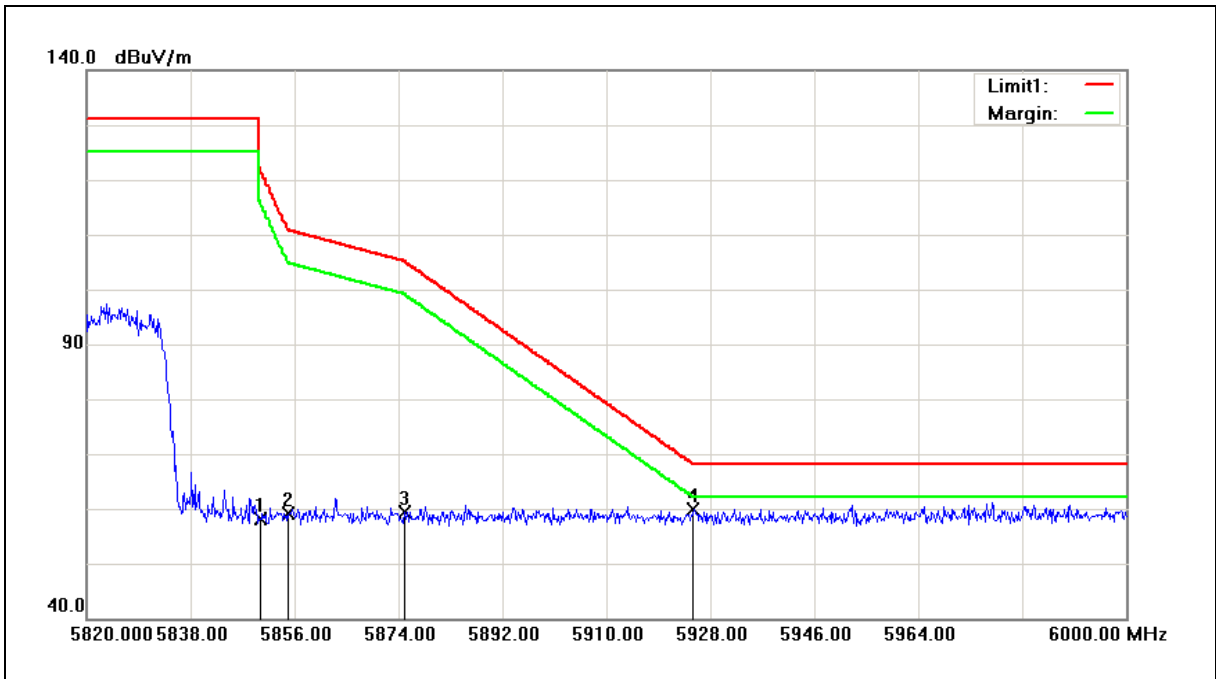




Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5825MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	08/18/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	47.94	10.11	58.05	122.20	-64.15	peak
2	5855.000	48.93	10.12	59.05	110.80	-51.75	peak
3	5875.000	49.12	10.17	59.29	105.20	-45.91	peak
4	5925.000	49.54	10.28	59.82	68.20	-8.38	peak

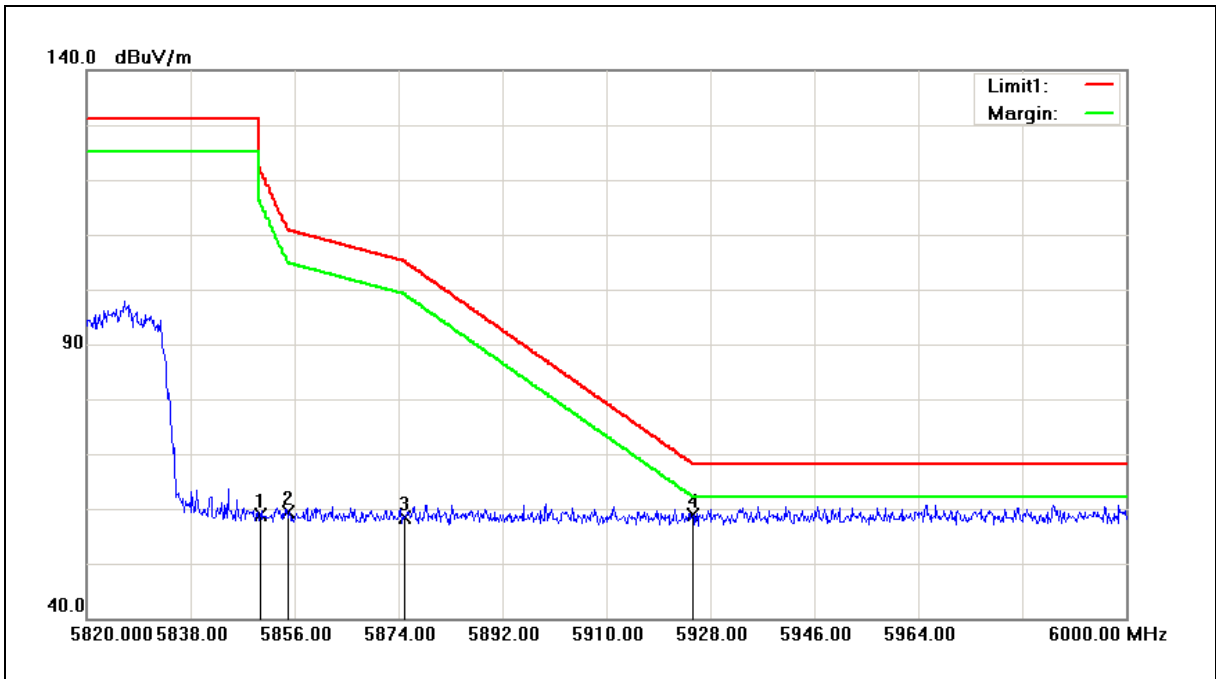
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5825MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	08/18/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	48.80	10.11	58.91	122.20	-63.29	peak
2	5855.000	49.34	10.12	59.46	110.80	-51.34	peak
3	5875.000	48.28	10.17	58.45	105.20	-46.75	peak
4	5925.000	48.64	10.28	58.92	68.20	-9.28	peak

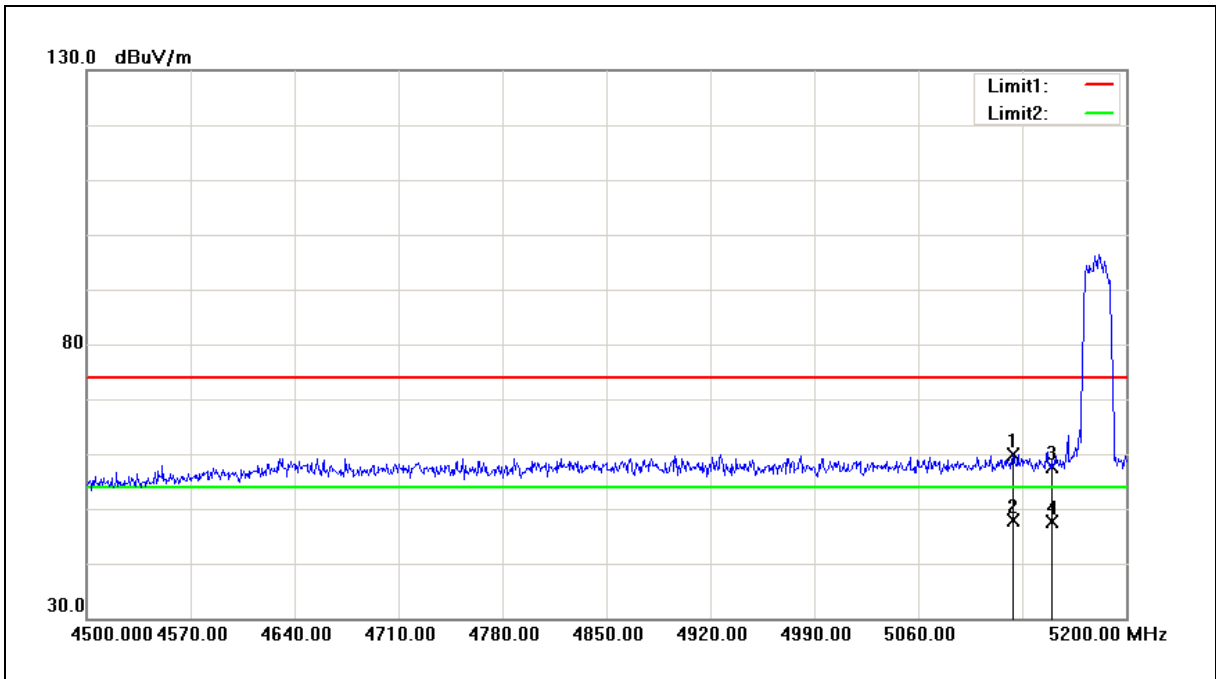
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5180MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	08/17/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5123.700	50.87	9.06	59.93	74.00	-14.07	peak
2	5123.700	38.78	9.06	47.84	54.00	-6.16	AVG
3	5150.000	48.56	9.10	57.66	74.00	-16.34	peak
4	5150.000	38.62	9.10	47.72	54.00	-6.28	AVG

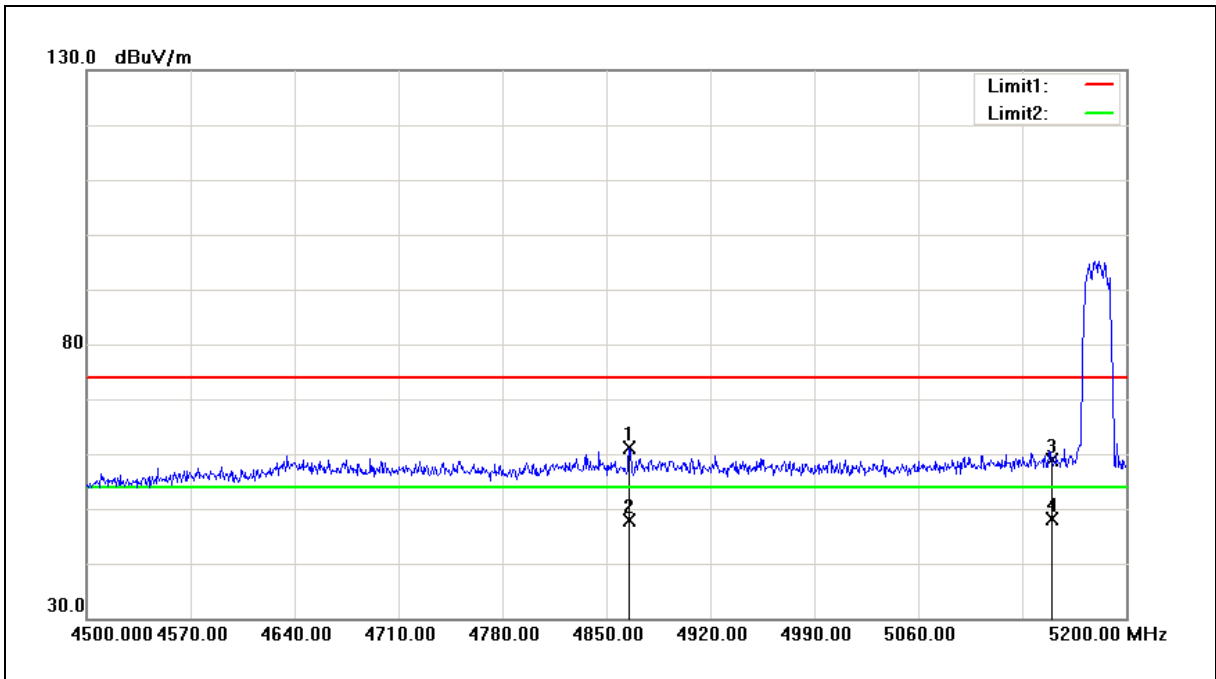
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5180MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	08/17/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4865.400	52.64	8.43	61.07	74.00	-12.93	peak
2	4865.400	39.52	8.43	47.95	54.00	-6.05	AVG
3	5150.000	49.71	9.10	58.81	74.00	-15.19	peak
4	5150.000	38.95	9.10	48.05	54.00	-5.95	AVG

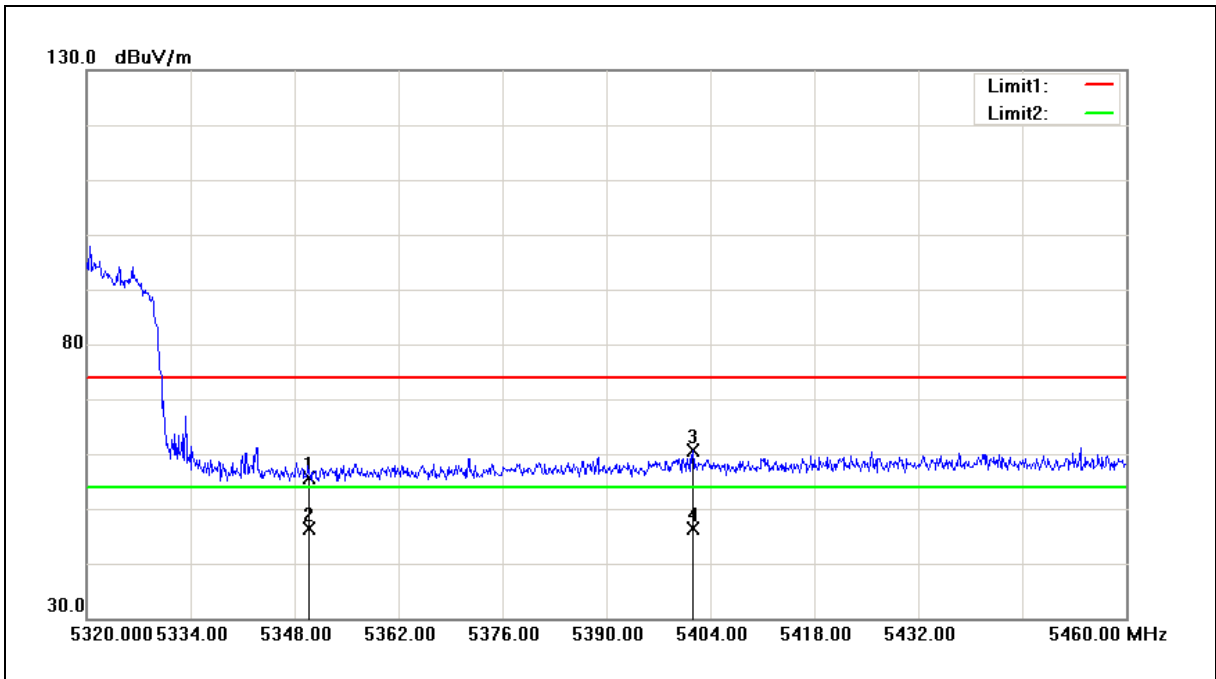
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5320MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	08/17/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	46.50	9.25	55.75	74.00	-18.25	peak
2	5350.000	37.16	9.25	46.41	54.00	-7.59	AVG
3	5401.620	51.30	9.30	60.60	74.00	-13.40	peak
4	5401.620	37.19	9.30	46.49	54.00	-7.51	AVG

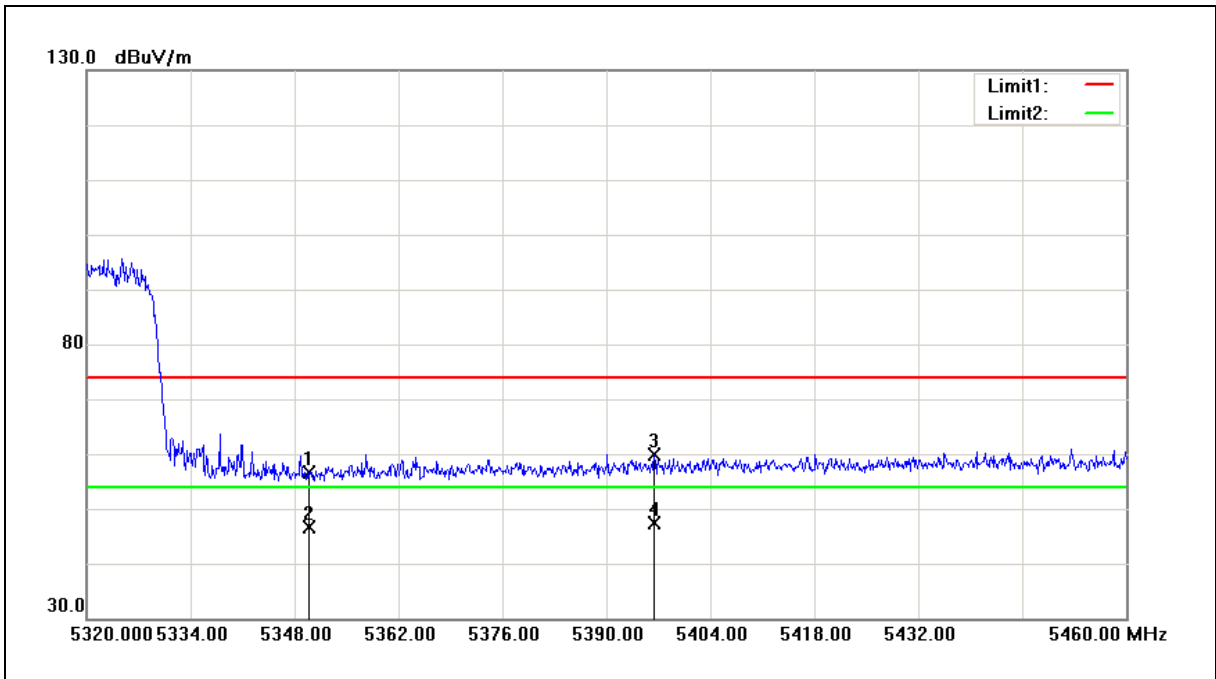
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5320MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	08/17/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	47.47	9.25	56.72	74.00	-17.28	peak
2	5350.000	37.33	9.25	46.58	54.00	-7.42	AVG
3	5396.440	50.60	9.30	59.90	74.00	-14.10	peak
4	5396.440	38.19	9.30	47.49	54.00	-6.51	AVG

