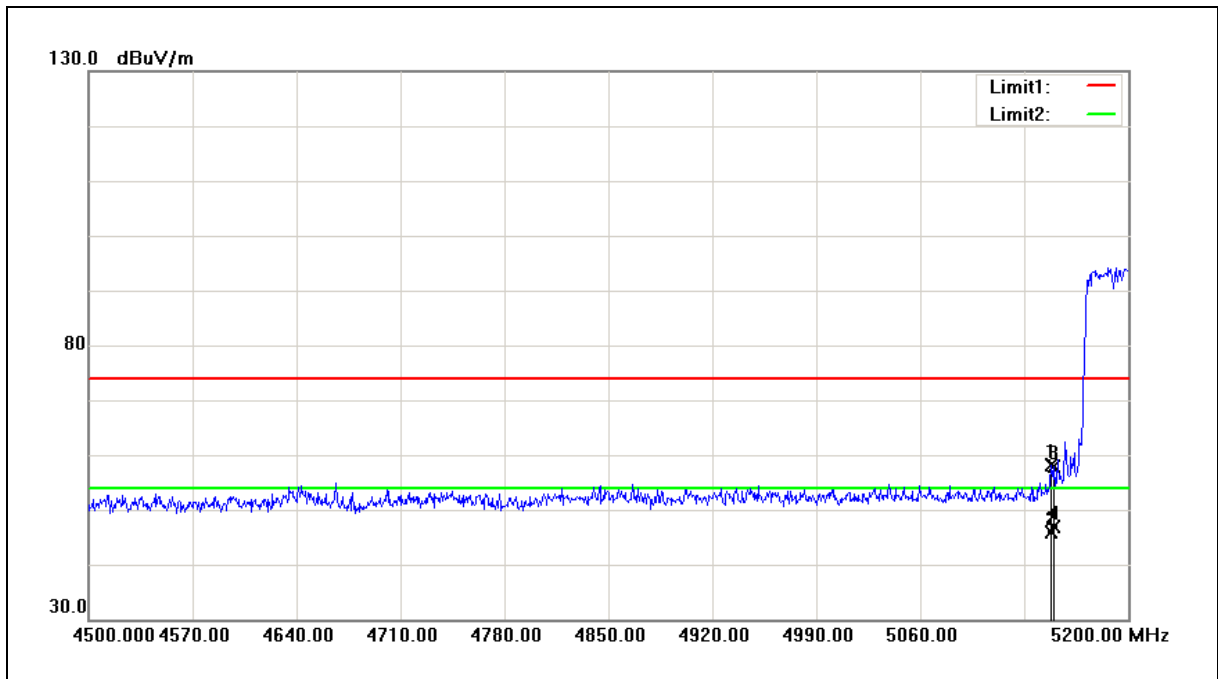




Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	DC 5V
Frequency:	5190MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/12/2017
Ant.Polar.:	Horizontal		
Description:	Antenna Model : EDA-1713-25GC1-A14		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5148.200	49.07	8.97	58.04	74.00	-15.96	peak
2	5148.200	36.92	8.97	45.89	54.00	-8.11	AVG
3	5150.000	49.00	8.97	57.97	74.00	-16.03	peak
4	5150.000	37.96	8.97	46.93	54.00	-7.07	AVG

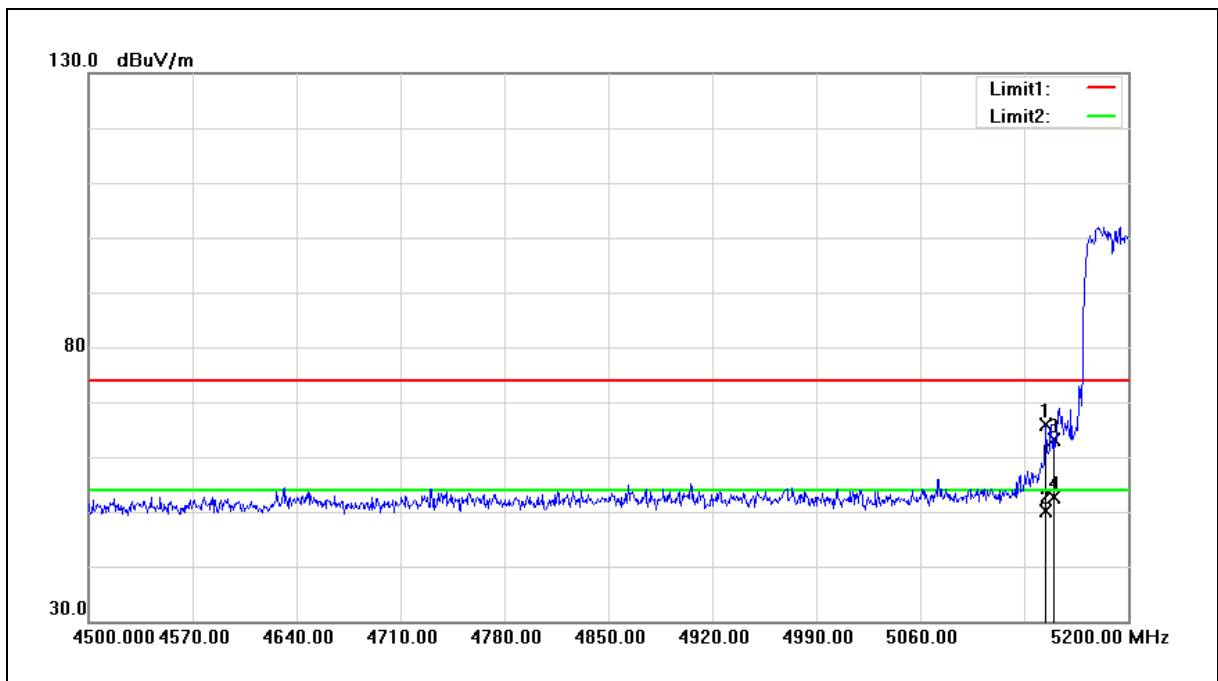
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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:	DC 5V
Frequency:	5190MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/12/2017
Ant.Polar.:	Vertical		
Description:	Antenna Model : EDA-1713-25GC1-A14		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5144.000	56.90	8.97	65.87	74.00	-8.13	peak
2	5144.000	41.14	8.97	50.11	54.00	-3.89	AVG
3	5150.000	54.06	8.97	63.03	74.00	-10.97	peak
4	5150.000	43.58	8.97	52.55	54.00	-1.45	AVG

