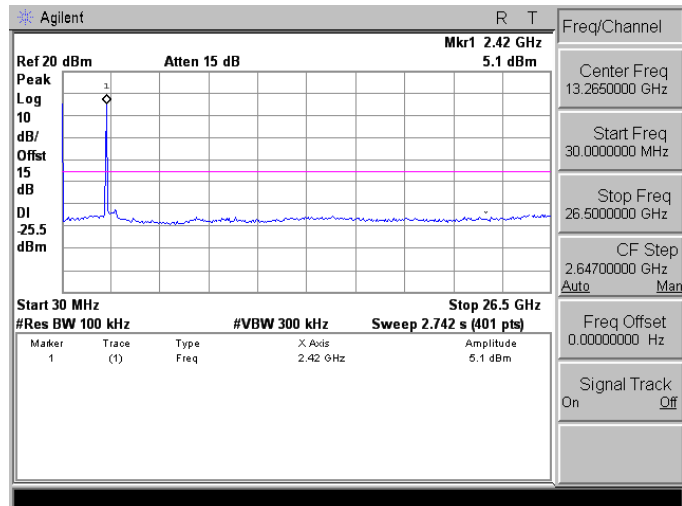
2462 MHz



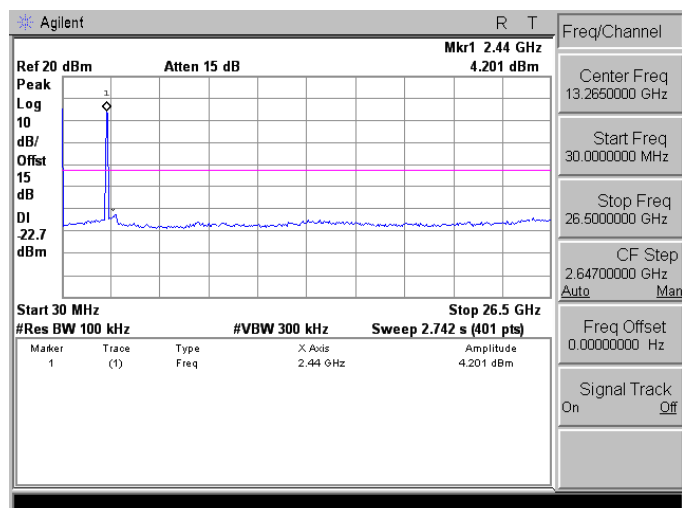


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-1

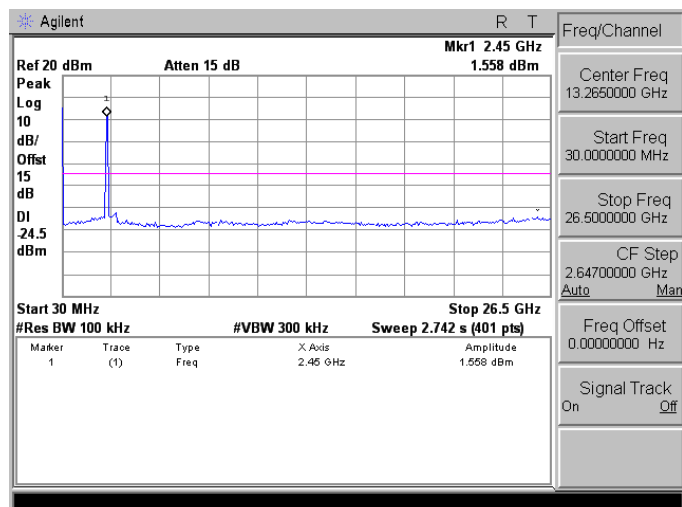
2422 MHz



2437 MHz



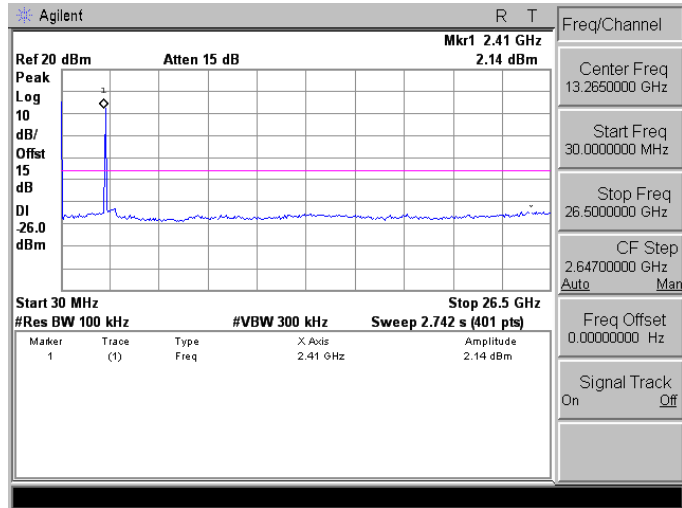
2452 MHz



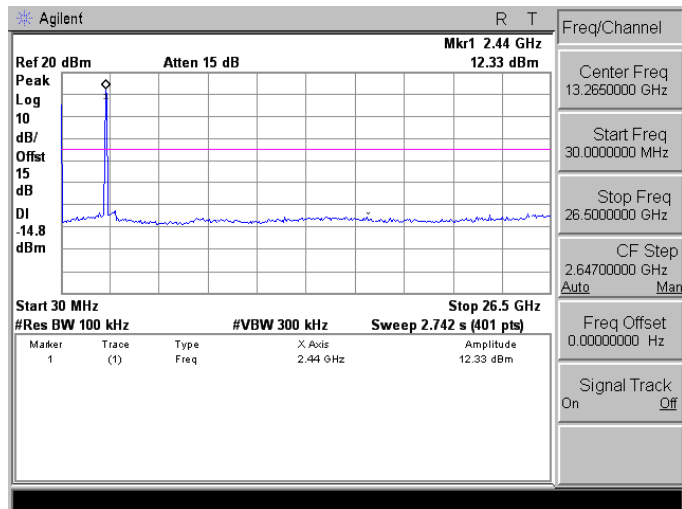