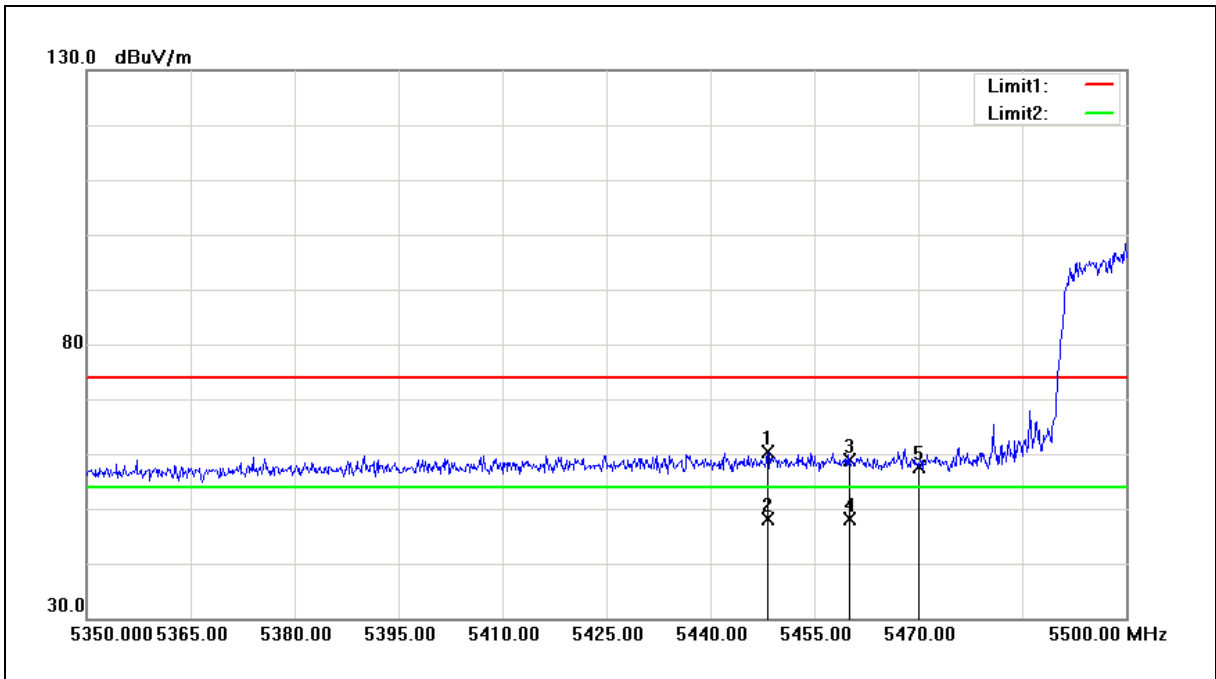
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5500MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	08/17/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5448.250	50.94	9.34	60.28	74.00	-13.72	peak
2	5448.250	38.79	9.34	48.13	54.00	-5.87	AVG
3	5460.000	49.62	9.35	58.97	74.00	-15.03	peak
4	5460.000	38.71	9.35	48.06	54.00	-5.94	AVG
5	5470.000	48.30	9.35	57.65	68.20	-10.55	peak

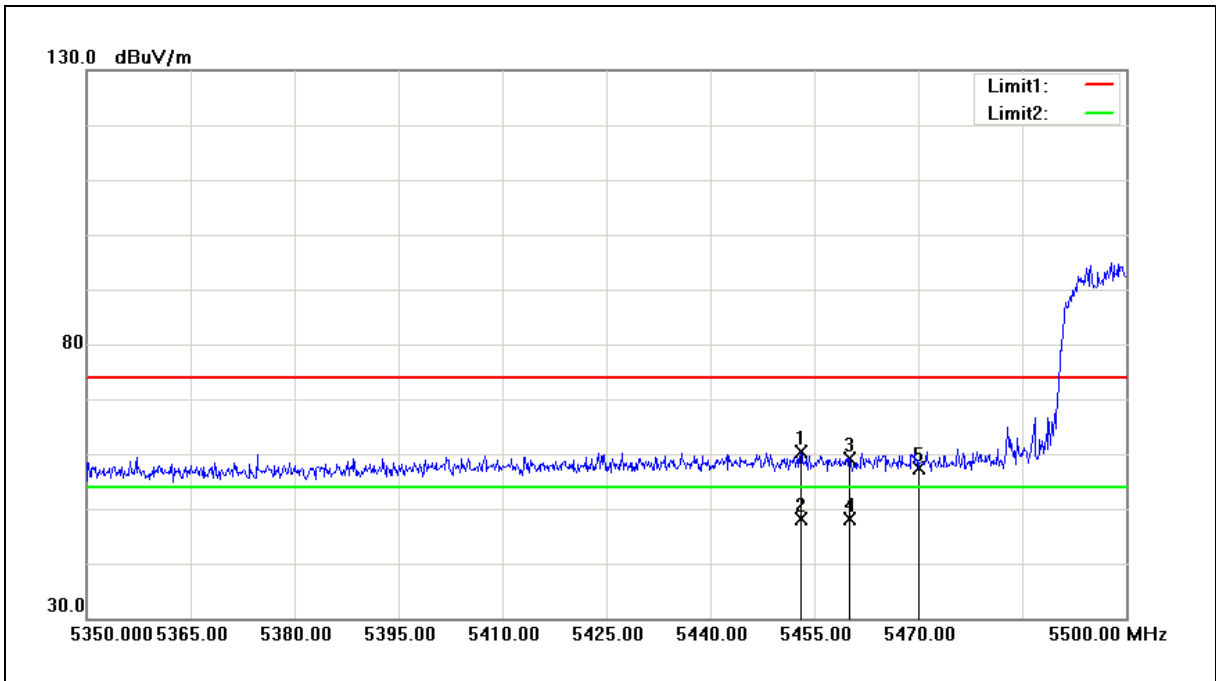
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5500MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	08/17/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5453.050	51.05	9.34	60.39	74.00	-13.61	peak
2	5453.050	38.68	9.34	48.02	54.00	-5.98	AVG
3	5460.000	49.67	9.35	59.02	74.00	-14.98	peak
4	5460.000	38.77	9.35	48.12	54.00	-5.88	AVG
5	5470.000	48.07	9.35	57.42	68.20	-10.78	peak

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

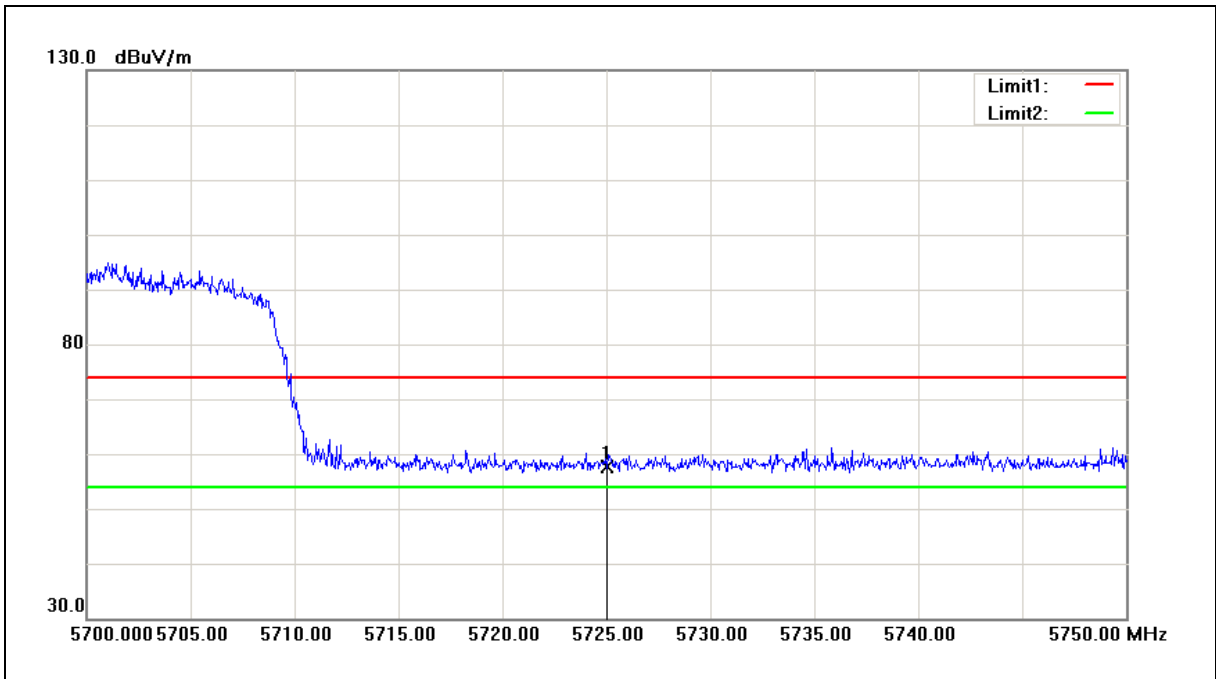
2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

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





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5700MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	08/17/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5725.000	47.72	9.86	57.58	68.20	-10.62	peak

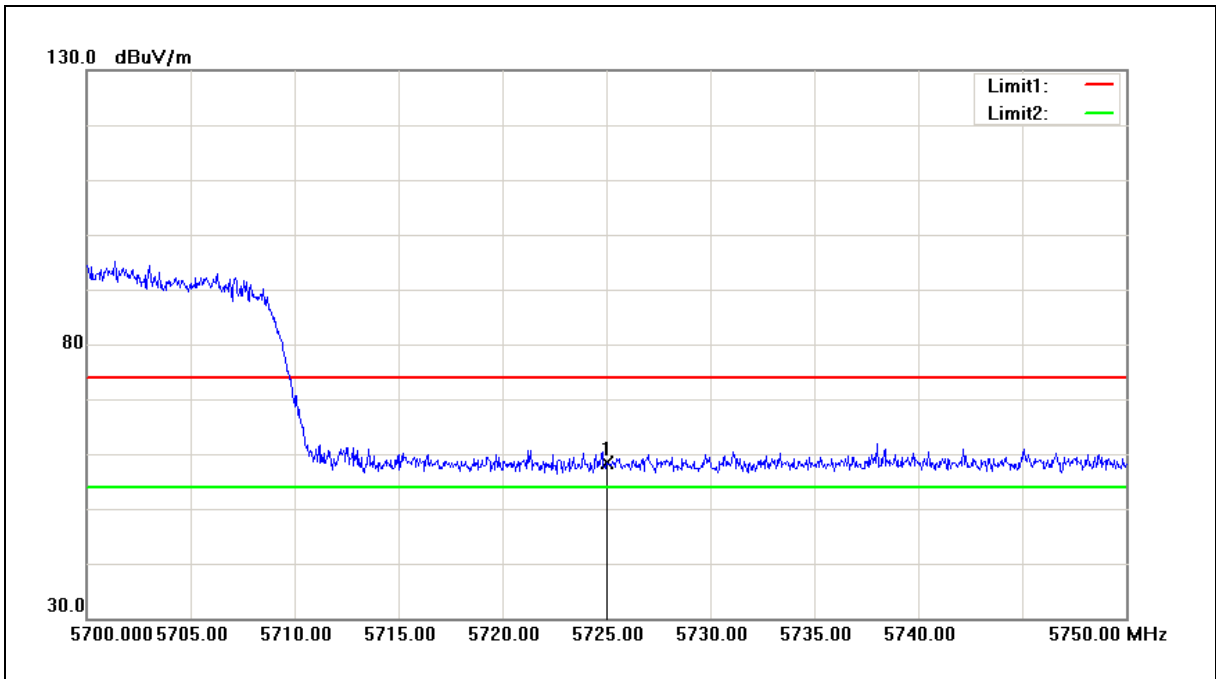
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5700MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	08/17/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5725.000	48.40	9.86	58.26	68.20	-9.94	peak

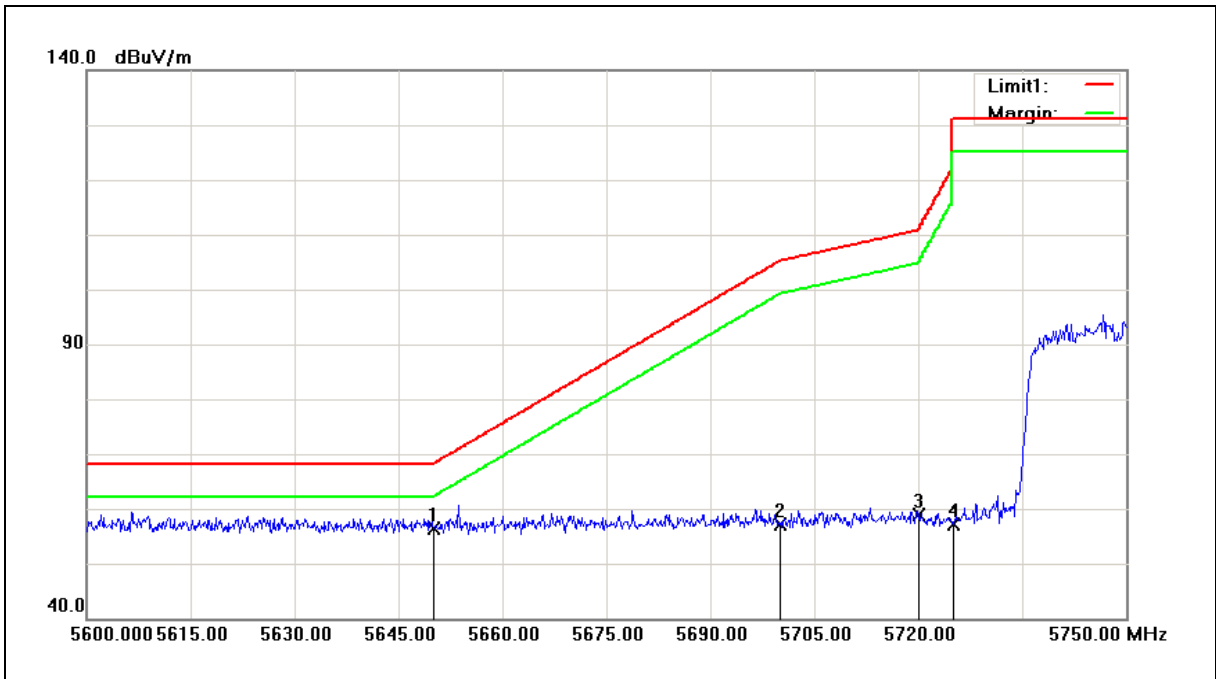
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5745MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	08/18/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5650.000	46.74	9.70	56.44	68.20	-11.76	peak
2	5700.000	47.30	9.80	57.10	105.20	-48.10	peak
3	5720.000	48.93	9.85	58.78	110.80	-52.02	peak
4	5725.000	47.19	9.86	57.05	122.20	-65.15	peak