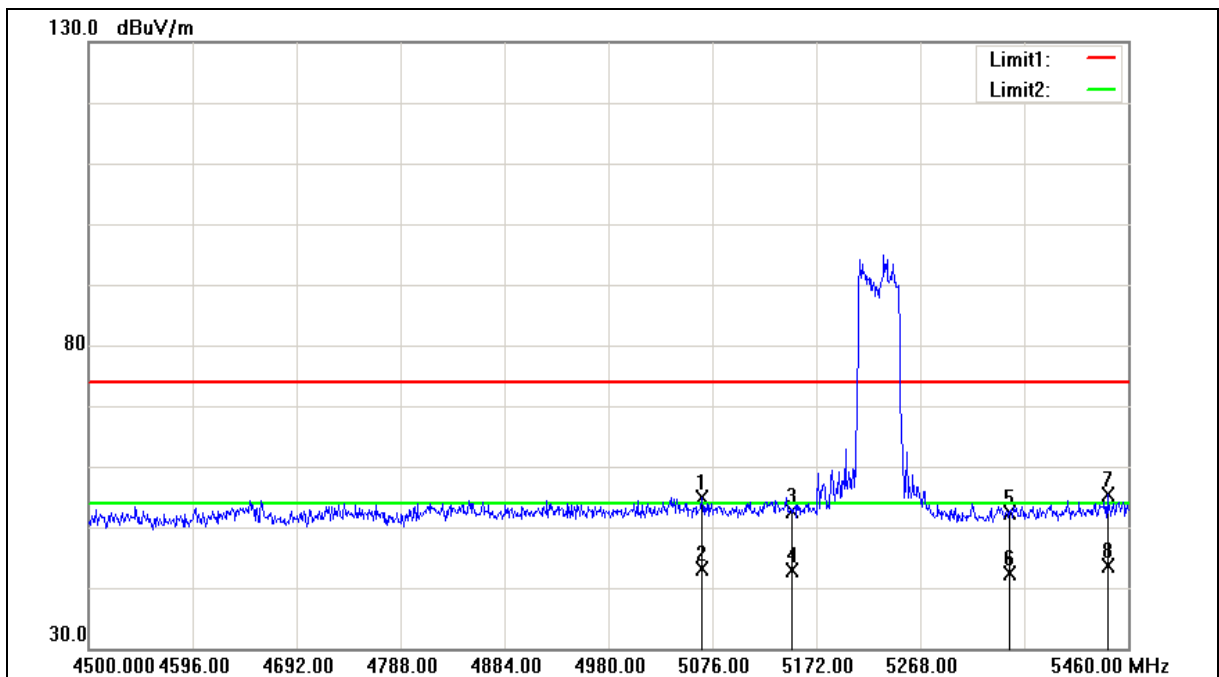
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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:	DC 5V
Frequency:	5230MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/12/2017
Ant.Polar.:	Horizontal		
Description:	Antenna Model : EDA-1713-25GC1-A14		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	DC 5V
Frequency:	5230MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/12/2017
Ant.Polar.:	Horizontal		
Description:	Antenna Model : EDA-1713-25GC1-A14		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5066.400	46.01	8.91	54.92	74.00	-19.08	peak
2	5066.400	34.18	8.91	43.09	54.00	-10.91	AVG
3	5150.000	43.64	8.97	52.61	74.00	-21.39	peak
4	5150.000	33.83	8.97	42.80	54.00	-11.20	AVG
5	5350.000	43.19	9.08	52.27	74.00	-21.73	peak
6	5350.000	33.31	9.08	42.39	54.00	-11.61	AVG
7	5440.800	46.19	9.15	55.34	74.00	-18.66	peak
8	5440.800	34.51	9.15	43.66	54.00	-10.34	AVG

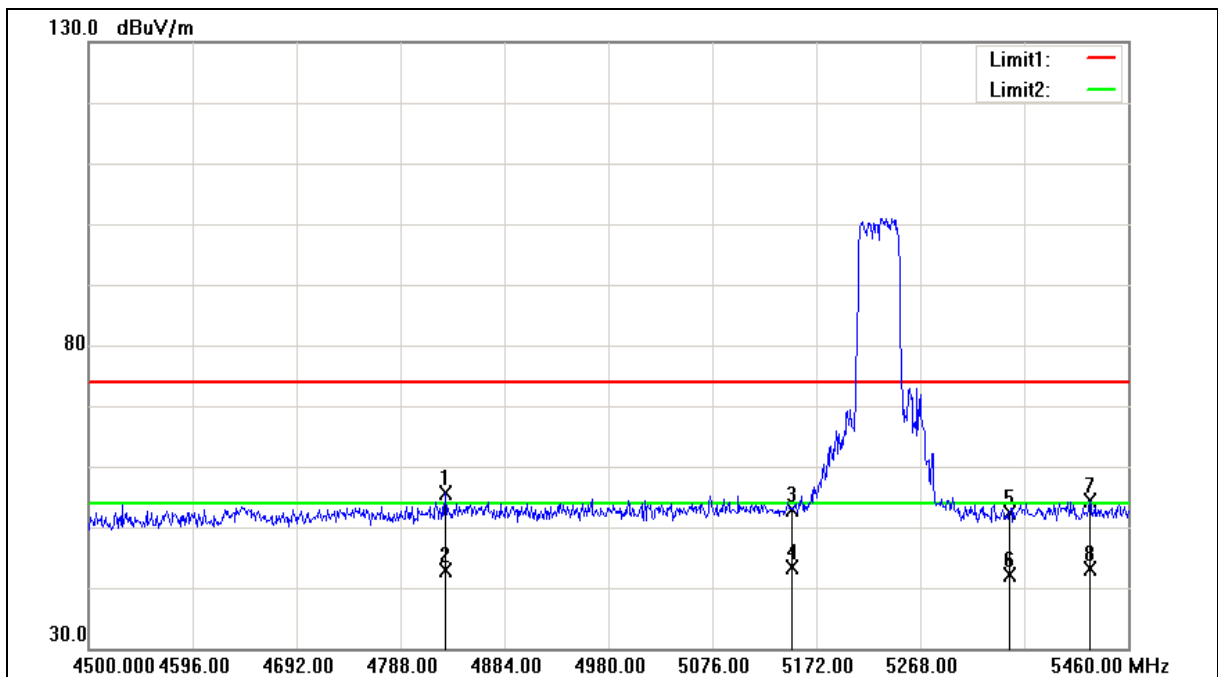
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	DC 5V
Frequency:	5230MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/12/2017
Ant.Polar.:	Vertical		
Description:	Antenna Model : EDA-1713-25GC1-A14		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	DC 5V
Frequency:	5230MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/12/2017
Ant.Polar.:	Vertical		
Description:	Antenna Model : EDA-1713-25GC1-A14		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4829.280	47.56	8.18	55.74	74.00	-18.26	peak
2	4829.280	34.73	8.18	42.91	54.00	-11.09	AVG
3	5150.000	43.80	8.97	52.77	74.00	-21.23	peak
4	5150.000	34.33	8.97	43.30	54.00	-10.70	AVG
5	5350.000	43.34	9.08	52.42	74.00	-21.58	peak
6	5350.000	33.16	9.08	42.24	54.00	-11.76	AVG
7	5424.480	45.16	9.14	54.30	74.00	-19.70	peak
8	5424.480	33.88	9.14	43.02	54.00	-10.98	AVG