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-2

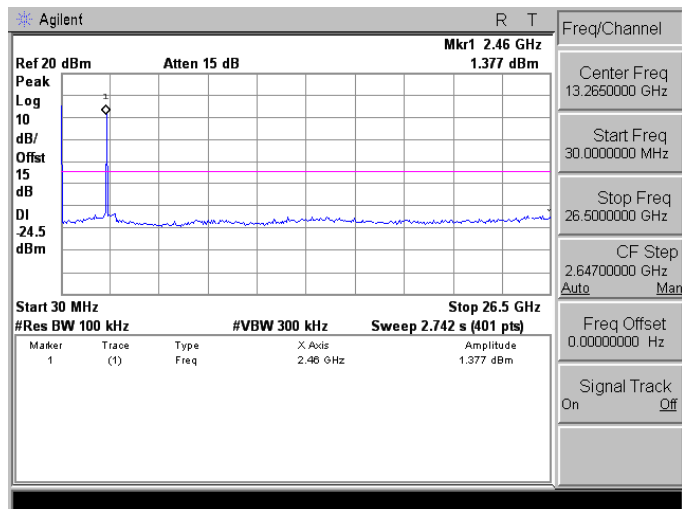
2412 MHz



2437 MHz



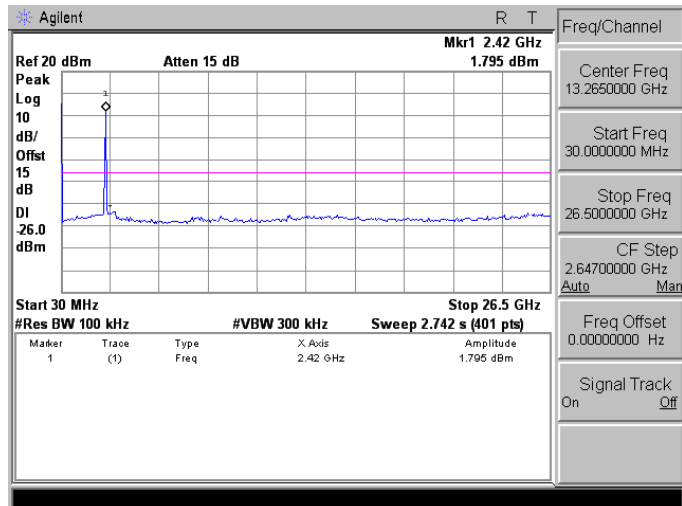
2462 MHz



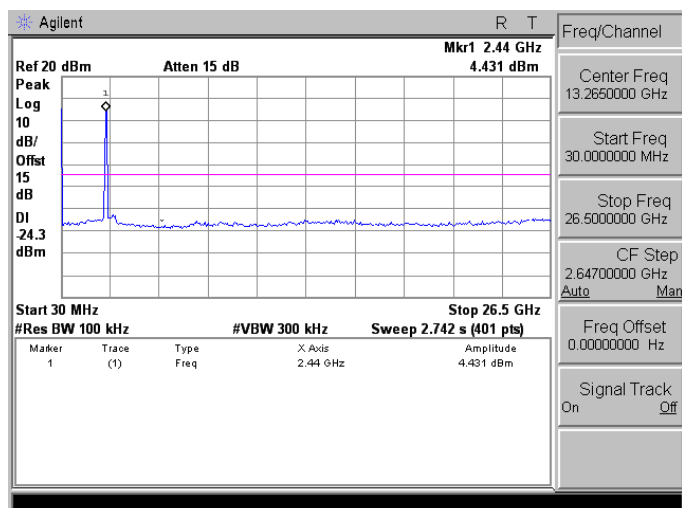


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-2

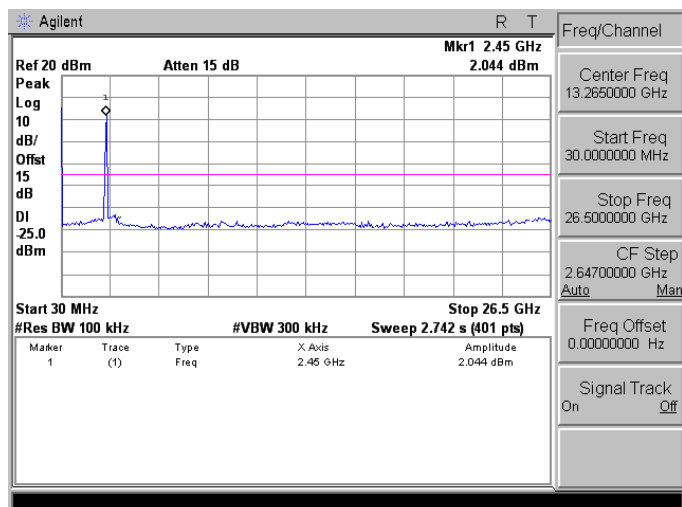
2422 MHz



2437 MHz



2452 MHz