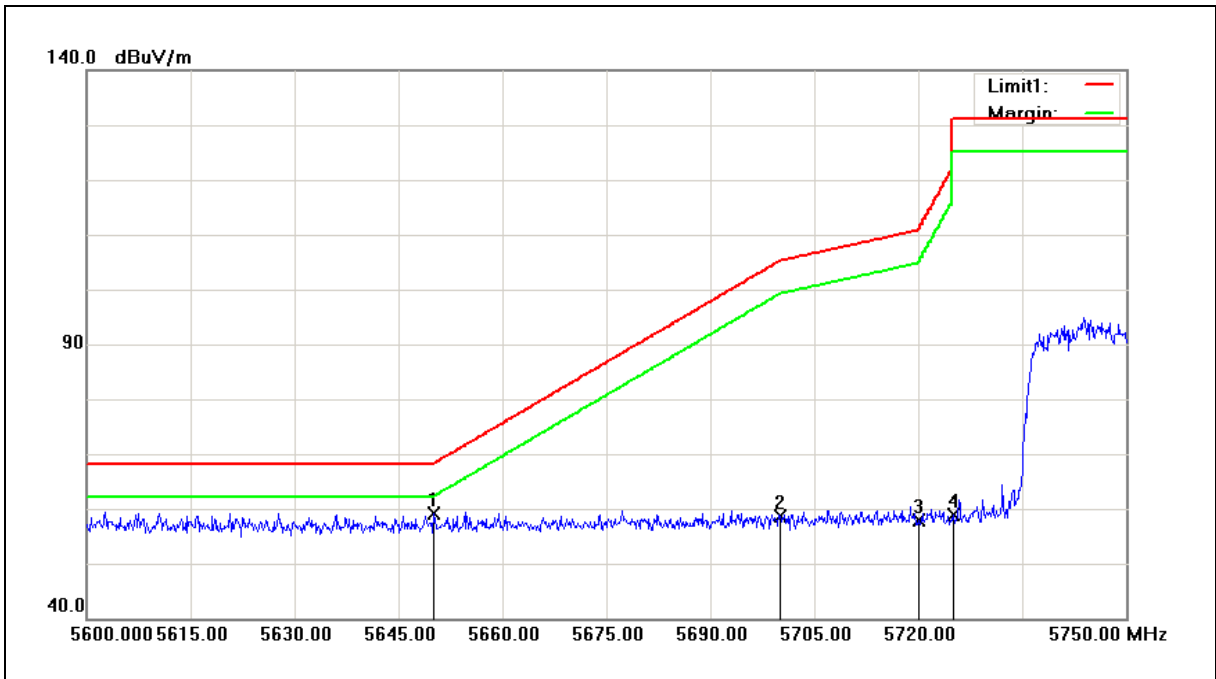
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5745MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	08/18/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5650.000	49.48	9.70	59.18	68.20	-9.02	peak
2	5700.000	48.92	9.80	58.72	105.20	-46.48	peak
3	5720.000	48.01	9.85	57.86	110.80	-52.94	peak
4	5725.000	49.00	9.86	58.86	122.20	-63.34	peak

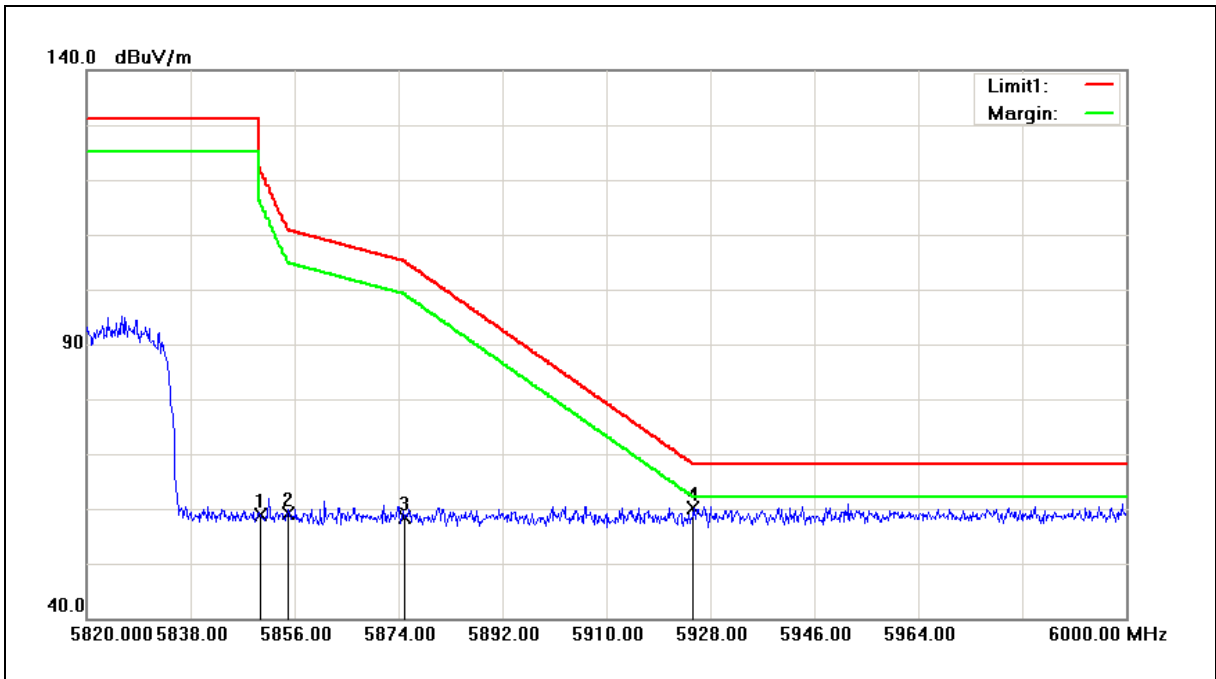
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5825MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	08/18/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	48.77	10.11	58.88	122.20	-63.32	peak
2	5855.000	48.94	10.12	59.06	110.80	-51.74	peak
3	5875.000	48.25	10.17	58.42	105.20	-46.78	peak
4	5925.000	49.88	10.28	60.16	68.20	-8.04	peak

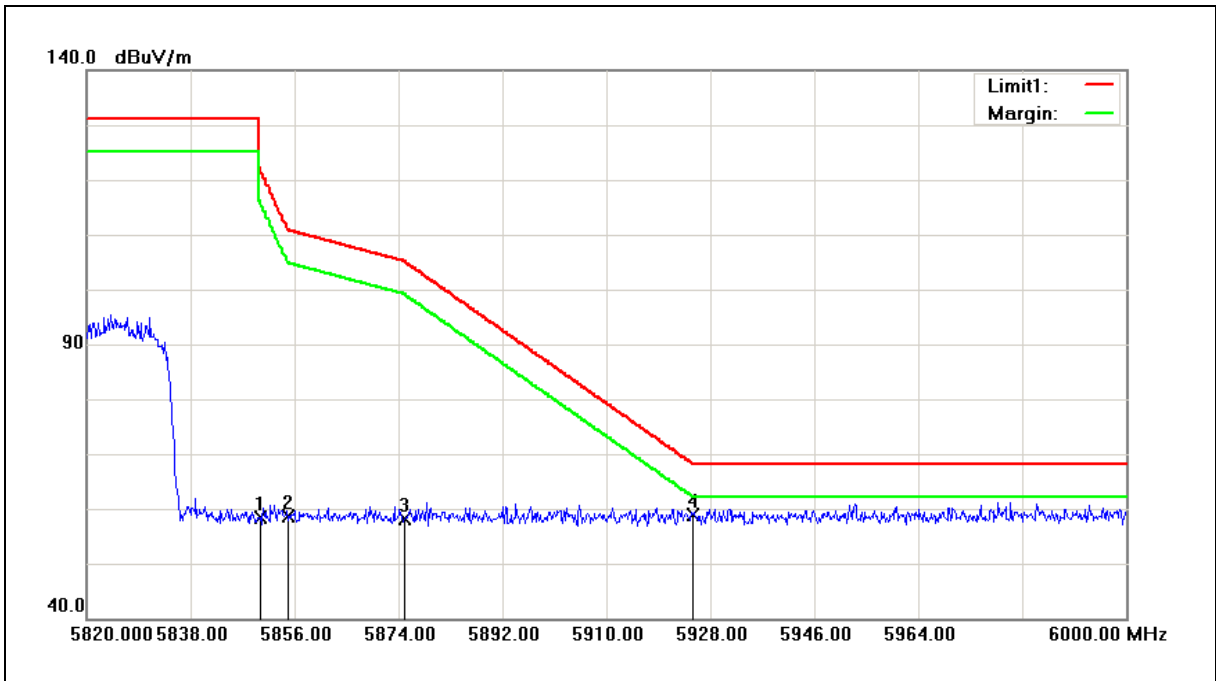
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5825MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	08/18/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	48.30	10.11	58.41	122.20	-63.79	peak
2	5855.000	48.55	10.12	58.67	110.80	-52.13	peak
3	5875.000	47.99	10.17	58.16	105.20	-47.04	peak
4	5925.000	48.65	10.28	58.93	68.20	-9.27	peak

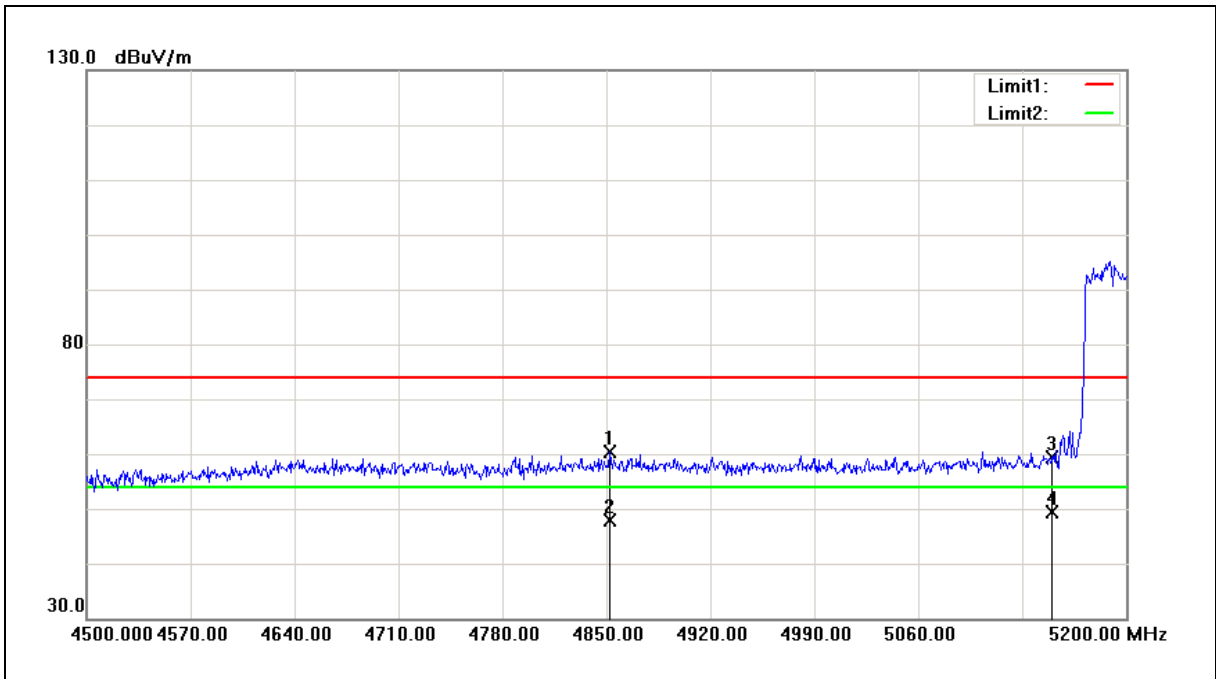
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5190MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	08/17/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4852.100	52.05	8.37	60.42	74.00	-13.58	peak
2	4852.100	39.50	8.37	47.87	54.00	-6.13	AVG
3	5150.000	50.23	9.10	59.33	74.00	-14.67	peak
4	5150.000	40.24	9.10	49.34	54.00	-4.66	AVG

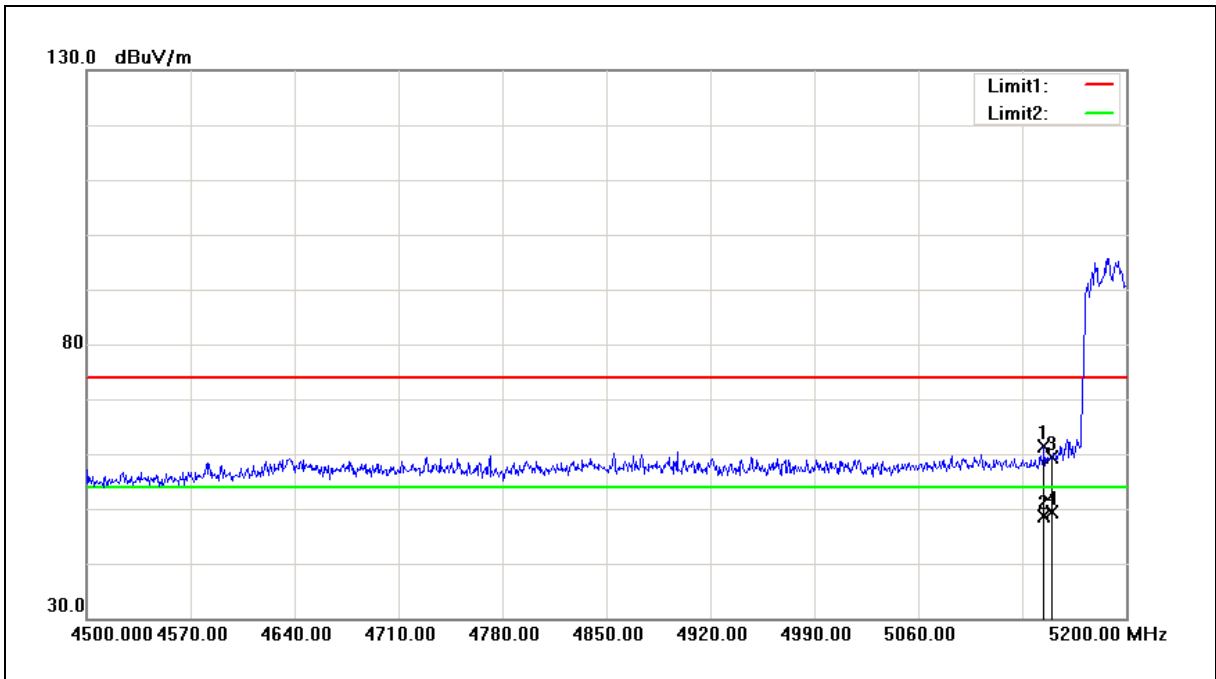
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5190MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	08/17/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5144.700	52.33	9.10	61.43	74.00	-12.57	peak
2	5144.700	39.42	9.10	48.52	54.00	-5.48	AVG
3	5150.000	50.16	9.10	59.26	74.00	-14.74	peak
4	5150.000	40.18	9.10	49.28	54.00	-4.72	AVG

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

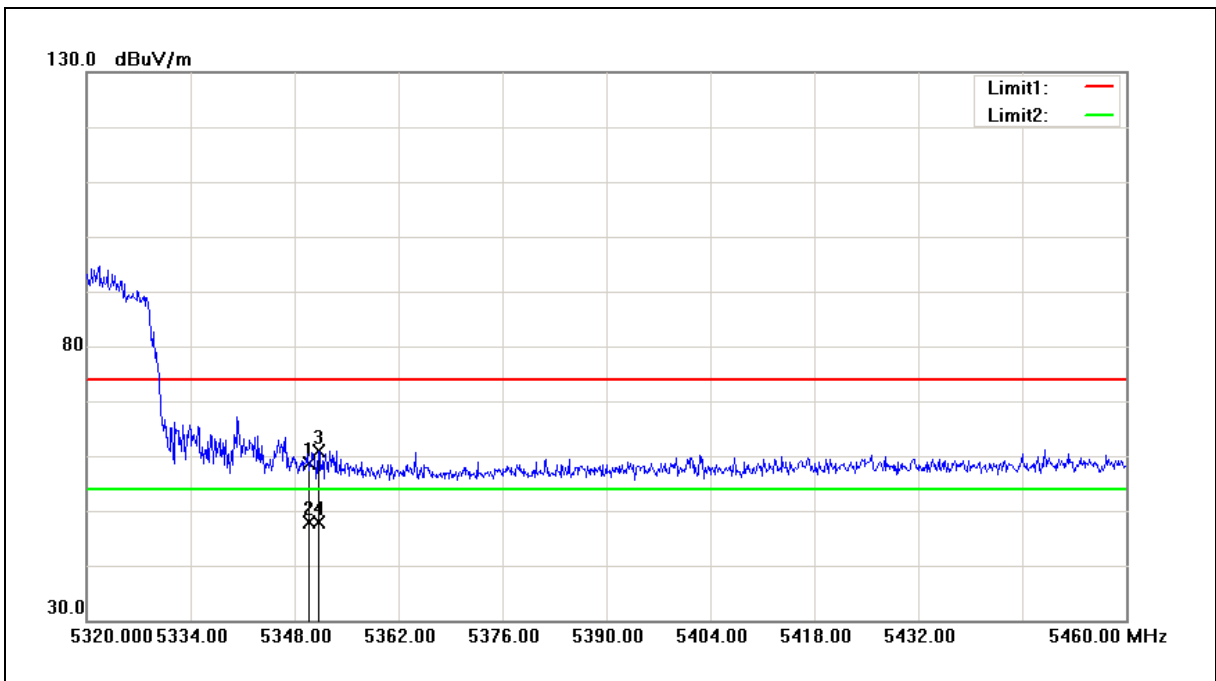
2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