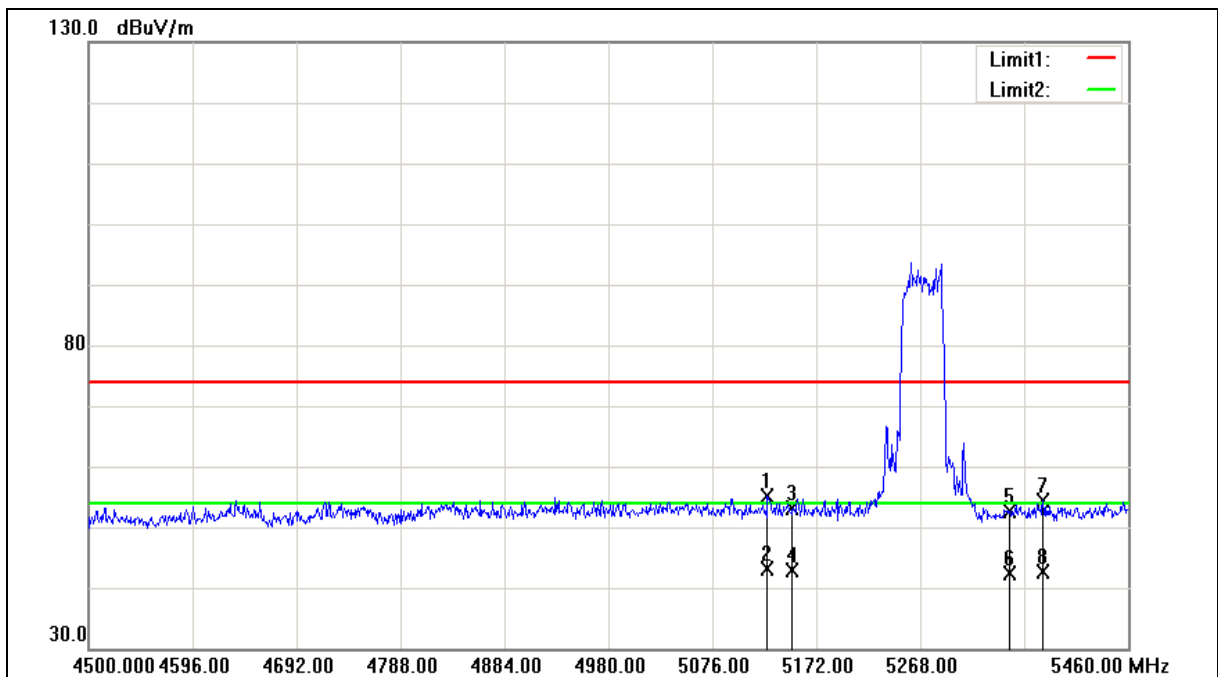
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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:	DC 5V
Frequency:	5270MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/12/2017
Ant.Polar.:	Horizontal		
Description:	Antenna Model : EDA-1713-25GC1-A14		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	DC 5V
Frequency:	5270MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/12/2017
Ant.Polar.:	Horizontal		
Description:	Antenna Model : EDA-1713-25GC1-A14		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5126.880	46.13	8.95	55.08	74.00	-18.92	peak
2	5126.880	34.26	8.95	43.21	54.00	-10.79	AVG
3	5150.000	44.08	8.97	53.05	74.00	-20.95	peak
4	5150.000	33.80	8.97	42.77	54.00	-11.23	AVG
5	5350.000	43.44	9.08	52.52	74.00	-21.48	peak
6	5350.000	33.40	9.08	42.48	54.00	-11.52	AVG
7	5381.280	45.27	9.11	54.38	74.00	-19.62	peak
8	5381.280	33.40	9.11	42.51	54.00	-11.49	AVG