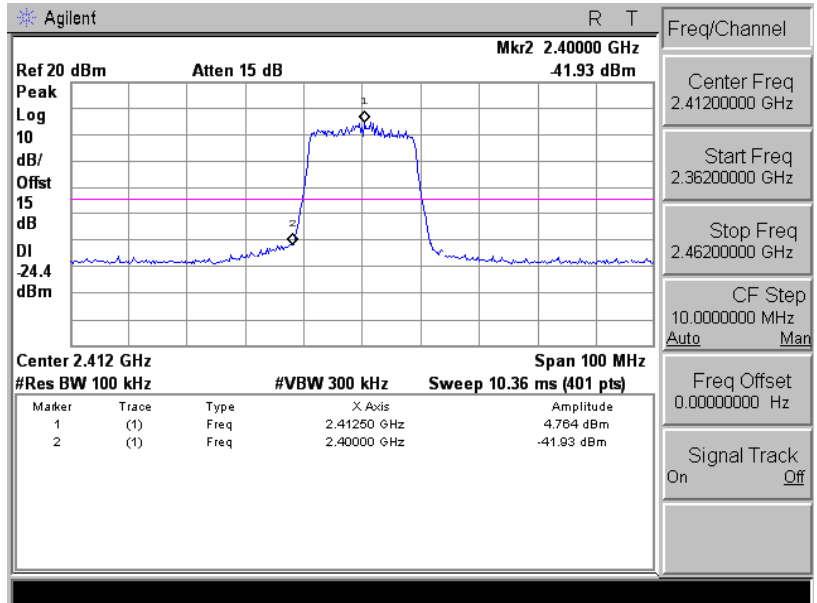




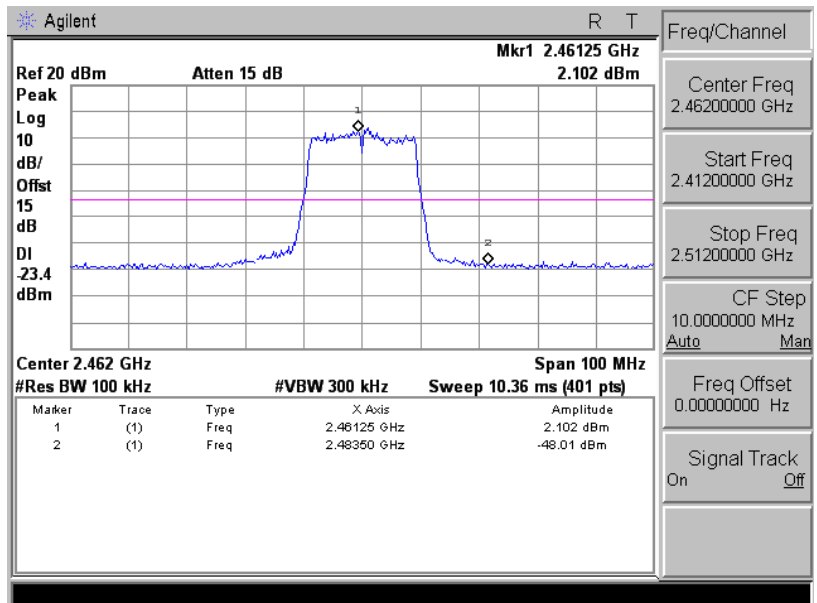
Conducted Band Edge

Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-0

2412 MHz



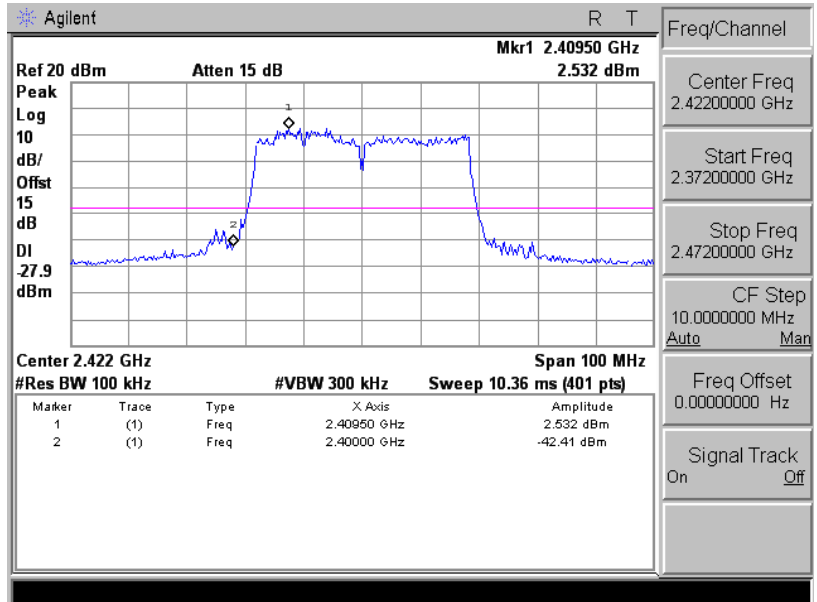
2462 MHz



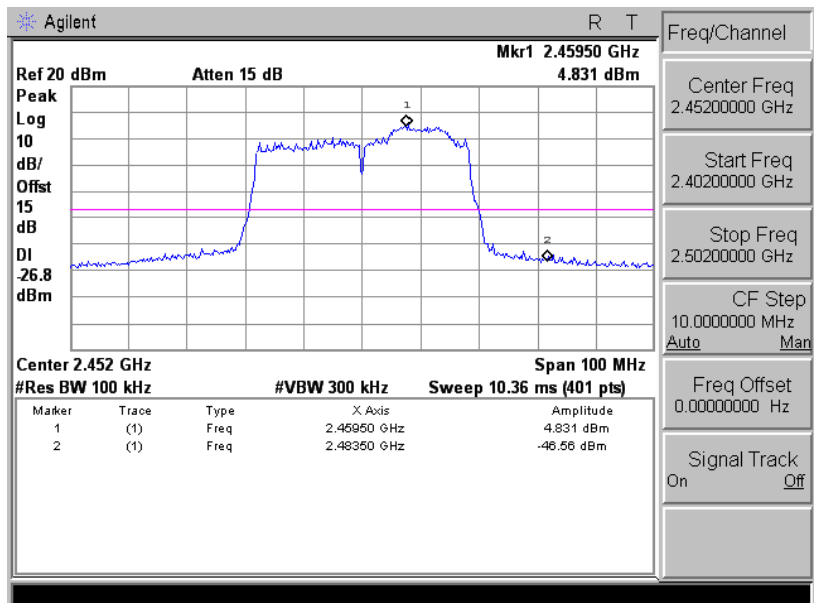


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-0