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





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5310MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	08/18/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	49.33	9.25	58.58	74.00	-15.42	peak
2	5350.000	38.71	9.25	47.96	54.00	-6.04	AVG
3	5351.220	51.72	9.25	60.97	74.00	-13.03	peak
4	5351.220	38.65	9.25	47.90	54.00	-6.10	AVG

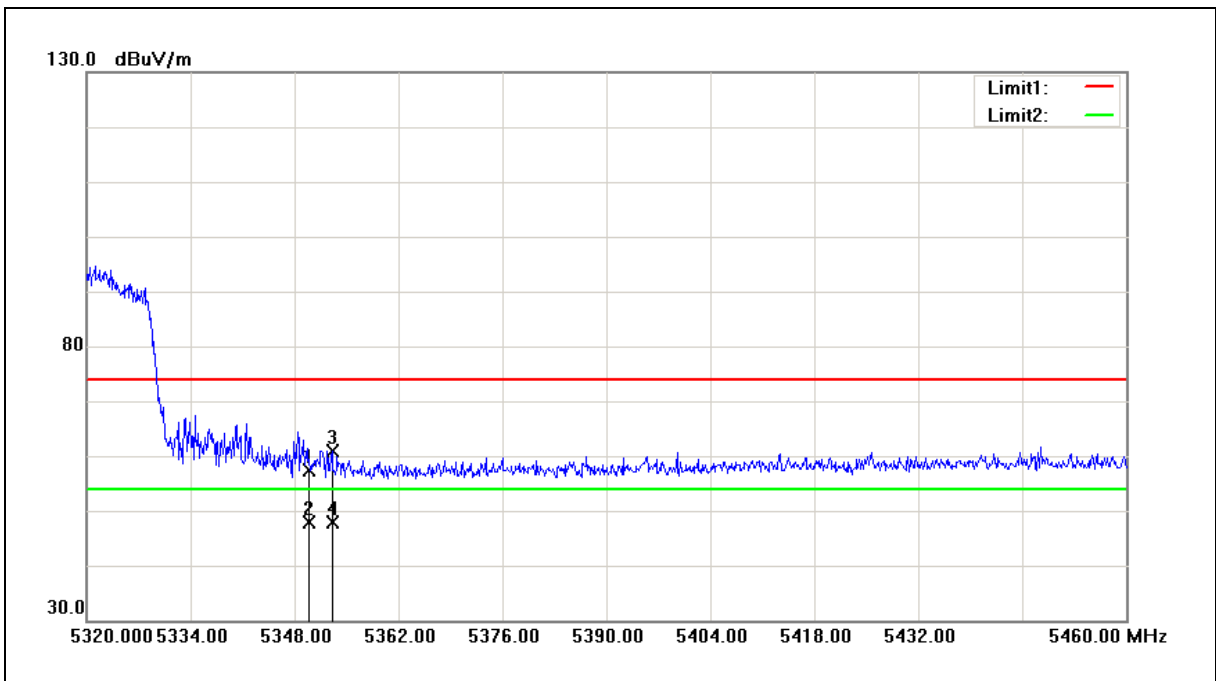
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5310MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	08/18/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	48.10	9.25	57.35	74.00	-16.65	peak
2	5350.000	38.52	9.25	47.77	54.00	-6.23	AVG
3	5353.040	51.70	9.25	60.95	74.00	-13.05	peak
4	5353.040	38.66	9.25	47.91	54.00	-6.09	AVG

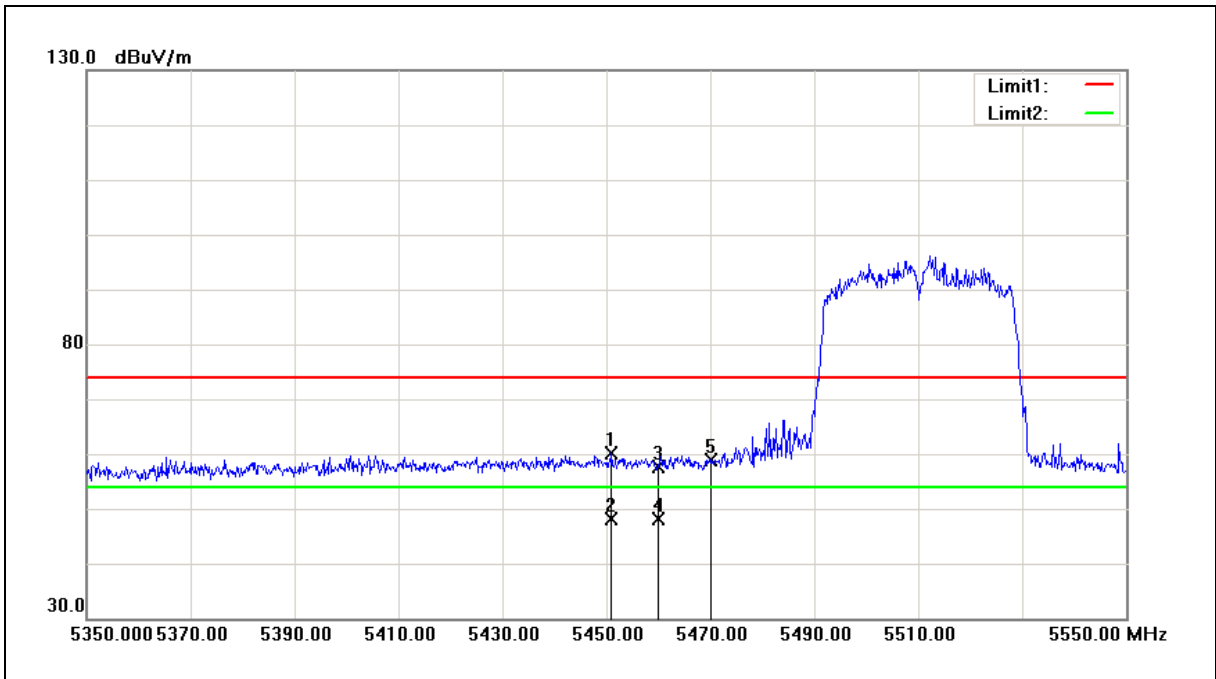
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5510MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	08/18/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5451.000	50.82	9.34	60.16	74.00	-13.84	peak
2	5451.000	38.89	9.34	48.23	54.00	-5.77	AVG
3	5460.000	48.40	9.35	57.75	74.00	-16.25	peak
4	5460.000	38.77	9.35	48.12	54.00	-5.88	AVG
5	5470.000	49.47	9.35	58.82	68.20	-9.38	peak

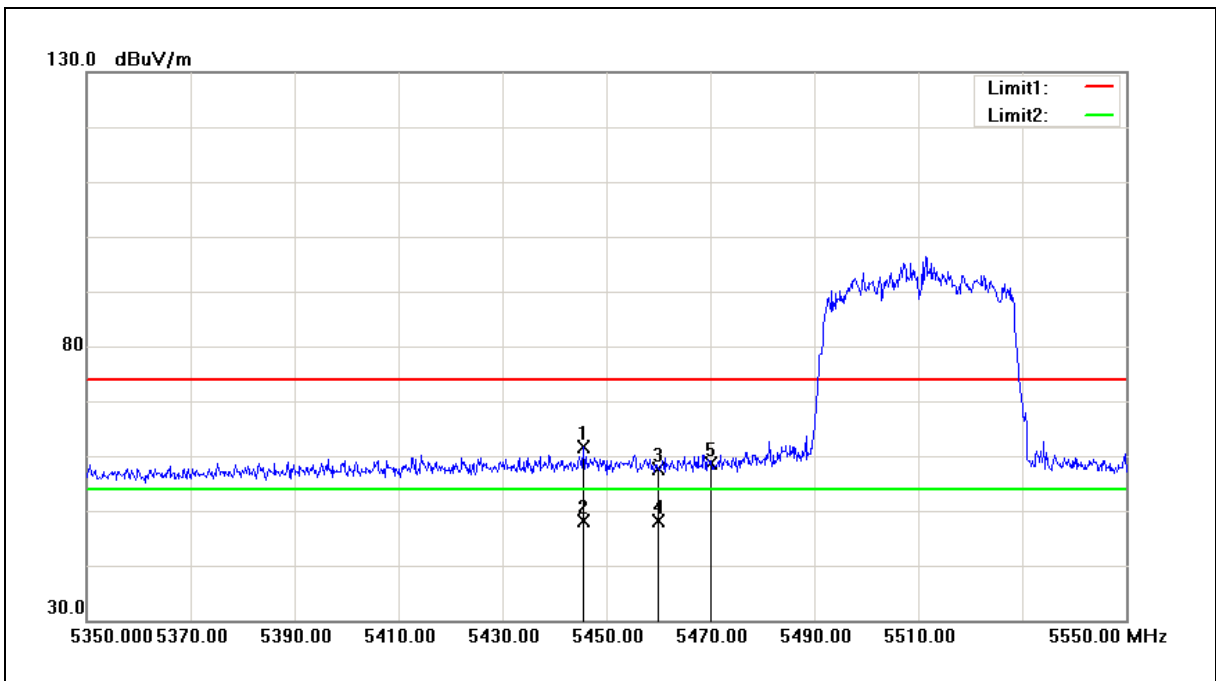
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5510MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	08/18/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5445.600	52.17	9.34	61.51	74.00	-12.49	peak
2	5445.600	38.78	9.34	48.12	54.00	-5.88	AVG
3	5460.000	48.18	9.35	57.53	74.00	-16.47	peak
4	5460.000	38.89	9.35	48.24	54.00	-5.76	AVG
5	5470.000	49.24	9.35	58.59	68.20	-9.61	peak

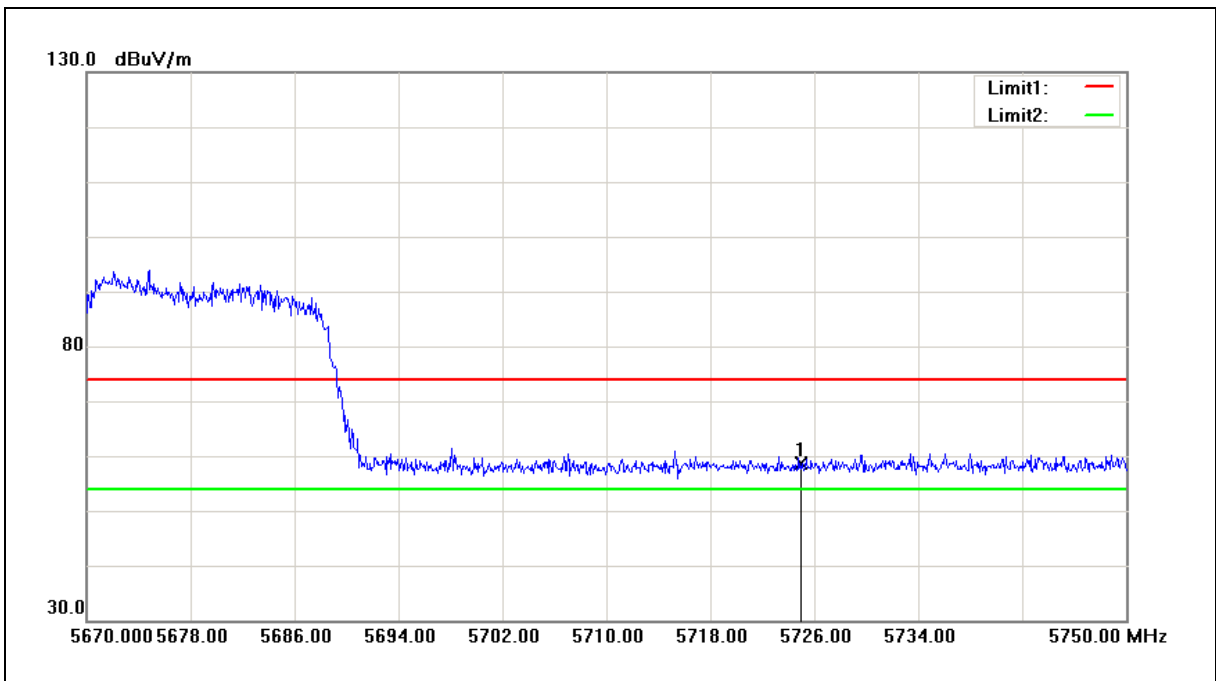
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5670MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	08/18/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5725.000	48.89	9.86	58.75	68.20	-9.45	peak

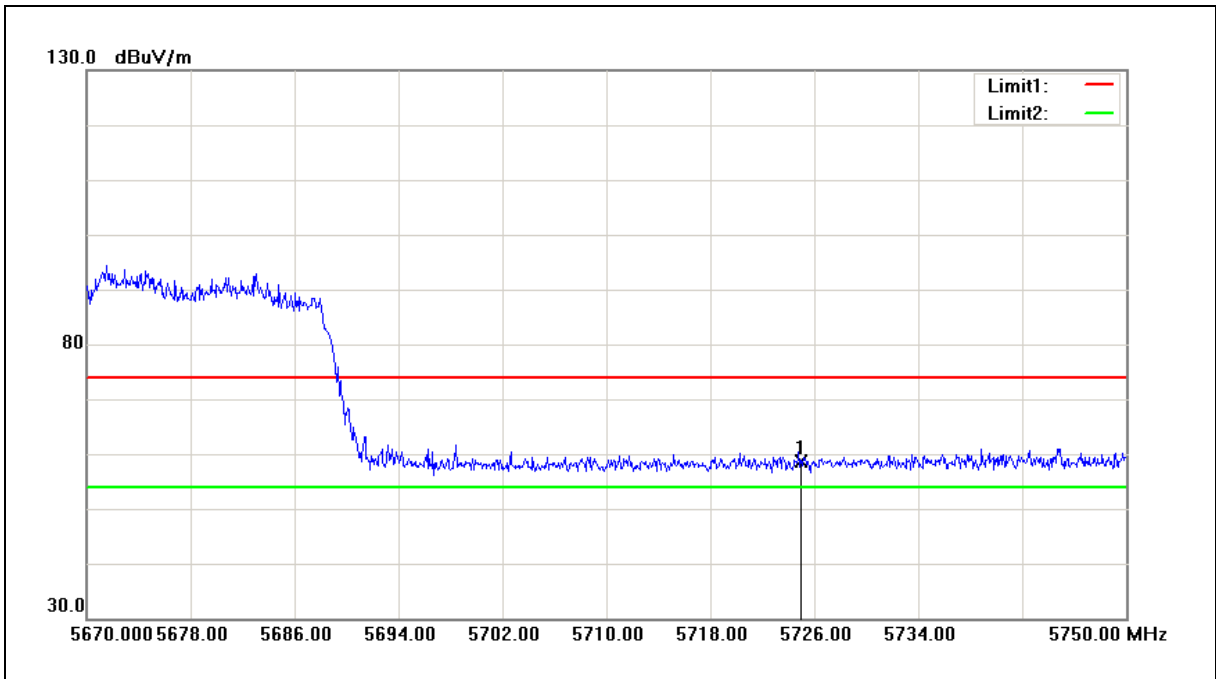
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5670MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	08/18/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5725.000	48.76	9.86	58.62	68.20	-9.58	peak