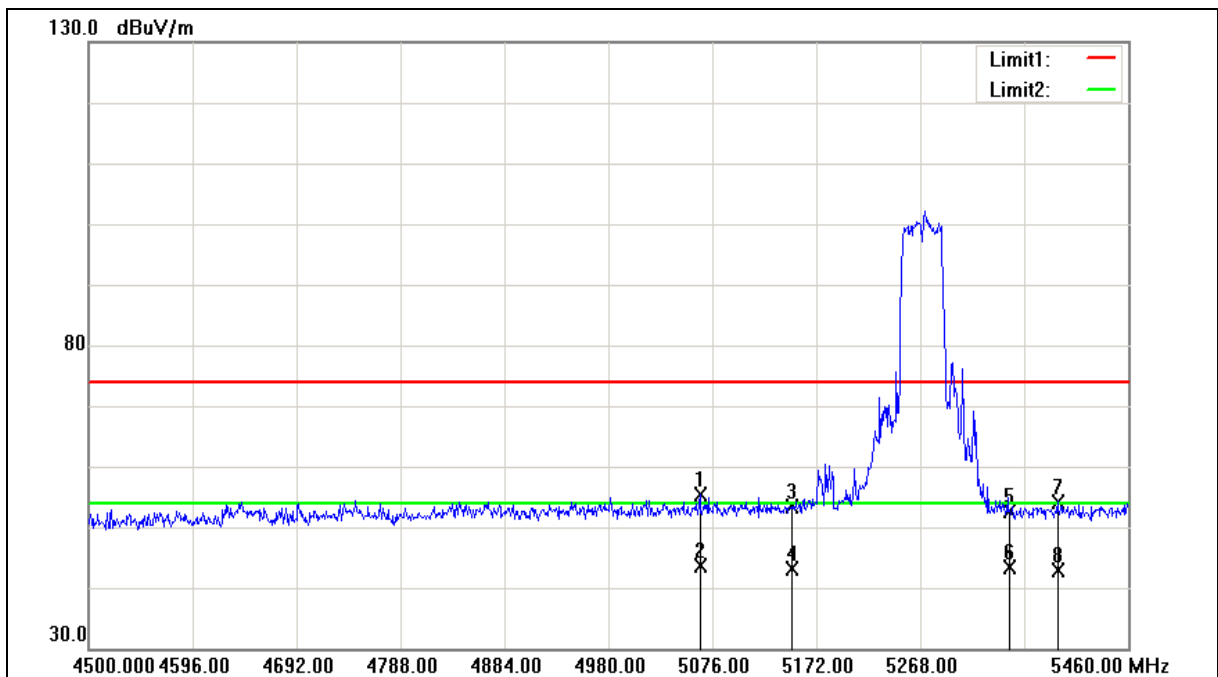
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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:	DC 5V
Frequency:	5270MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/12/2017
Ant.Polar.:	Vertical		
Description:	Antenna Model : EDA-1713-25GC1-A14		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	DC 5V
Frequency:	5270MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/12/2017
Ant.Polar.:	Vertical		
Description:	Antenna Model : EDA-1713-25GC1-A14		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5064.480	46.36	8.91	55.27	74.00	-18.73	peak
2	5064.480	34.72	8.91	43.63	54.00	-10.37	AVG
3	5150.000	44.52	8.97	53.49	74.00	-20.51	peak
4	5150.000	34.10	8.97	43.07	54.00	-10.93	AVG
5	5350.000	43.67	9.08	52.75	74.00	-21.25	peak
6	5350.000	34.36	9.08	43.44	54.00	-10.56	AVG
7	5394.720	45.13	9.12	54.25	74.00	-19.75	peak
8	5394.720	33.85	9.12	42.97	54.00	-11.03	AVG

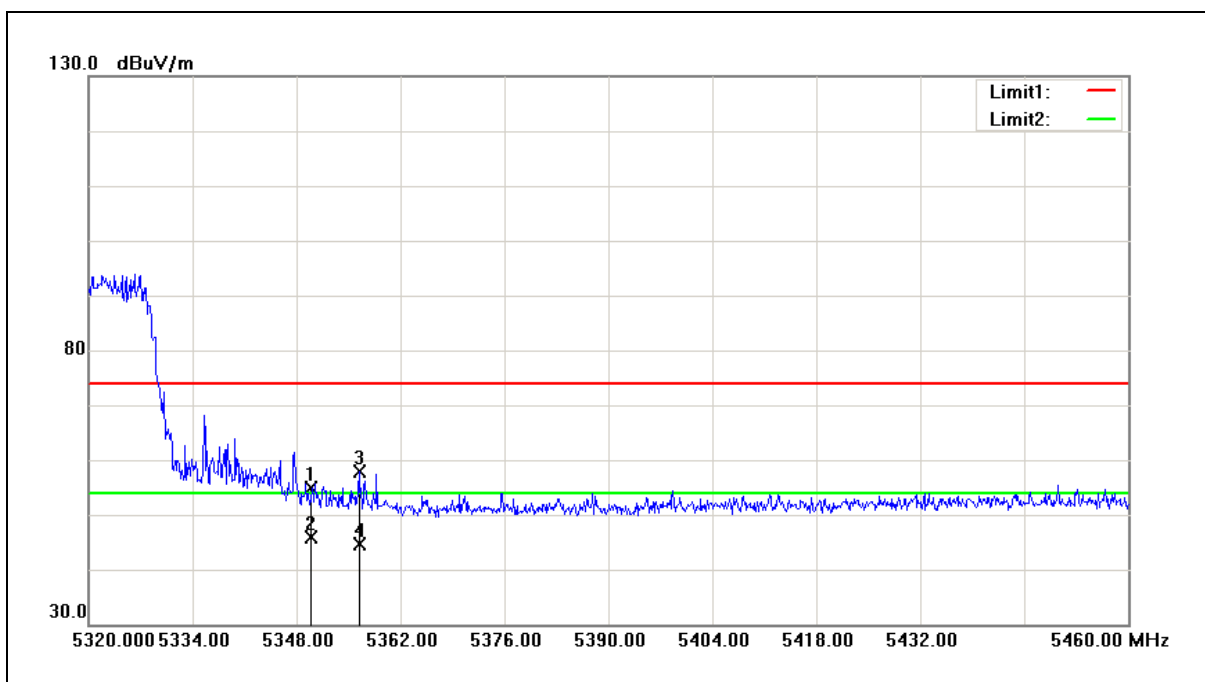
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	DC 5V
Frequency:	5310MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/12/2017
Ant.Polar.:	Horizontal		
Description:	Antenna Model : EDA-1713-25GC1-A14		