2422 MHz



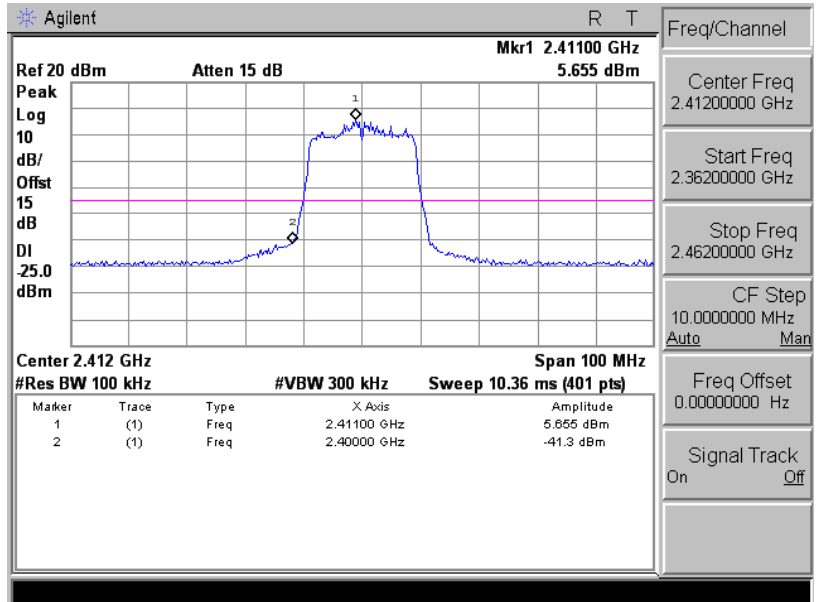
2452 MHz



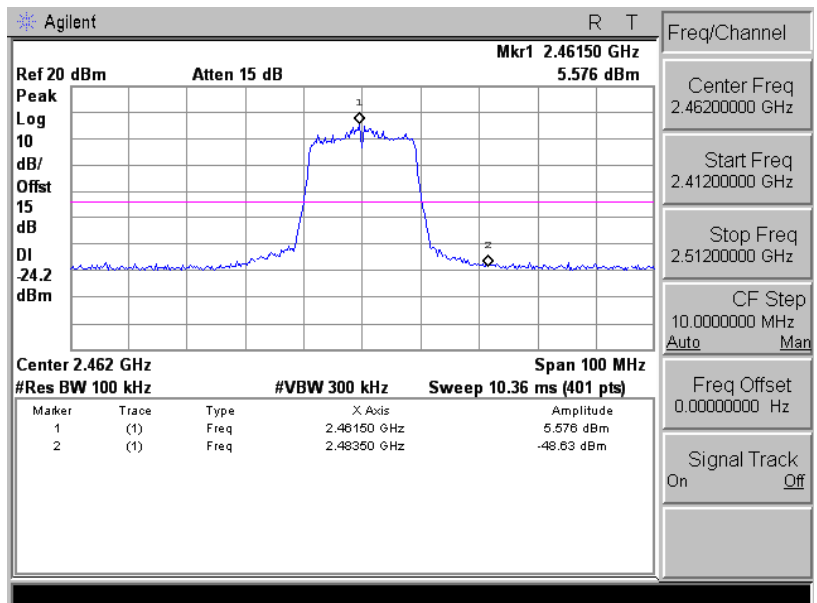


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-1

2412 MHz



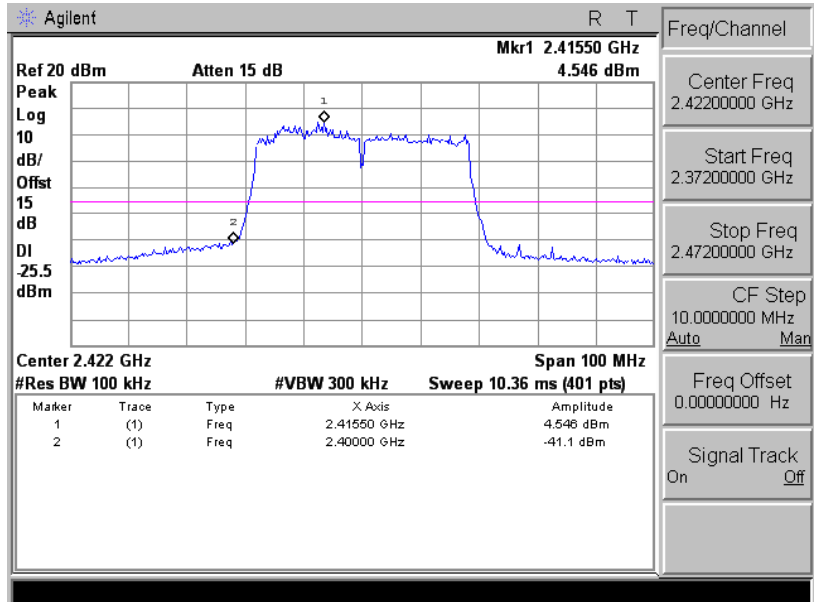
2462 MHz



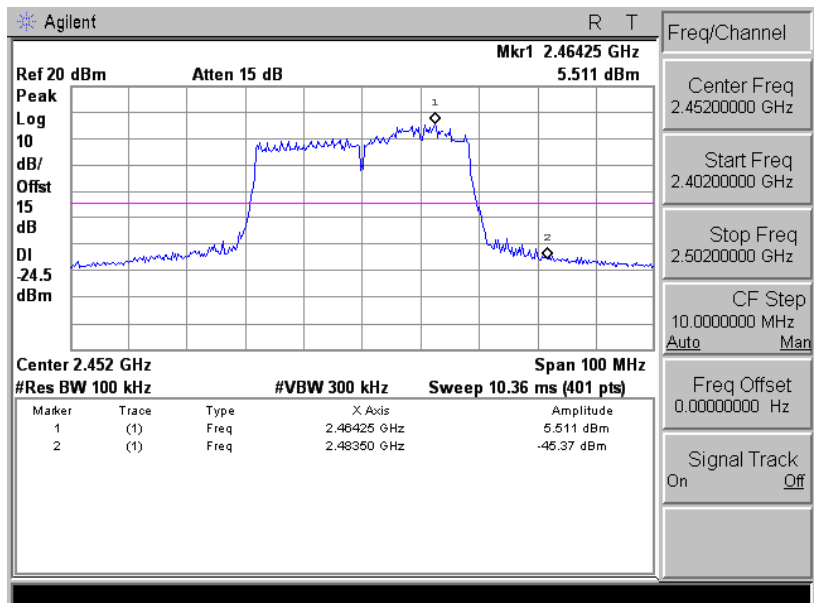


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-1