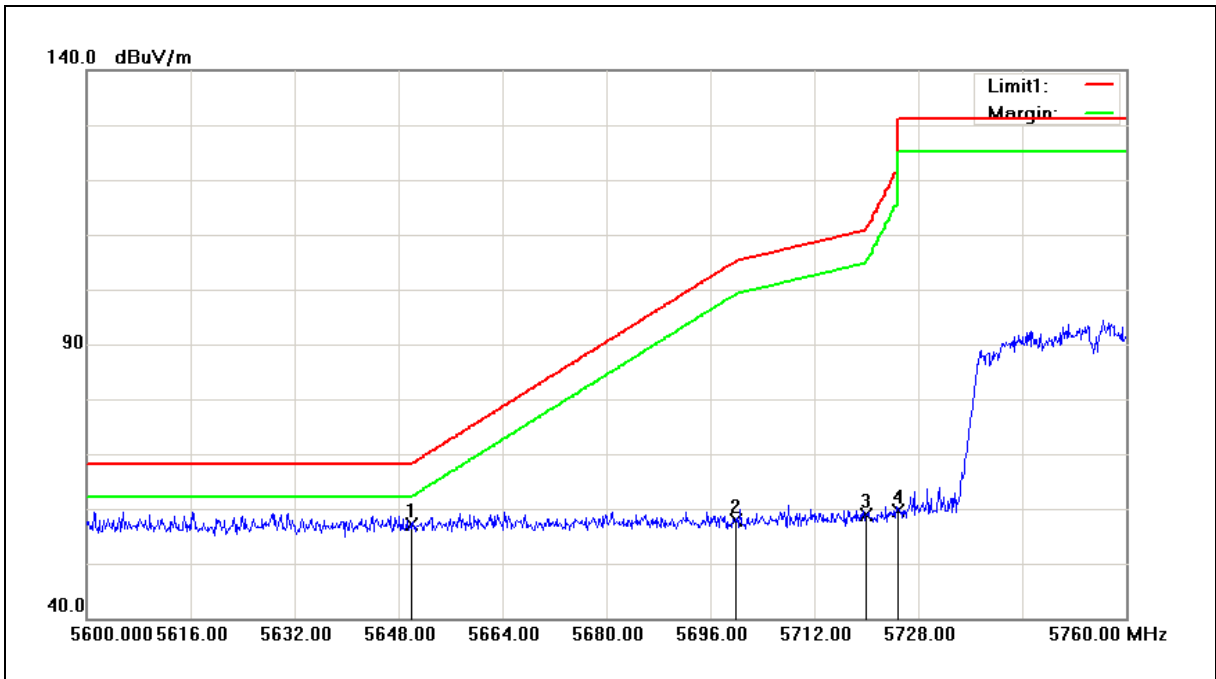
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5755MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	08/18/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5650.000	47.40	9.70	57.10	68.20	-11.10	peak
2	5700.000	48.05	9.80	57.85	105.20	-47.35	peak
3	5720.000	49.11	9.85	58.96	110.80	-51.84	peak
4	5725.000	49.89	9.86	59.75	122.20	-62.45	peak

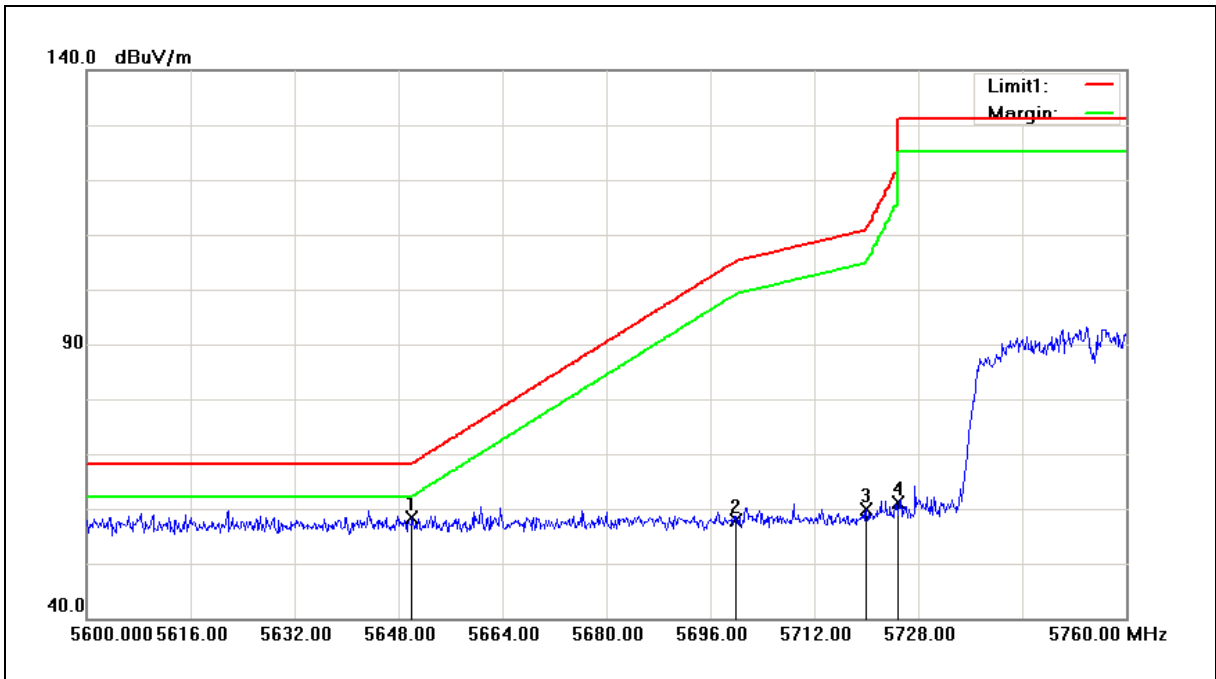
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5755MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	08/18/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5650.000	48.58	9.70	58.28	68.20	-9.92	peak
2	5700.000	48.02	9.80	57.82	105.20	-47.38	peak
3	5720.000	50.07	9.85	59.92	110.80	-50.88	peak
4	5725.000	51.30	9.86	61.16	122.20	-61.04	peak

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

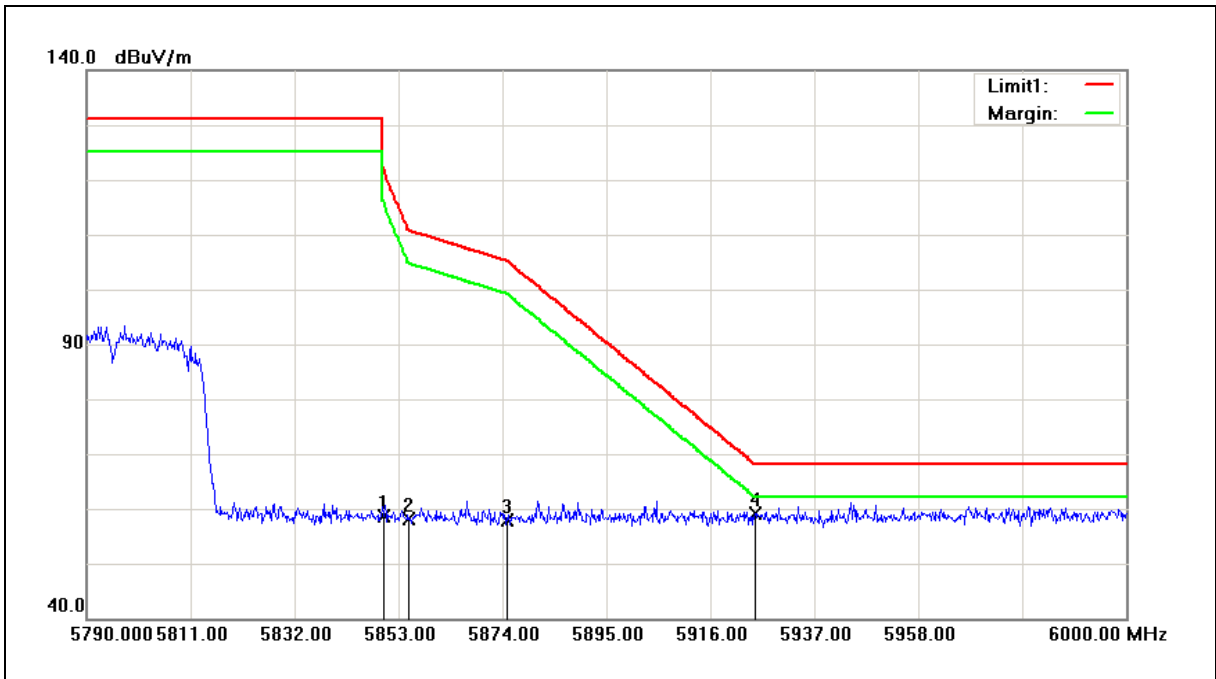
2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

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





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5795MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	08/18/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	48.59	10.11	58.70	122.20	-63.50	peak
2	5855.000	48.03	10.12	58.15	110.80	-52.65	peak
3	5875.000	47.76	10.17	57.93	105.20	-47.27	peak
4	5925.000	48.90	10.28	59.18	68.20	-9.02	peak

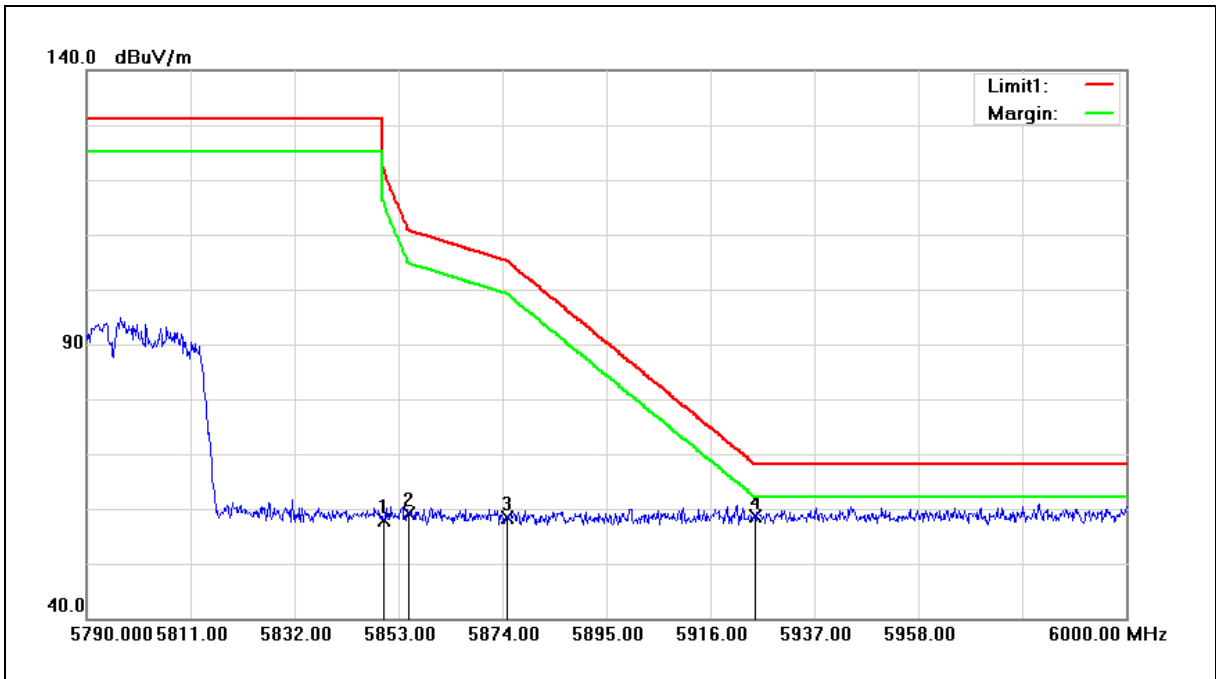
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5795MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	08/18/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	47.85	10.11	57.96	122.20	-64.24	peak
2	5855.000	49.11	10.12	59.23	110.80	-51.57	peak
3	5875.000	48.26	10.17	58.43	105.20	-46.77	peak
4	5925.000	48.30	10.28	58.58	68.20	-9.62	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.

#### 4.4. Maximum Conducted Output Power Measurement

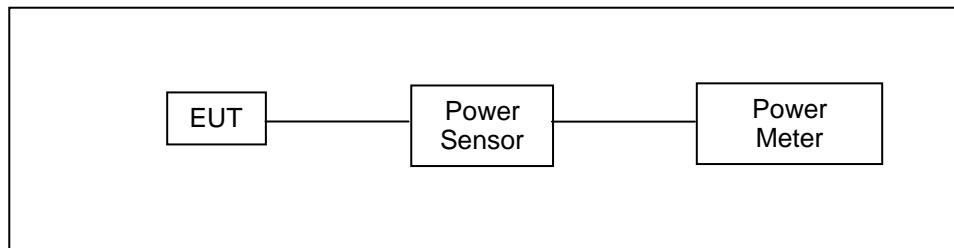
##### ■ Limit

Frequency Range (MHz)	FCC Maximum Conducted Output Power Limit
	Client
5.150 ~ 5.250 GHz	The lesser of 250mW (24dBm)
5.250 ~ 5.350 GHz	The lesser of 250mW (24dBm) or 11dBm + 10log (B)
5.470 ~ 5.725 GHz	The lesser of 250mW (24dBm) or 11dBm + 10log (B)
5.725 ~ 5.850 GHz	The lesser of 1W (30dBm)

According FCC KDB 662911 D01 v02r01 – for power measurements on IEEE802.11 devices,

\* SISO mode : Max. Gain = 5.96 dBi < 6dBi

##### ■ Test Setup



##### ■ Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
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-1 500	140303	02/22/2017	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

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

##### ■ Test Procedure

The test is performed in accordance with KDB789033: D02 General UNII Test Procedures New Rules v01r04, Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices

Section (E) Maximum Conducted Output Power

3. Measurement using a Power Meter (PM)

b) Method PM-G (Measurement using a gated RF average power meter)



■ Test Result

Test Item		Maximum Conducted Output Power		
Test Mode		Mode 2: IEEE 802.11a Continuous TX mode		
Frequency (MHz)	Data Rate	ANT-0		FCC Limit (dBm)
		Max. Output Power		
		(dBm)	(W)	
5180	6M	<b>12.16</b>	<b>0.016</b>	≤ 24
5200		12.08	0.016	
5220		11.98	0.016	
5240		12.09	0.016	
5260		10.99	0.013	
5280		11.00	0.013	
5300		11.03	0.013	
5320		<b>11.05</b>	<b>0.013</b>	
5500		10.30	0.011	
5520		<b>10.36</b>	<b>0.011</b>	
5540		10.24	0.011	
5560		10.22	0.011	
5580		10.09	0.010	
5660		9.77	0.009	
5680		9.69	0.009	
5700		9.49	0.009	
5745		9.81	0.010	≤ 30
5765		9.89	0.010	
5785		<b>9.93</b>	<b>0.010</b>	
5805		9.88	0.010	
5825	9.89	0.010		

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



Test Item		Maximum Conducted Output Power		
Test Mode		Mode 2: IEEE 802.11a Continuous TX mode		
Frequency (MHz)	Data Rate	ANT-0		FCC Limit (dBm)
		Max. Output Power		
		(dBm)	(W)	
5180	54M	12.13	0.016	≤ 24
5200		11.99	0.016	
5220		11.96	0.016	
5240		12.06	0.016	
5260		10.90	0.012	
5280		10.96	0.012	
5300		11.01	0.013	
5320		11.02	0.013	
5500		10.22	0.011	
5520		10.34	0.011	
5540		10.18	0.010	
5560		10.13	0.010	
5580		10.00	0.010	
5660		9.75	0.009	
5680		9.65	0.009	
5700		9.43	0.009	
5745		9.71	0.009	
5765		9.80	0.010	
5785		9.92	0.010	
5805		9.88	0.010	
5825	9.82	0.010		

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



Test Item		Maximum Conducted Output Power		
Test Mode		Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode		
Frequency (MHz)	Data Rate	ANT-0		FCC Limit (dBm)
		Max. Output Power		
		(dBm)	(W)	
5180	6.5M	<b>10.60</b>	<b>0.011</b>	≤ 24
5200		10.45	0.011	
5220		10.31	0.011	
5240		10.38	0.011	
5260		10.31	0.011	
5280		10.57	0.011	
5300		<b>10.60</b>	<b>0.011</b>	
5320		10.53	0.011	
5500		9.40	0.009	
5520		<b>9.66</b>	<b>0.009</b>	
5540		9.36	0.009	
5560		9.24	0.008	
5580		9.39	0.009	
5660		8.90	0.008	
5680		8.73	0.007	
5700		8.98	0.008	
5745		8.92	0.008	
5765		8.98	0.008	
5785		9.13	0.008	
5805		9.28	0.008	
5825	<b>9.29</b>	<b>0.008</b>		

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



Test Item		Maximum Conducted Output Power		
Test Mode		Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode		
Frequency (MHz)	Data Rate	ANT-0		FCC Limit (dBm)
		Max. Output Power		
		(dBm)	(W)	
5180	72.2M	10.53	0.011	≤ 24
5200		10.38	0.011	
5220		10.24	0.011	
5240		10.37	0.011	
5260		10.25	0.011	
5280		10.50	0.011	
5300		10.57	0.011	
5320		10.58	0.011	
5500		9.33	0.009	
5520		9.63	0.009	
5540		9.29	0.008	
5560		9.18	0.008	
5580		9.32	0.009	
5660		8.87	0.008	
5680		8.70	0.007	
5700		8.90	0.008	
5745		8.83	0.008	≤ 30
5765		8.96	0.008	
5785		9.09	0.008	
5805		9.23	0.008	
5825	9.21	0.008		