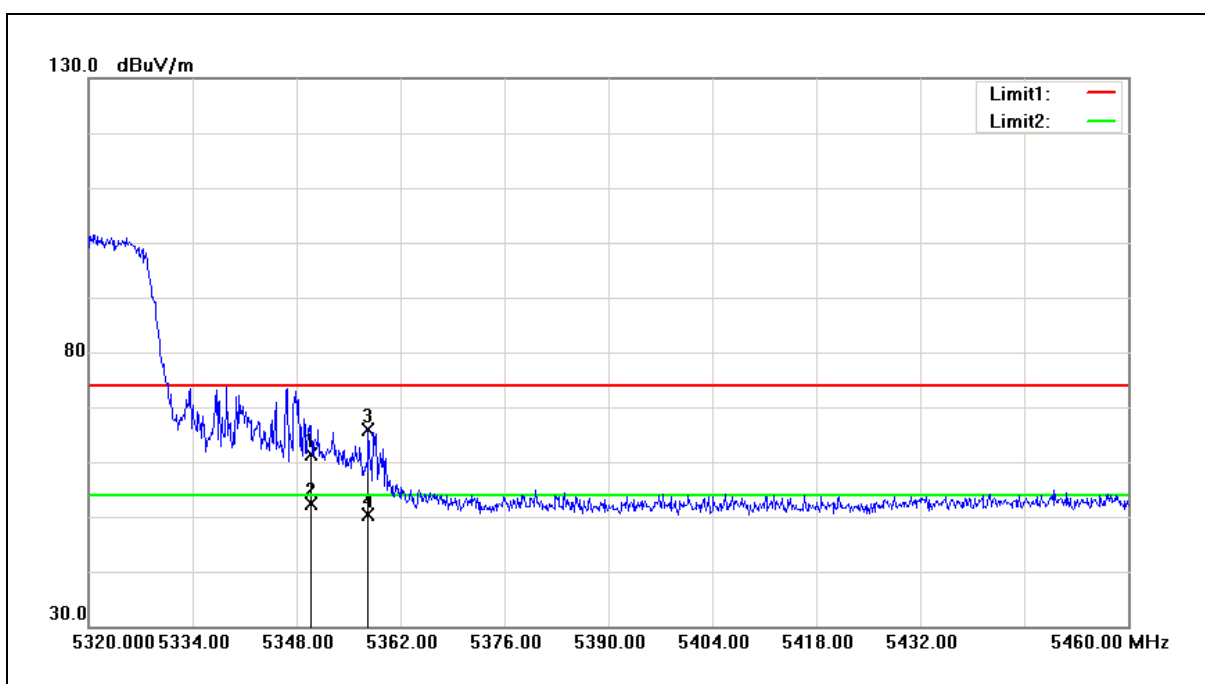
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	45.80	9.08	54.88	74.00	-19.12	peak
2	5350.000	36.91	9.08	45.99	54.00	-8.01	AVG
3	5356.400	48.81	9.08	57.89	74.00	-16.11	peak
4	5356.400	35.53	9.08	44.61	54.00	-9.39	AVG

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:	DC 5V
Frequency:	5310MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/12/2017
Ant.Polar.:	Vertical		
Description:	Antenna Model : EDA-1713-25GC1-A14		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	52.22	9.08	61.30	74.00	-12.70	peak
2	5350.000	43.32	9.08	52.40	54.00	-1.60	AVG
3	5357.660	56.83	9.08	65.91	74.00	-8.09	peak
4	5357.660	41.31	9.08	50.39	54.00	-3.61	AVG

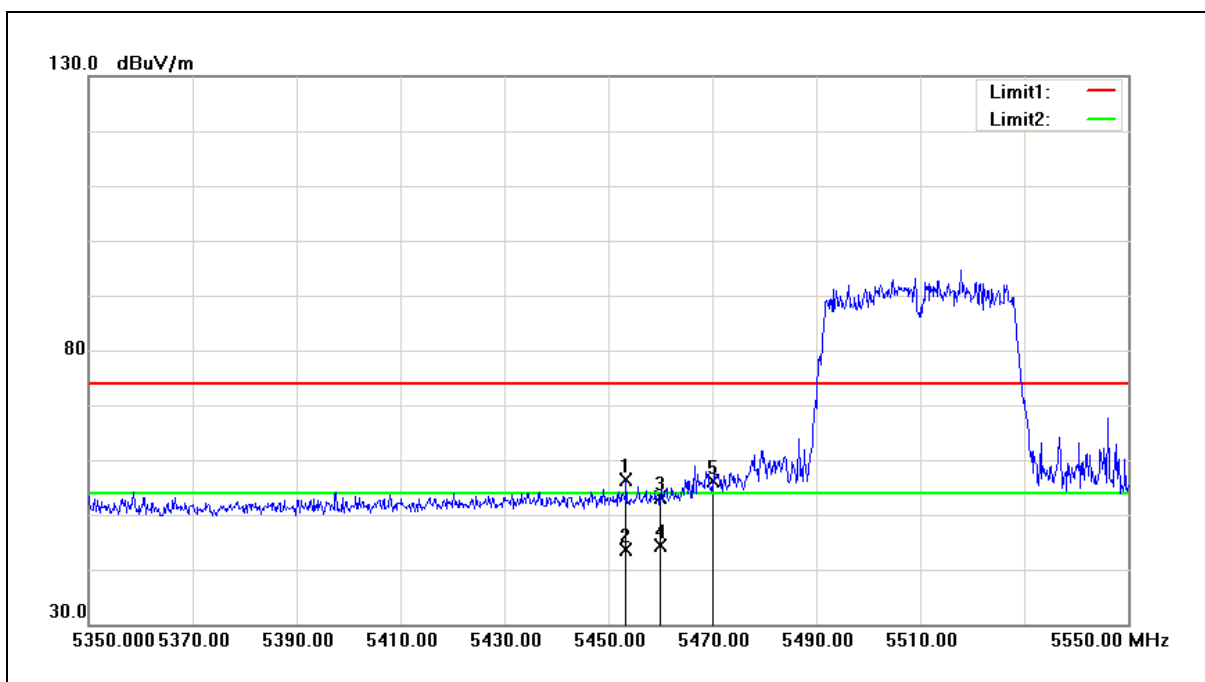
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	DC 5V
Frequency:	5510MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/12/2017
Ant.Polar.:	Horizontal		
Description:	Antenna Model : EDA-1713-25GC1-A14		