2422 MHz



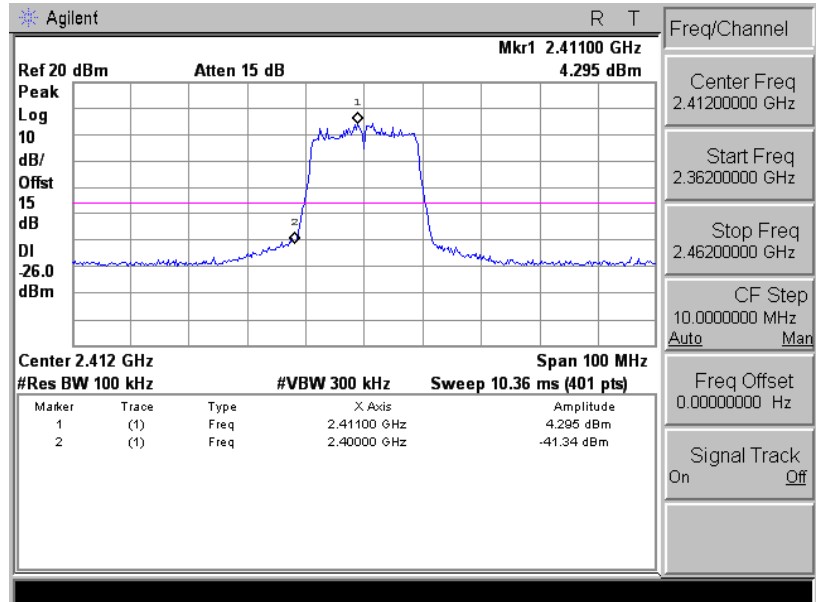
2452 MHz



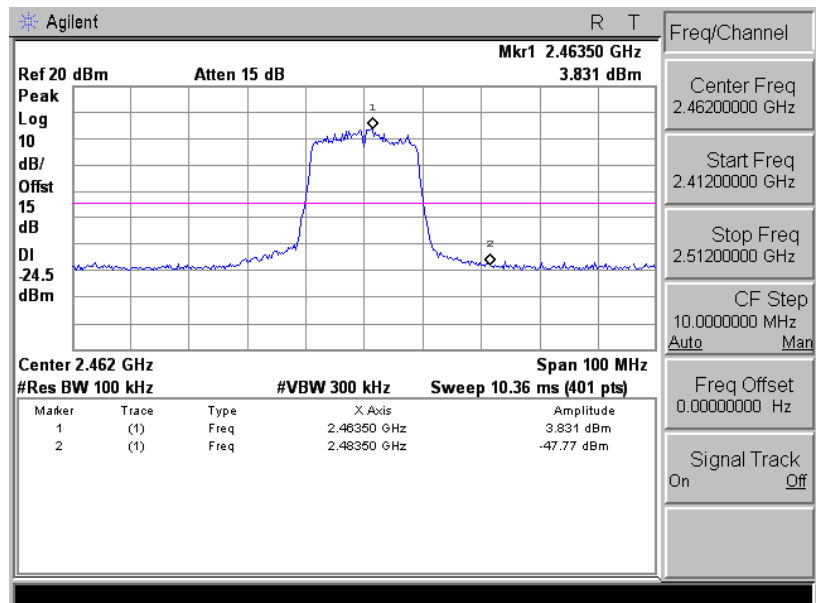


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-2

2412 MHz



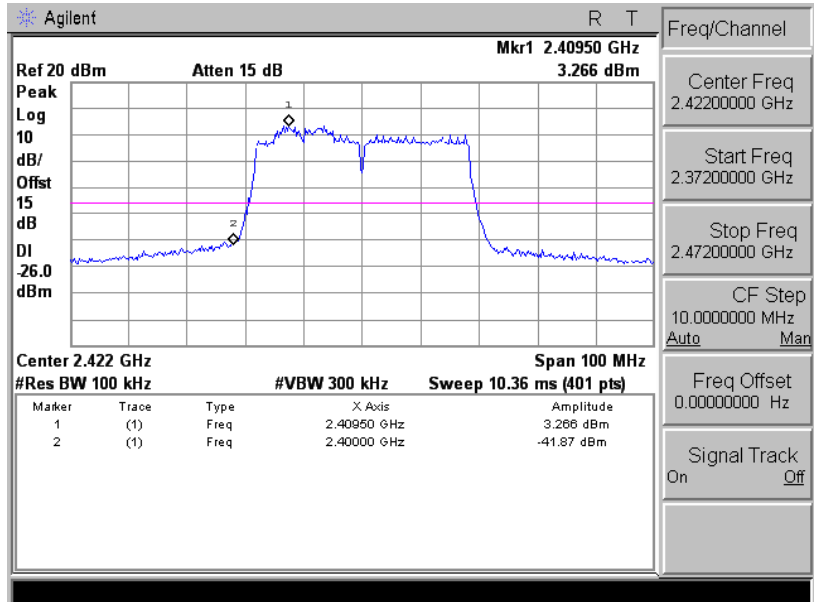
2462 MHz



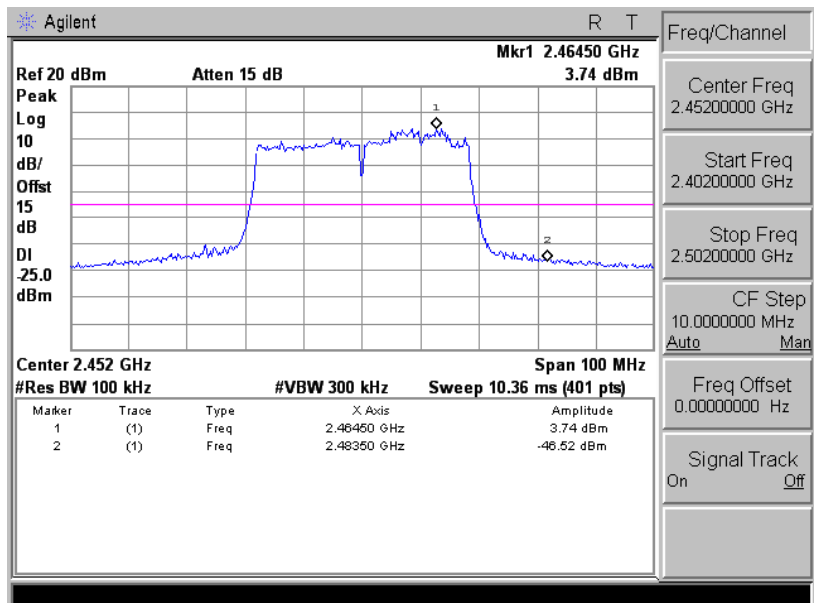


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-2

2422 MHz



2452 MHz



10 Antenna Measurement

10.1.Limit

For intentional device, according to 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And According to 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

10.2.Antenna Description

See section 2 – antenna information.

10.3.Directiona Gain Calculated

For Maximum Conducted Output Power Beamforming on mode

Directional Gain = $10 \cdot \log\{[10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_n/20}]^2 / N_{ANT}\} = 6.6 \text{ dBi} > 6 \text{ dBi}$

Operate Freq. Band	Directional Gain (dBi)
IEEE 802.11n 2.4GHz 20MHz	6.6
IEEE 802.11n 2.4GHz 40MHz	6.6

For Maximum Power Density CDD/Beamforming on mode

Directional Gain = $10 \cdot \log\{[10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_n/20}]^2 / N_{ANT}\} = 6.6 \text{ dBi} > 6 \text{ dBi}$

Operate Freq. Band	Directional Gain (dBi)
IEEE 802.11b Continuous TX mode	6.6
IEEE 802.11g Continuous TX mode	6.6
IEEE 802.11n 2.4GHz 20MHz	6.6
IEEE 802.11n 2.4GHz 40MHz	6.6