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



Test Item		Maximum Conducted Output Power			
Test Mode		Mode 4: IEEE 802.11n 5GHz 40MHz Continuous TX mode			
Frequency (MHz)	Data Rate	ANT-0		FCC Limit (dBm)	
		Max. Output Power			
		(dBm)	(W)		
5190	13.5M	12.20	0.017	≤ 24	
5230		<b>12.39</b>	<b>0.017</b>		
5270		12.58	0.018		
5310		<b>12.69</b>	<b>0.019</b>		
5510		9.86	0.010		
5550		9.83	0.010		
5590		9.82	0.010		
5670		9.75	0.009		
5755		<b>10.21</b>	<b>0.010</b>		≤ 30
5795		10.20	0.010		
5190	150M	12.18	0.017	≤ 24	
5230		12.29	0.017		
5270		12.55	0.018		
5310		12.61	0.018		
5510		9.84	0.010		
5550		9.75	0.009		
5590		9.79	0.010		
5670		9.69	0.009		
5755		10.12	0.010		≤ 30
5795		10.15	0.010		

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

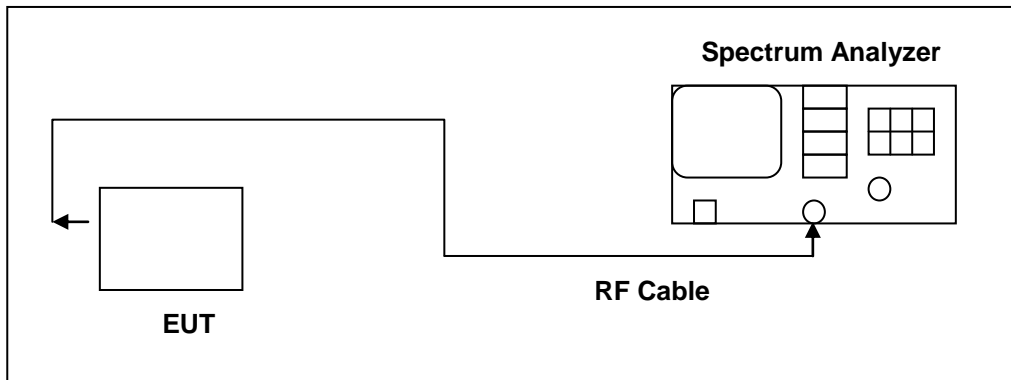


#### 4.5. 26dB RF Bandwidth Measurement

■ **Limit**

N/A

■ **Test Setup**



■ **Test Instruments**

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/19/2016	1 year
Microwave Cable	EMCI	EMC104-SM-SM-1 500	140303	02/22/2017	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

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

■ **Test Procedure**

The test is performed in accordance with KDB789033: D02 General UNII Test Procedures New Rules v01r04, Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	>26dB Bandwidth
RBW	Approximately 1% of the emission bandwidth
VBW	VBW > RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto



## ■ Test Result

Test Item	26dB RF Bandwidth Measurement
Test Mode	Mode 2: IEEE 802.11a Continuous TX mode
Frequency (MHz)	ANT-0
	26dB Bandwidth (MHz)
5180	18.980
5200	19.070
5240	19.370
5260	18.800
5280	18.800
5320	18.850
5500	18.860
5560	19.270
5700	18.890

Test Item	26dB RF Bandwidth Measurement
Test Mode	Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode
Frequency (MHz)	ANT-0
	26dB Bandwidth (MHz)
5180	19.210
5200	19.280
5240	19.240
5260	19.110
5280	19.350
5320	19.120
5500	19.350
5560	19.160
5700	19.060

Note: The 99% occupied bandwidth not crossed 5250MHz.



Test Item	26dB RF Bandwidth Measurement
Test Mode	Mode 4: IEEE 802.11n 5GHz 40MHz Continuous TX mode
Frequency (MHz)	ANT-0
	26dB Bandwidth (MHz)
5190	39.870
5230	39.910
5270	43.510
5310	39.990
5510	39.950
5550	39.540
5670	40.060

Note: The 99% occupied bandwidth not crossed 5250MHz.



■ Test Graphs

Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0	
5180 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.18000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center 5.18 GHz #Res BW 300 kHz</p> <p>Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth <b>16.516 MHz</b></p> <p>Total Power 17.9 dBm</p> <p>Transmit Freq Error 3.017 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 18.98 MHz</p> <p>x dB -26.00 dB</p>
5200 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.20000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center 5.2 GHz #Res BW 300 kHz</p> <p>Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth <b>16.495 MHz</b></p> <p>Total Power 17.7 dBm</p> <p>Transmit Freq Error -2.898 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 19.07 MHz</p> <p>x dB -26.00 dB</p>
5240 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.24000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center 5.24 GHz #Res BW 300 kHz</p> <p>Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth <b>16.452 MHz</b></p> <p>Total Power 17.5 dBm</p> <p>Transmit Freq Error -7.315 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 19.37 MHz</p> <p>x dB -26.00 dB</p>



Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0	
5260 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.26000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center 5.26 GHz #Res BW 300 kHz</p> <p>Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth <b>16.500 MHz</b></p> <p>Total Power 16.9 dBm</p> <p>Transmit Freq Error -20.544 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 18.80 MHz</p> <p>x dB -26.00 dB</p>
5280 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.28000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center 5.28 GHz #Res BW 300 kHz</p> <p>Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth <b>16.474 MHz</b></p> <p>Total Power 16.3 dBm</p> <p>Transmit Freq Error -15.037 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 18.80 MHz</p> <p>x dB -26.00 dB</p>
5320 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.32000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center 5.32 GHz #Res BW 300 kHz</p> <p>Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth <b>16.431 MHz</b></p> <p>Total Power 16.0 dBm</p> <p>Transmit Freq Error -47.383 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 18.85 MHz</p> <p>x dB -26.00 dB</p>



Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0	
5500 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.500000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center 5.5 GHz #Res BW 300 kHz</p> <p>Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth <b>16.548 MHz</b></p> <p>Total Power 15.4 dBm</p> <p>Transmit Freq Error 17.936 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 18.86 MHz</p> <p>x dB -26.00 dB</p>
5560 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.560000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center 5.56 GHz #Res BW 300 kHz</p> <p>Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth <b>16.500 MHz</b></p> <p>Total Power 15.1 dBm</p> <p>Transmit Freq Error 508 Hz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 19.27 MHz</p> <p>x dB -26.00 dB</p>
5700 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.700000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center 5.7 GHz #Res BW 300 kHz</p> <p>Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth <b>16.465 MHz</b></p> <p>Total Power 14.8 dBm</p> <p>Transmit Freq Error -12.871 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 18.89 MHz</p> <p>x dB -26.00 dB</p>



Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode_ ANT-0	
5180 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.180000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center 5.18 GHz #Res BW 300 kHz</p> <p>Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth <b>17.513 MHz</b></p> <p>Total Power 14.7 dBm</p> <p>Transmit Freq Error 3.925 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 19.21 MHz</p> <p>x dB -26.00 dB</p>
5200 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.200000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center 5.2 GHz #Res BW 300 kHz</p> <p>Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth <b>17.519 MHz</b></p> <p>Total Power 14.2 dBm</p> <p>Transmit Freq Error -10.877 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 19.28 MHz</p> <p>x dB -26.00 dB</p>
5240 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.240000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center 5.24 GHz #Res BW 300 kHz</p> <p>Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth <b>17.538 MHz</b></p> <p>Total Power 13.7 dBm</p> <p>Transmit Freq Error -1.164 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 19.24 MHz</p> <p>x dB -26.00 dB</p>





Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode_ ANT-0	
5260 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.26000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center 5.26 GHz #Res BW 300 kHz</p> <p>Occupied Bandwidth <b>17.530 MHz</b></p> <p>Total Power 14.1 dBm</p> <p>Transmit Freq Error -18.321 kHz</p> <p>x dB Bandwidth 19.11 MHz</p> <p>OBW Power 99.00 %</p> <p>x dB -26.00 dB</p>
5280 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.28000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center 5.28 GHz #Res BW 300 kHz</p> <p>Occupied Bandwidth <b>17.505 MHz</b></p> <p>Total Power 14.3 dBm</p> <p>Transmit Freq Error -19.488 kHz</p> <p>x dB Bandwidth 19.35 MHz</p> <p>OBW Power 99.00 %</p> <p>x dB -26.00 dB</p>
5320 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.32000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center 5.32 GHz #Res BW 300 kHz</p> <p>Occupied Bandwidth <b>17.532 MHz</b></p> <p>Total Power 13.6 dBm</p> <p>Transmit Freq Error -3.301 kHz</p> <p>x dB Bandwidth 19.12 MHz</p> <p>OBW Power 99.00 %</p> <p>x dB -26.00 dB</p>






Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode_ ANT-0	
5500 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.50000000 GHz        Trig: Free Run        #Atten: 20 dB</p> <p>Ref Offset 15.3 dB        Ref 25.30 dBm</p> <p>Center 5.5 GHz        #Res BW 300 kHz        #VBW 1 MHz        Span 25 MHz        Sweep 1 ms</p> <p>Occupied Bandwidth <b>17.506 MHz</b>        Total Power 12.6 dBm        Transmit Freq Error 3.237 kHz        x dB Bandwidth 19.35 MHz</p> <p>OBW Power 99.00 %        x dB -26.00 dB</p> <p>Center Freq 5.50000000 GHz        CF Step 2.500000 MHz        Freq Offset 0 Hz</p>
5560 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.56000000 GHz        Trig: Free Run        #Atten: 20 dB</p> <p>Ref Offset 15.3 dB        Ref 25.30 dBm</p> <p>Center 5.56 GHz        #Res BW 300 kHz        #VBW 1 MHz        Span 25 MHz        Sweep 1 ms</p> <p>Occupied Bandwidth <b>17.524 MHz</b>        Total Power 12.6 dBm        Transmit Freq Error -1.106 kHz        x dB Bandwidth 19.16 MHz</p> <p>OBW Power 99.00 %        x dB -26.00 dB</p> <p>Center Freq 5.56000000 GHz        CF Step 2.500000 MHz        Freq Offset 0 Hz</p>
5700 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.70000000 GHz        Trig: Free Run        #Atten: 20 dB</p> <p>Ref Offset 15.3 dB        Ref 25.30 dBm</p> <p>Center 5.7 GHz        #Res BW 300 kHz        #VBW 1 MHz        Span 25 MHz        Sweep 1 ms</p> <p>Occupied Bandwidth <b>17.496 MHz</b>        Total Power 12.0 dBm        Transmit Freq Error -5.052 kHz        x dB Bandwidth 19.06 MHz</p> <p>OBW Power 99.00 %        x dB -26.00 dB</p> <p>Center Freq 5.70000000 GHz        CF Step 2.500000 MHz        Freq Offset 0 Hz</p>



Mode 4: IEEE 802.11n 5GHz 40MHz Continuous TX mode_ ANT-0	
5190 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.190000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center 5.19 GHz #Res BW 1 MHz</p> <p>Span 50 MHz Sweep 1 ms</p> <p>Occupied Bandwidth <b>36.007 MHz</b></p> <p>Total Power 16.7 dBm</p> <p>Transmit Freq Error 28.198 kHz</p> <p>x dB Bandwidth 39.87 MHz</p> <p>OBW Power 99.00 %</p> <p>x dB -26.00 dB</p>
5230 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.230000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center 5.23 GHz #Res BW 1 MHz</p> <p>Span 50 MHz Sweep 1 ms</p> <p>Occupied Bandwidth <b>36.087 MHz</b></p> <p>Total Power 16.7 dBm</p> <p>Transmit Freq Error 34.489 kHz</p> <p>x dB Bandwidth 39.91 MHz</p> <p>OBW Power 99.00 %</p> <p>x dB -26.00 dB</p>



Mode 4: IEEE 802.11n 5GHz 40MHz Continuous TX mode_ ANT-0	
5270 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.27000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Occupied Bandwidth: 36.109 MHz</p> <p>Total Power: 17.6 dBm</p> <p>Transmit Freq Error: 1.072 kHz</p> <p>x dB Bandwidth: 43.51 MHz</p> <p>OBW Power: 99.00 %</p> <p>x dB: -26.00 dB</p>
5310 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.31000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Occupied Bandwidth: 36.050 MHz</p> <p>Total Power: 17.6 dBm</p> <p>Transmit Freq Error: 15.257 kHz</p> <p>x dB Bandwidth: 39.99 MHz</p> <p>OBW Power: 99.00 %</p> <p>x dB: -26.00 dB</p>



Mode 4: IEEE 802.11n 5GHz 40MHz Continuous TX mode_ ANT-0	
5510 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.51000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center 5.51 GHz #Res BW 1 MHz</p> <p>Span 50 MHz Sweep 1 ms</p> <p>Occupied Bandwidth <b>36.014 MHz</b></p> <p>Total Power 13.6 dBm</p> <p>Transmit Freq Error 78.073 kHz</p> <p>x dB Bandwidth 39.95 MHz</p> <p>OBW Power 99.00 %</p> <p>x dB -26.00 dB</p>
5550 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.55000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center 5.55 GHz #Res BW 1 MHz</p> <p>Span 50 MHz Sweep 1 ms</p> <p>Occupied Bandwidth <b>36.147 MHz</b></p> <p>Total Power 13.9 dBm</p> <p>Transmit Freq Error 18.656 kHz</p> <p>x dB Bandwidth 39.54 MHz</p> <p>OBW Power 99.00 %</p> <p>x dB -26.00 dB</p>
5670 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.67000000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center 5.67 GHz #Res BW 1 MHz</p> <p>Span 50 MHz Sweep 1 ms</p> <p>Occupied Bandwidth <b>36.087 MHz</b></p> <p>Total Power 12.8 dBm</p> <p>Transmit Freq Error -4.413 kHz</p> <p>x dB Bandwidth 40.06 MHz</p> <p>OBW Power 99.00 %</p> <p>x dB -26.00 dB</p>

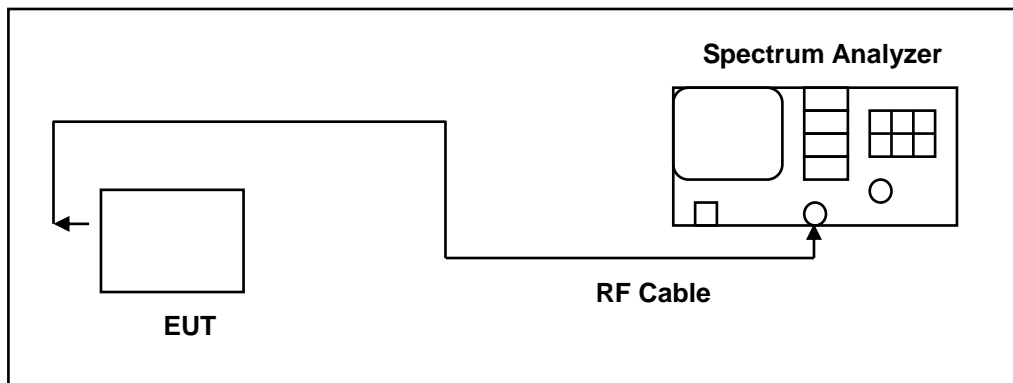
#### 4.6. 6dB RF Bandwidth Measurement

■ **Limit**

**6dB RF Bandwidth**

Systems using digital modulation techniques may operate in the 5725~5850MHz bands. The minimum 6 dB band-width shall be at least 500 kHz.

■ **Test Setup**



■ **Test Instruments**

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/19/2016	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

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

■ **Test Procedure**

**6dB RF Bandwidth**

The EUT tested to UNII test procedure of KDB789033 D02 for compliance to FCC 47CFR 15.407 requirements. The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW 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.