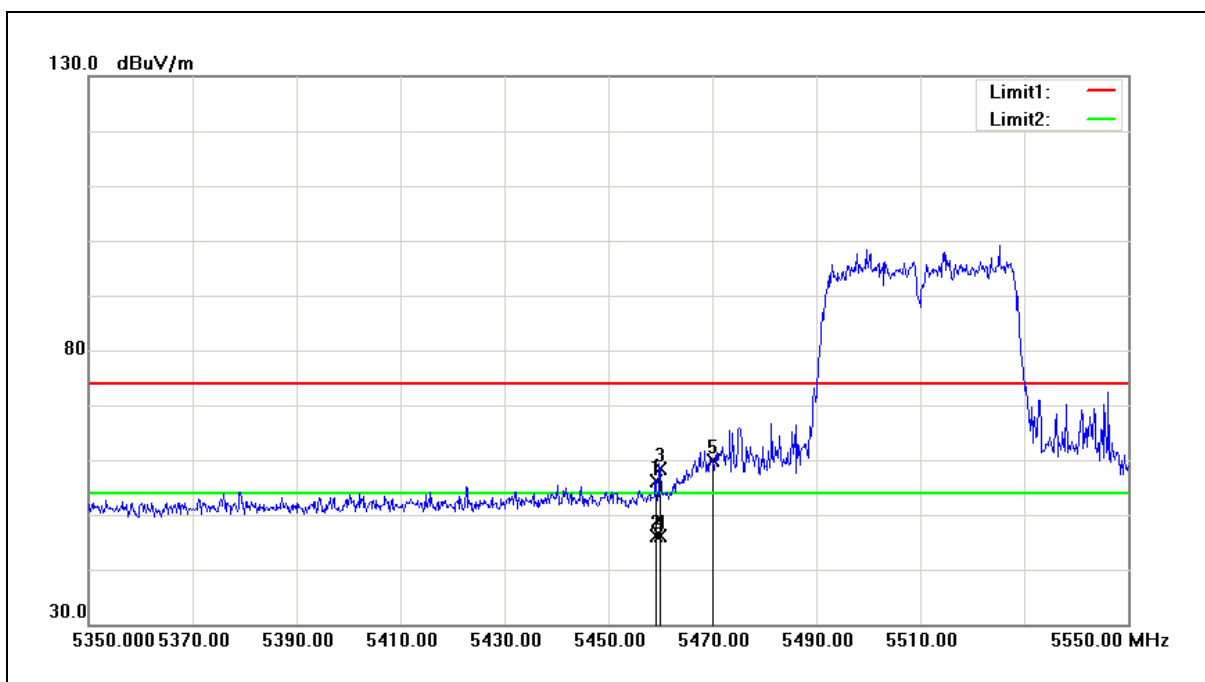
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5453.400	47.32	9.15	56.47	74.00	-17.53	peak
2	5453.400	34.46	9.15	43.61	54.00	-10.39	AVG
3	5460.000	43.95	9.15	53.10	74.00	-20.90	peak
4	5460.000	35.20	9.15	44.35	54.00	-9.65	AVG
5	5470.000	46.86	9.16	56.02	68.20	-12.18	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:	DC 5V
Frequency:	5510MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/12/2017
Ant.Polar.:	Vertical		
Description:	Antenna Model : EDA-1713-25GC1-A14		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5459.200	47.09	9.15	56.24	74.00	-17.76	peak
2	5459.200	37.07	9.15	46.22	54.00	-7.78	AVG
3	5460.000	49.34	9.15	58.49	74.00	-15.51	peak
4	5460.000	37.01	9.15	46.16	54.00	-7.84	AVG
5	5470.000	50.69	9.16	59.85	68.20	-8.35	peak

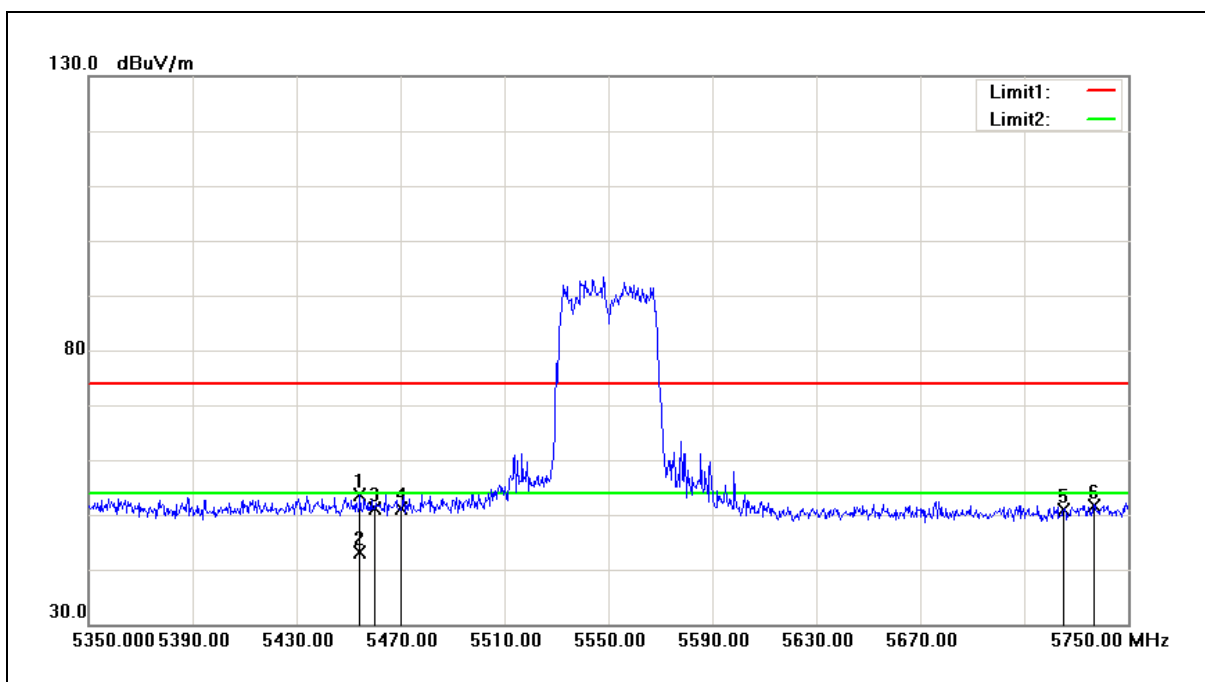
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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:	DC 5V
Frequency:	5550MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/12/2017
Ant.Polar.:	Horizontal		
Description:	Antenna Model : EDA-1713-25GC1-A14		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5454.400	44.41	9.15	53.56	74.00	-20.44	peak
2	5454.400	33.98	9.15	43.13	54.00	-10.87	AVG
3	5460.000	41.86	9.15	51.01	74.00	-22.99	peak
4	5470.000	42.01	9.16	51.17	68.20	-17.03	peak
5	5725.000	41.16	9.70	50.86	68.20	-17.34	peak
6	5736.800	42.02	9.73	51.75	74.00	-22.25	peak

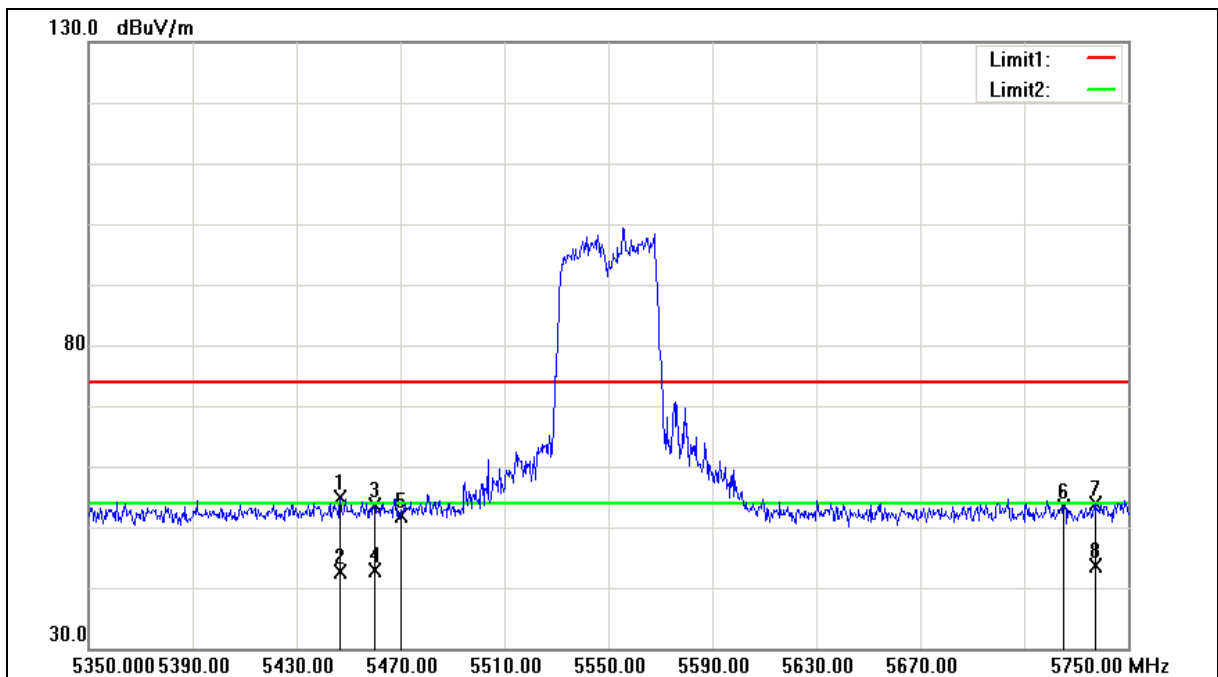
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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:	DC 5V
Frequency:	5550MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/12/2017
Ant.Polar.:	Vertical		
Description:	Antenna Model : EDA-1713-25GC1-A14		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	DC 5V
Frequency:	5550MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/12/2017
Ant.Polar.:	Vertical		
Description:	Antenna Model : EDA-1713-25GC1-A14		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5446.800	45.70	9.15	54.85	74.00	-19.15	peak
2	5446.800	33.52	9.15	42.67	54.00	-11.33	AVG
3	5460.000	44.54	9.15	53.69	74.00	-20.31	peak
4	5460.000	33.76	9.15	42.91	54.00	-11.09	AVG
5	5470.000	42.61	9.16	51.77	68.20	-16.43	peak
6	5725.000	43.73	9.70	53.43	68.20	-14.77	peak
7	5737.200	44.16	9.73	53.89	74.00	-20.11	peak
8	5737.200	33.91	9.73	43.64	54.00	-10.36	AVG

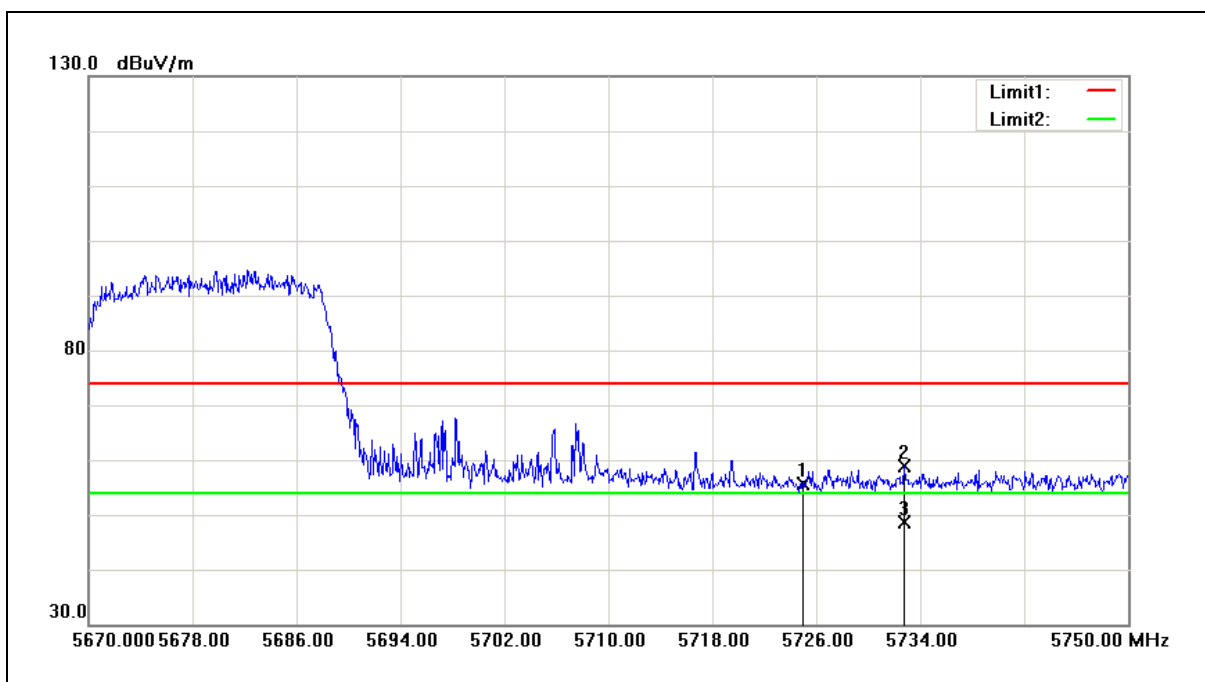
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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:	DC 5V
Frequency:	5670MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/17/2017
Ant.Polar.:	Horizontal		
Description:	Antenna Model : EDA-1713-25GC1-A14		