## ■ Test Result

Test Item	6dB RF Bandwidth	
Test Mode	Mode 2: IEEE 802.11a Continuous TX mode	
Frequency (MHz)	6dB Bandwidth (kHz)	Limit (kHz)
	ANT-0	
5745	15100	> 500
5785	15140	> 500
5825	15810	> 500

Test Item	6dB RF Bandwidth	
Test Mode	Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode	
Frequency (MHz)	6dB Bandwidth (kHz)	Limit (kHz)
	ANT-0	
5745	16280	> 500
5785	17150	> 500
5825	15040	> 500

Test Item	6dB RF Bandwidth	
Test Mode	Mode 4: IEEE 802.11n 5GHz 40MHz Continuous TX mode	
Frequency (MHz)	6dB Bandwidth (kHz)	Limit (kHz)
	ANT-0	
5755	33780	> 500
5795	35150	> 500



■ Test Graphs

Mode 2: IEEE 802.11a Continuous TX mode_ANT-0	
5745 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.74500000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center: 5.745 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms</p> <p>Occupied Bandwidth: <b>16.334 MHz</b></p> <p>Total Power: 16.5 dBm</p> <p>Transmit Freq Error: -30.183 kHz x dB Bandwidth: 15.10 MHz</p> <p>OBW Power: 99.00 % x dB: -6.00 dB</p> <p>Center Freq: 5.74500000 GHz</p> <p>CF Step: 3.000000 MHz</p> <p>Freq Offset: 0 Hz</p>
5785 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.78500000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center: 5.785 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms</p> <p>Occupied Bandwidth: <b>16.337 MHz</b></p> <p>Total Power: 16.7 dBm</p> <p>Transmit Freq Error: -36.257 kHz x dB Bandwidth: 15.14 MHz</p> <p>OBW Power: 99.00 % x dB: -6.00 dB</p> <p>Center Freq: 5.78500000 GHz</p> <p>CF Step: 3.000000 MHz</p> <p>Freq Offset: 0 Hz</p>
5825 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.82500000 GHz</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center: 5.825 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms</p> <p>Occupied Bandwidth: <b>16.346 MHz</b></p> <p>Total Power: 14.7 dBm</p> <p>Transmit Freq Error: -40.416 kHz x dB Bandwidth: 15.81 MHz</p> <p>OBW Power: 99.00 % x dB: -6.00 dB</p> <p>Center Freq: 5.82500000 GHz</p> <p>CF Step: 3.000000 MHz</p> <p>Freq Offset: 0 Hz</p>



Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode_ANT-0	
5745 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.745000000 GHz Trig: Free Run #IFGain: Low #Att: 20 dB</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center: 5.745 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms</p> <p>Occupied Bandwidth: <b>17.527 MHz</b> Total Power: 12.9 dBm Transmit Freq Error: -30.711 kHz x dB Bandwidth: 16.28 MHz</p> <p>OBW Power: 99.00 % x dB: -6.00 dB</p> <p>Frequency: 5.745000000 GHz CF Step: 3.000000 MHz Freq Offset: 0 Hz</p>
5785 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.785000000 GHz Trig: Free Run #IFGain: Low #Att: 20 dB</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center: 5.785 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms</p> <p>Occupied Bandwidth: <b>17.533 MHz</b> Total Power: 12.5 dBm Transmit Freq Error: -35.341 kHz x dB Bandwidth: 17.15 MHz</p> <p>OBW Power: 99.00 % x dB: -6.00 dB</p> <p>Frequency: 5.785000000 GHz CF Step: 3.000000 MHz Freq Offset: 0 Hz</p>
5825 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.825000000 GHz Trig: Free Run #IFGain: Low #Att: 20 dB</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center: 5.825 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms</p> <p>Occupied Bandwidth: <b>17.515 MHz</b> Total Power: 12.6 dBm Transmit Freq Error: -29.297 kHz x dB Bandwidth: 15.04 MHz</p> <p>OBW Power: 99.00 % x dB: -6.00 dB</p> <p>Frequency: 5.825000000 GHz CF Step: 3.000000 MHz Freq Offset: 0 Hz</p>





Mode 4: IEEE 802.11n 5GHz 40MHz Continuous TX mode_ANT-0																			
5755 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.755000000 GHz Trig: Free Run #IFGain: Low #Atten: 20 dB</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center: 5.755 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 50 MHz Sweep: 4.8 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>14.9 dBm</td></tr><tr><td><b>35.896 MHz</b></td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-57.623 kHz</td><td>x dB</td><td>-6.00 dB</td></tr><tr><td>x dB Bandwidth</td><td></td><td></td></tr><tr><td>33.78 MHz</td><td></td><td></td></tr></table> <p>Frequency: 5.755000000 GHz CF Step: 5.000000 MHz Freq Offset: 0 Hz</p>	Occupied Bandwidth	Total Power	14.9 dBm	<b>35.896 MHz</b>			Transmit Freq Error	OBW Power	99.00 %	-57.623 kHz	x dB	-6.00 dB	x dB Bandwidth			33.78 MHz		
Occupied Bandwidth	Total Power	14.9 dBm																	
<b>35.896 MHz</b>																			
Transmit Freq Error	OBW Power	99.00 %																	
-57.623 kHz	x dB	-6.00 dB																	
x dB Bandwidth																			
33.78 MHz																			
5795 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.795000000 GHz Trig: Free Run #IFGain: Low #Atten: 20 dB</p> <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Center: 5.795 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 50 MHz Sweep: 4.8 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>14.0 dBm</td></tr><tr><td><b>35.911 MHz</b></td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-65.120 kHz</td><td>x dB</td><td>-6.00 dB</td></tr><tr><td>x dB Bandwidth</td><td></td><td></td></tr><tr><td>35.15 MHz</td><td></td><td></td></tr></table> <p>Frequency: 5.795000000 GHz CF Step: 5.000000 MHz Freq Offset: 0 Hz</p>	Occupied Bandwidth	Total Power	14.0 dBm	<b>35.911 MHz</b>			Transmit Freq Error	OBW Power	99.00 %	-65.120 kHz	x dB	-6.00 dB	x dB Bandwidth			35.15 MHz		
Occupied Bandwidth	Total Power	14.0 dBm																	
<b>35.911 MHz</b>																			
Transmit Freq Error	OBW Power	99.00 %																	
-65.120 kHz	x dB	-6.00 dB																	
x dB Bandwidth																			
35.15 MHz																			

## 4.7. Peak Power Spectral Density Measurement

### ■ Limit

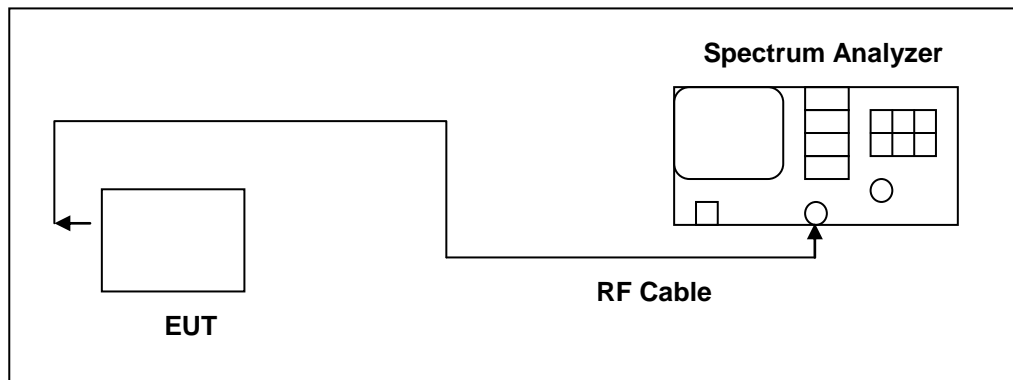
Conducted power spectral density

Frequency Range (MHz)	FCC Limit
	Client
5.150 ~ 5.250 GHz	11 dBm/MHz
5.250 ~ 5.350 GHz	11 dBm/MHz
5.470 ~ 5.725 GHz	11 dBm/MHz
5.725 ~ 5.850 GHz	30 dBm/500KHz

According FCC KDB 662911 D01 v02r01 – for power spectral density measurements on IEEE802.11 devices,

\* SISO mode for ANT-0 : Max. Gain = 5.96 dBi < 6dBi

### ■ Test Setup



### ■ Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/19/2016	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

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

**■ Test Procedure**

The test is performed in accordance with KDB789033: D02 General UNII Test Procedures New Rules v01r04, Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1 MHz (5725 ~ 5850MHz use 100 kHz)
VBW	3 MHz (5725 ~ 5850MHz use 300 kHz)
Detector	RMS
Trace	AVERAGE
Sweep Time	Auto
Trace Average	100 times
Note: If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10\log(500\text{kHz}/100\text{kHz})$ to the measured result.	



■ Test Result

Test Item	Conducted power spectral density			
Test Mode	Mode 2: IEEE 802.11a link mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5180	1.300	0.224	1.524	< 11
5200	1.558	0.224	1.782	
5240	1.588	0.224	1.812	
5260	1.012	0.224	1.236	
5280	0.412	0.224	0.636	
5320	0.591	0.224	0.815	
5500	-0.269	0.224	-0.045	
5560	-0.425	0.224	-0.201	
5700	-1.202	0.224	-0.978	

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Test Item	Conducted power spectral density			
Test Mode	Mode 2: IEEE 802.11a link mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5745	-9.04	0.224	-1.82	< 30
5785	-9.549	0.224	-2.34	
5825	-9.907	0.224	-2.69	

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10\*Log(500k/100k)



Test Item	Conducted power spectral density			
Test Mode	Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5180	-2.060	0.056	-2.004	< 11
5200	-2.072	0.056	-2.016	
5240	-1.879	0.056	-1.823	
5260	-1.869	0.056	-1.813	
5280	-1.599	0.056	-1.543	
5320	-1.815	0.056	-1.759	
5500	-2.934	0.056	-2.878	
5560	-3.179	0.056	-3.123	
5700	-4.089	0.056	-4.033	

Test Item	Conducted power spectral density			
Test Mode	Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5745	-11.86	0.056	-4.81	< 30
5785	-11.89	0.056	-4.84	
5825	-12.38	0.056	-5.33	

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10\*Log(500k/100k)



Test Item	Conducted power spectral density			
Test Mode	Mode 4: IEEE 802.11n 5GHz 40MHz Continuous TX mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5190	-3.065	0.374	-2.691	< 11
5230	-2.843	0.374	-2.469	
5270	-2.474	0.374	-2.100	
5310	-2.338	0.374	-1.964	
5510	-5.272	0.374	-4.898	
5550	-4.909	0.374	-4.535	
5670	-6.047	0.374	-5.673	

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Test Item	Conducted power spectral density			
Test Mode	Mode 4: IEEE 802.11n 5GHz 40MHz Continuous TX mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5755	-13.50	0.374	-6.13	< 30
5795	-13.74	0.374	-6.37	

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10\*Log(500k/100k)



■ Test Graphs

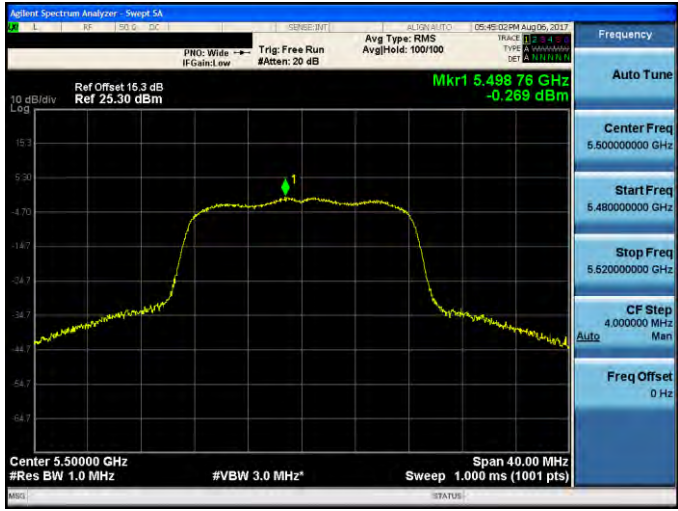
Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0	
5180 MHz	
5200 MHz	
5240 MHz	





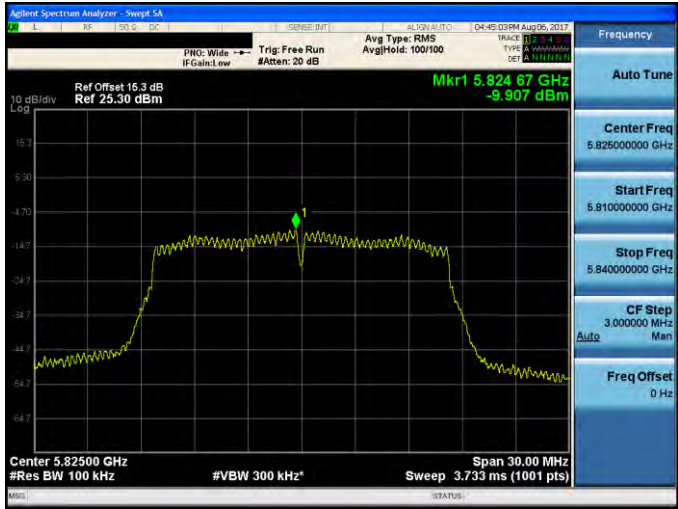
Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0	
5260 MHz	<p>Ref Offset 15.3 dB Ref 25.30 dBm Mkr1 5.258 68 GHz 1.012 dBm</p> <p>Center 5.26000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 40.00 MHz Sweep 1.000 ms (1001 pts)</p>
5280 MHz	<p>Ref Offset 15.3 dB Ref 25.30 dBm Mkr1 5.281 04 GHz 0.412 dBm</p> <p>Center 5.28000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 40.00 MHz Sweep 1.000 ms (1001 pts)</p>
5320 MHz	<p>Ref Offset 15.3 dB Ref 25.30 dBm Mkr1 5.318 60 GHz 0.591 dBm</p> <p>Center 5.32000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 40.00 MHz Sweep 1.000 ms (1001 pts)</p>





Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0	
5500 MHz	
5560 MHz	
5700 MHz	



Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0	
5745 MHz	 <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Mkr1 5.745 27 GHz -9.037 dBm</p> <p>Center 5.74500 GHz #Res BW 100 kHz #VBW 300 kHz* Sweep 3.733 ms (1001 pts)</p> <p>Center Freq: 5.74500000 GHz Start Freq: 5.73000000 GHz Stop Freq: 5.76000000 GHz CF Step: 3.000000 MHz Freq Offset: 0 Hz</p>
5785 MHz	 <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Mkr1 5.784 04 GHz -9.549 dBm</p> <p>Center 5.78500 GHz #Res BW 100 kHz #VBW 300 kHz* Sweep 3.733 ms (1001 pts)</p> <p>Center Freq: 5.78500000 GHz Start Freq: 5.77000000 GHz Stop Freq: 5.80000000 GHz CF Step: 3.000000 MHz Freq Offset: 0 Hz</p>
5825 MHz	 <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Mkr1 5.824 67 GHz -9.907 dBm</p> <p>Center 5.82500 GHz #Res BW 100 kHz #VBW 300 kHz* Sweep 3.733 ms (1001 pts)</p> <p>Center Freq: 5.82500000 GHz Start Freq: 5.81000000 GHz Stop Freq: 5.84000000 GHz CF Step: 3.000000 MHz Freq Offset: 0 Hz</p>

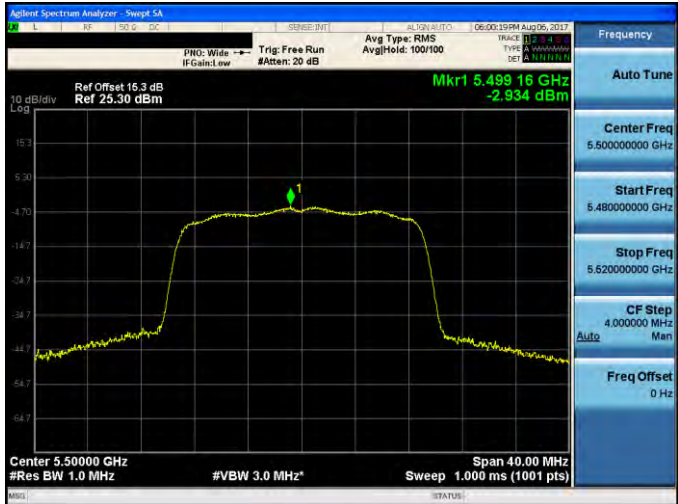
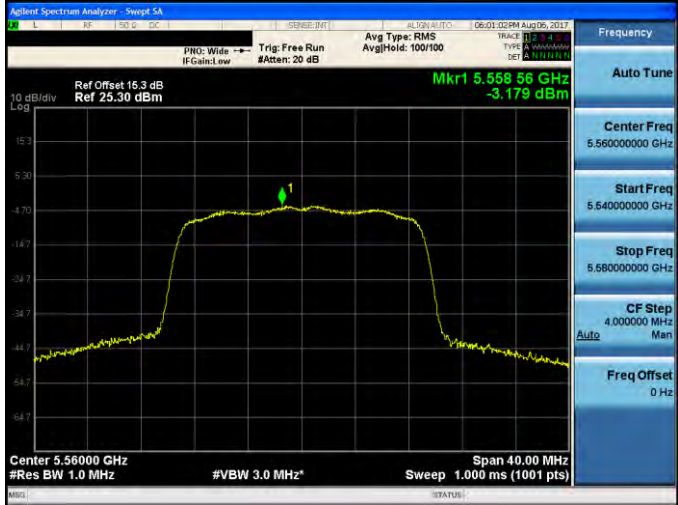



Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode_ ANT-0	
5180 MHz	<p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Mkr1 5.180 80 GHz -2.060 dBm</p> <p>Center 5.180000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Span 40.00 MHz</p> <p>Frequency: Auto Tune Center Freq: 5.18000000 GHz Start Freq: 5.16000000 GHz Stop Freq: 5.20000000 GHz CF Step: 4.000000 MHz (Auto/Man) Freq Offset: 0 Hz</p>
5200 MHz	<p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Mkr1 5.198 96 GHz -2.072 dBm</p> <p>Center 5.200000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Span 40.00 MHz</p> <p>Frequency: Auto Tune Center Freq: 5.20000000 GHz Start Freq: 5.18000000 GHz Stop Freq: 5.22000000 GHz CF Step: 4.000000 MHz (Auto/Man) Freq Offset: 0 Hz</p>
5240 MHz	<p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Mkr1 5.240 96 GHz -1.879 dBm</p> <p>Center 5.240000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Span 40.00 MHz</p> <p>Frequency: Auto Tune Center Freq: 5.24000000 GHz Start Freq: 5.22000000 GHz Stop Freq: 5.26000000 GHz CF Step: 4.000000 MHz (Auto/Man) Freq Offset: 0 Hz</p>

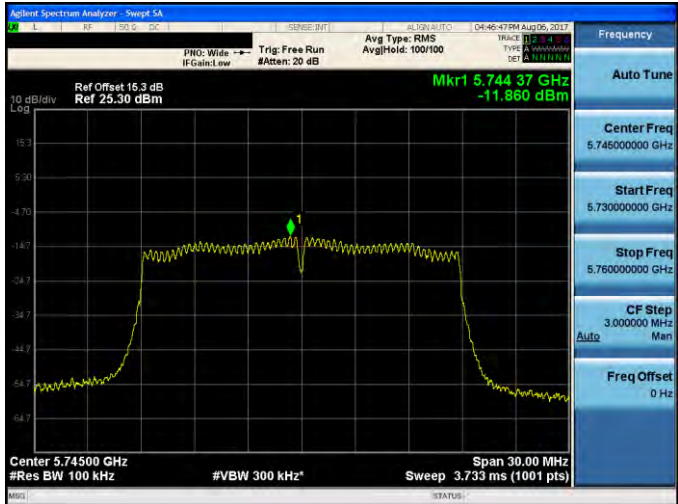
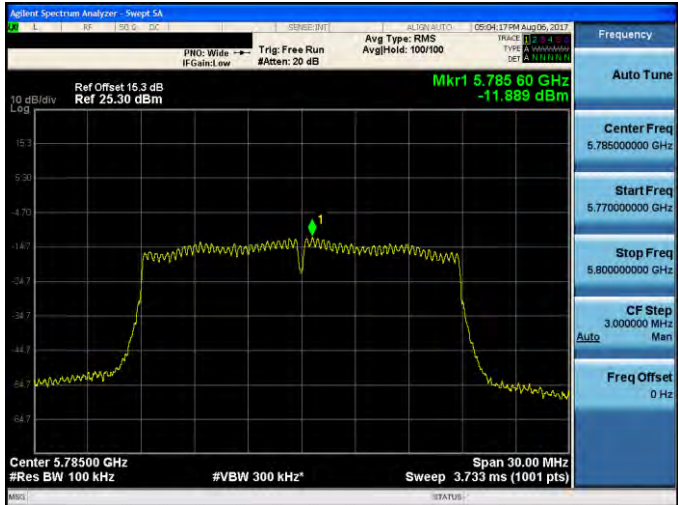
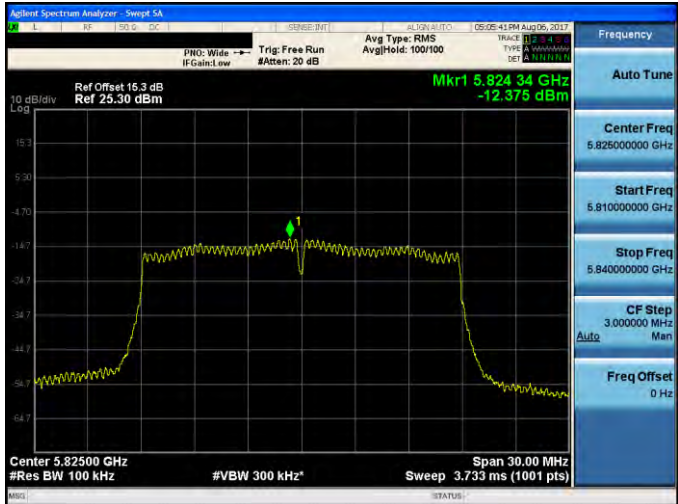


Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode_ ANT-0	
5260 MHz	<p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Mkr1 5.260 80 GHz -1.869 dBm</p> <p>Center 5.260000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Frequency: Auto Tune Center Freq: 5.26000000 GHz Start Freq: 5.24000000 GHz Stop Freq: 5.28000000 GHz CF Step: 4.000000 MHz Freq Offset: 0 Hz</p>
5280 MHz	<p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Mkr1 5.278 68 GHz -1.599 dBm</p> <p>Center 5.280000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Frequency: Auto Tune Center Freq: 5.28000000 GHz Start Freq: 5.26000000 GHz Stop Freq: 5.30000000 GHz CF Step: 4.000000 MHz Freq Offset: 0 Hz</p>
5320 MHz	<p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Mkr1 5.321 08 GHz -1.815 dBm</p> <p>Center 5.320000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Frequency: Auto Tune Center Freq: 5.32000000 GHz Start Freq: 5.30000000 GHz Stop Freq: 5.34000000 GHz CF Step: 4.000000 MHz Freq Offset: 0 Hz</p>



Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode_ ANT-0	
5500 MHz	 <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Mkr1 5.499 16 GHz -2.934 dBm</p> <p>Center 5.500000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Span 40.00 MHz</p>
5560 MHz	 <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Mkr1 5.558 56 GHz -3.179 dBm</p> <p>Center 5.560000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Span 40.00 MHz</p>
5700 MHz	 <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Mkr1 5.701 00 GHz -4.089 dBm</p> <p>Center 5.700000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Span 40.00 MHz</p>



Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode_ ANT-0	
5745 MHz	 <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Mkr1 5.744 37 GHz -11.860 dBm</p> <p>Center 5.74500 GHz #Res BW 100 kHz</p> <p>#VBW 300 kHz</p> <p>Span 30.00 MHz Sweep 3.733 ms (1001 pts)</p>
5785 MHz	 <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Mkr1 5.785 60 GHz -11.889 dBm</p> <p>Center 5.78500 GHz #Res BW 100 kHz</p> <p>#VBW 300 kHz</p> <p>Span 30.00 MHz Sweep 3.733 ms (1001 pts)</p>
5825 MHz	 <p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Mkr1 5.824 34 GHz -12.376 dBm</p> <p>Center 5.82500 GHz #Res BW 100 kHz</p> <p>#VBW 300 kHz</p> <p>Span 30.00 MHz Sweep 3.733 ms (1001 pts)</p>

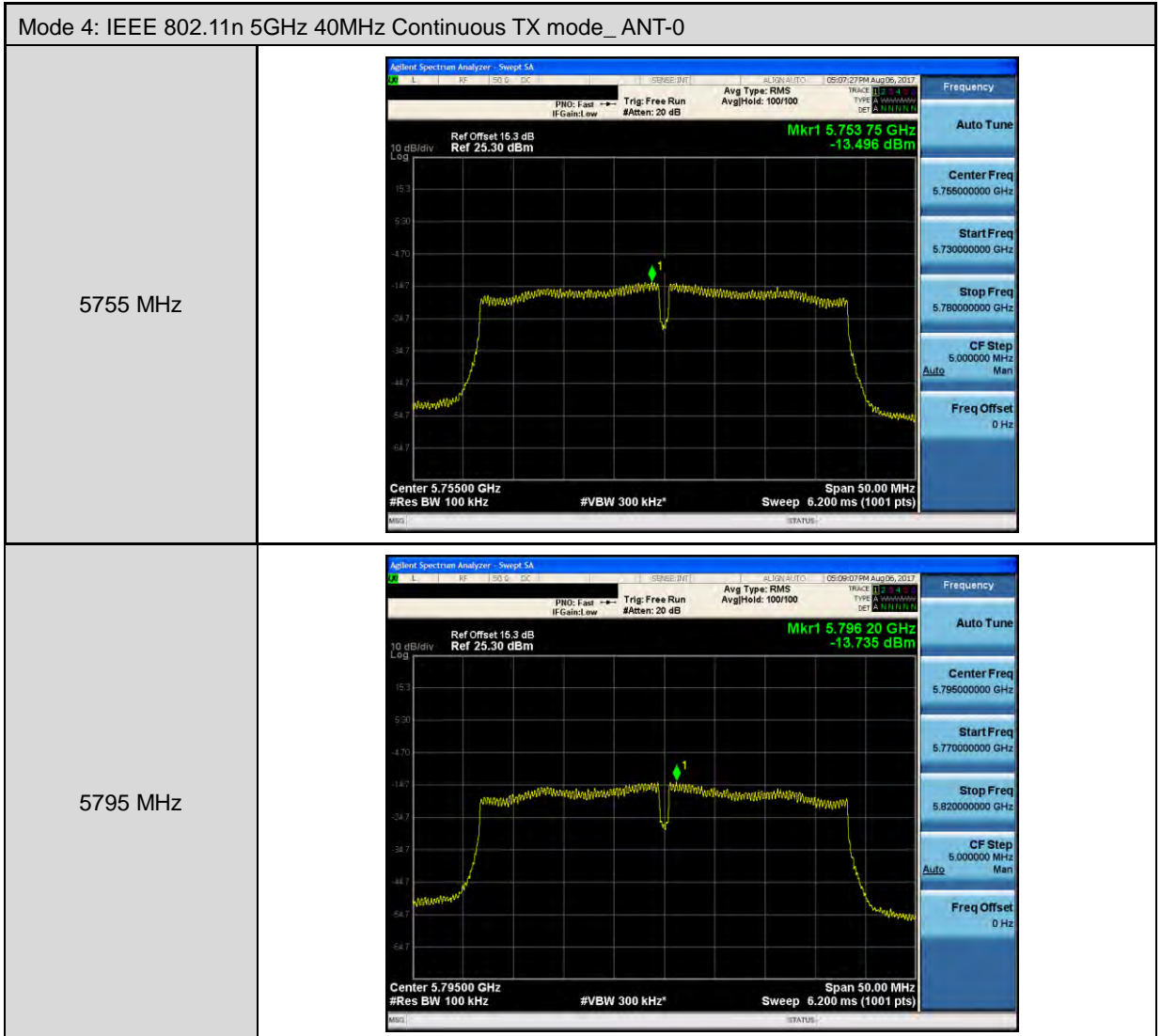








Mode 4: IEEE 802.11n 5GHz 40MHz Continuous TX mode_ ANT-0	
5510 MHz	<p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Mkr1 5.51138 GHz -5.272 dBm</p> <p>Center 5.51000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Span 60.00 MHz</p> <p>Frequency: 5.51000000 GHz Center Freq: 5.51000000 GHz Start Freq: 5.48000000 GHz Stop Freq: 5.54000000 GHz CF Step: 6.000000 MHz Freq Offset: 0 Hz</p>
5550 MHz	<p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Mkr1 5.55174 GHz -4.909 dBm</p> <p>Center 5.55000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Span 60.00 MHz</p> <p>Frequency: 5.55000000 GHz Center Freq: 5.55000000 GHz Start Freq: 5.52000000 GHz Stop Freq: 5.58000000 GHz CF Step: 6.000000 MHz Freq Offset: 0 Hz</p>
5670 MHz	<p>Ref Offset 15.3 dB Ref 25.30 dBm</p> <p>Mkr1 5.67168 GHz -6.047 dBm</p> <p>Center 5.67000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.000 ms (1001 pts)</p> <p>Span 60.00 MHz</p> <p>Frequency: 5.67000000 GHz Center Freq: 5.67000000 GHz Start Freq: 5.64000000 GHz Stop Freq: 5.70000000 GHz CF Step: 6.000000 MHz Freq Offset: 0 Hz</p>

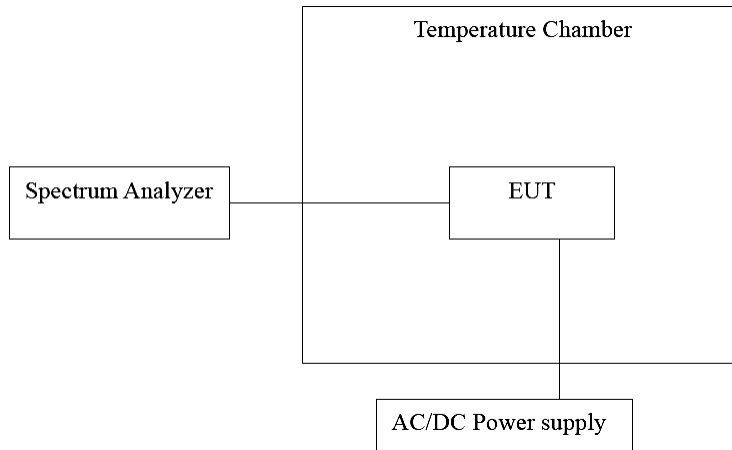


## 4.8. Frequency Stability Measurement

### ■ Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

### ■ Test Setup



### ■ Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4408B	MY45107753	08/08/2016	1 year
Temperature & Humidity Chamber	TAICHY	MHU-225LA	980729	04/17/2017	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

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

### ■ Test Procedure

1. The EUT was placed inside the environmental test chamber and powered by nominal AC/DC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.



■ Test Result

Temperature Variations

Test Item	Frequency Stability					
Frequency	Temp. (°C)	Voltage (Vac)	Measured Freq. (MHz)	Delta Freq. (Hz)	Tolerance (ppm)	Result (Pass/Fail)
5200 MHz	-10	120	5199.9701	-29900	-5.750	Pass
	0		5199.9705	-29500	-5.673	Pass
	10		5199.9697	-30300	-5.827	Pass
	20		5199.9625	-37500	-7.212	Pass
	30		5199.9618	-38200	-7.346	Pass
	40		5199.9598	-40200	-7.731	Pass
	50		5199.9582	-41800	-8.038	Pass
	55		5199.9575	-42500	-8.173	Pass
5280 MHz	-10	120	5279.9651	-34900	-6.610	Pass
	0		5279.9664	-33600	-6.364	Pass
	10		5279.9655	-34500	-6.534	Pass
	20		5279.9616	-38400	-7.273	Pass
	30		5279.9608	-39200	-7.424	Pass
	40		5279.9559	-44100	-8.352	Pass
	50		5279.9552	-44800	-8.485	Pass
	55		5279.9546	-45400	-8.598	Pass
5560 MHz	-10	120	5559.9681	-31900	-5.737	Pass
	0		5559.9685	-31500	-5.665	Pass
	10		5559.9639	-36100	-6.493	Pass
	20		5559.9595	-40500	-7.284	Pass
	30		5559.956	-44000	-7.914	Pass
	40		5559.9556	-44400	-7.986	Pass
	50		5559.9551	-44900	-8.076	Pass
	55		5559.9546	-45400	-8.165	Pass
5785 MHz	-10	120	5784.9635	-36500	-6.309	Pass
	0		5784.9642	-35800	-6.188	Pass
	10		5784.961	-39000	-6.742	Pass
	20		5784.9577	-42300	-7.312	Pass
	30		5784.9567	-43300	-7.485	Pass
	40		5784.9536	-46400	-8.021	Pass
	50		5784.9528	-47200	-8.159	Pass
	55		5784.9525	-47500	-8.211	Pass

Note: The manufacturer's frequency stability specification is better than 20ppm.

**Voltage Variations**

Test Item	Frequency Stability					
Frequency	Temp. (°C)	Voltage (Vac)	Measured Freq. (MHz)	Delta Freq. (Hz)	Tolerance (ppm)	Result (Pass/Fail)
5200 MHz	20	138.00	5199.9643	-35700	-6.865	Pass
		120.00	5199.9625	-37500	-7.212	Pass
		102.00	5199.9617	-38300	-7.365	Pass
5280 MHz	20	138.00	5279.9624	-37600	-7.121	Pass
		120.00	5279.9616	-38400	-7.273	Pass
		102.00	5279.9598	-40200	-7.614	Pass
5560 MHz	20	138.00	5559.9609	-39100	-7.032	Pass
		120.00	5559.9595	-40500	-7.284	Pass
		102.00	5559.9544	-45600	-8.201	Pass
5785 MHz	20	138.00	5784.9588	-41200	-7.122	Pass
		120.00	5784.9577	-42300	-7.312	Pass
		102.00	5784.9568	-43200	-7.468	Pass

Note: The manufacturer's frequency stability specification is better than 20ppm.



## 4.9. Antenna Requirement

### ■ 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 15.407 (a), 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.

### ■ Antenna Connector Construction

See section 2 – antenna information.