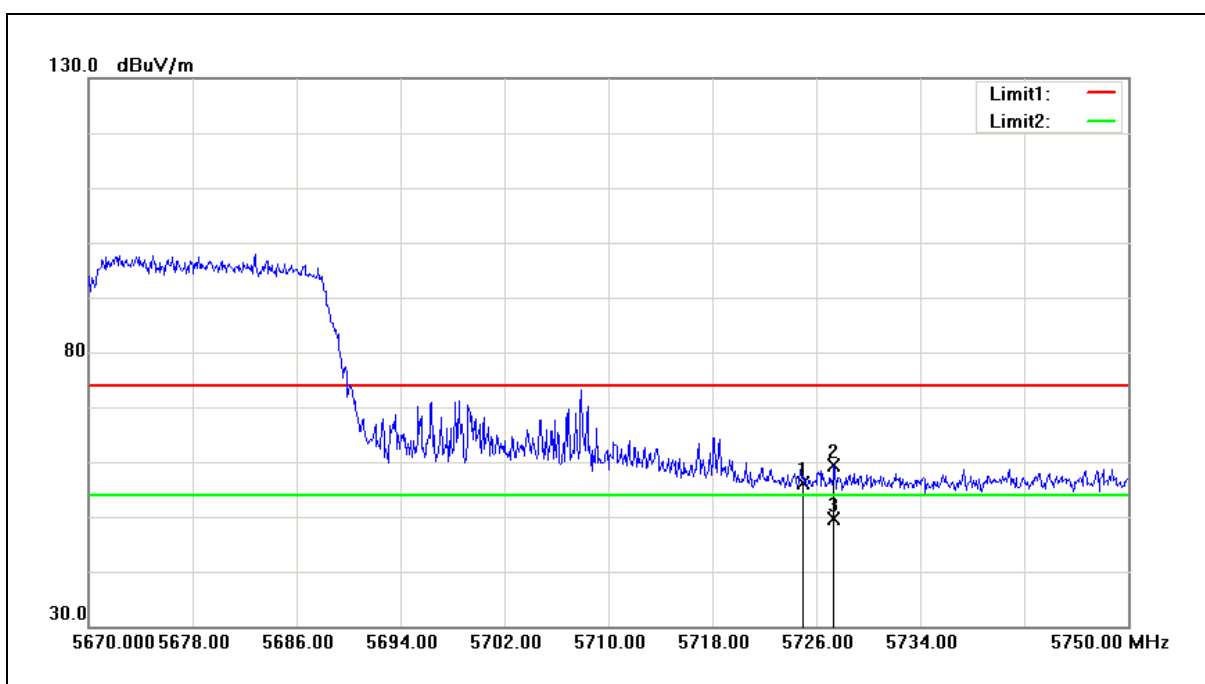
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5725.000	45.91	9.70	55.61	68.20	-12.59	peak
2	5732.800	49.11	9.71	58.82	74.00	-15.18	peak
3	5732.800	38.89	9.71	48.60	54.00	-5.40	AVG

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:	DC 5V
Frequency:	5670MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/17/2017
Ant.Polar.:	Vertical		
Description:	Antenna Model : EDA-1713-25GC1-A14		



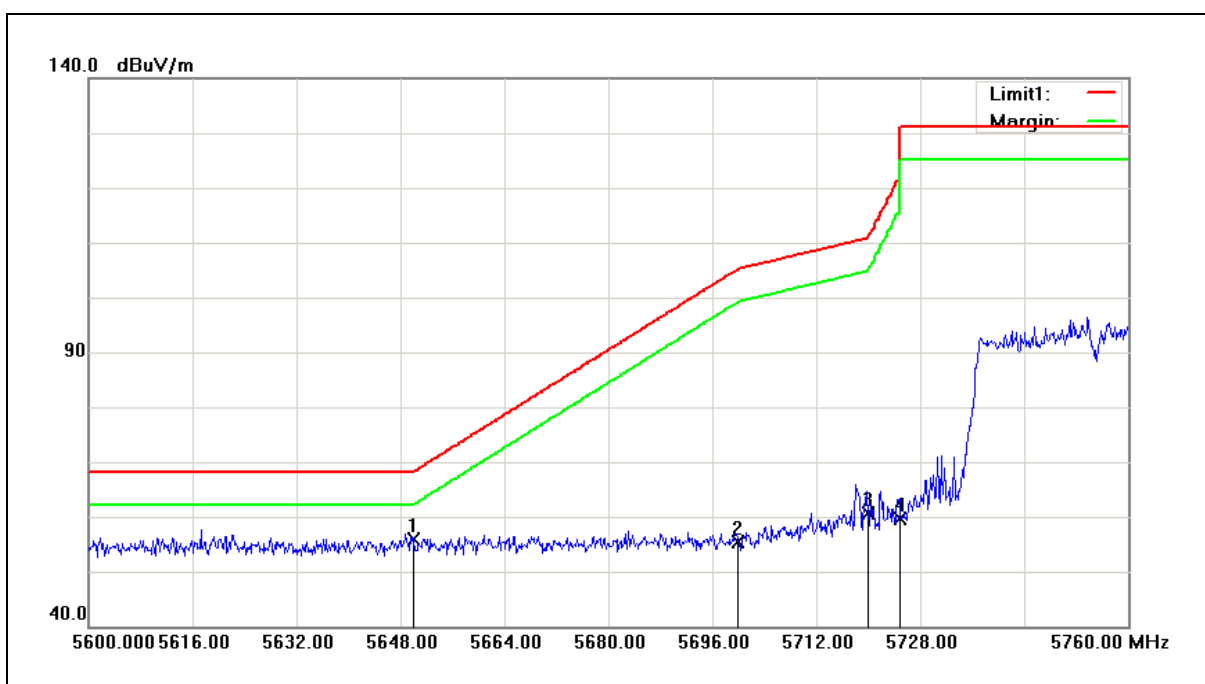
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5725.000	46.45	9.70	56.15	68.20	-12.05	peak
2	5727.360	49.58	9.70	59.28	74.00	-14.72	peak
3	5727.360	39.82	9.70	49.52	54.00	-4.48	AVG

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 15.407	Test Distance:	3m
Test item:	Band edge	Power:	DC 5V
Frequency:	5755MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/17/2017
Ant.Polar.:	Horizontal		
Description:	Antenna Model : EDA-1713-25GC1-A14		



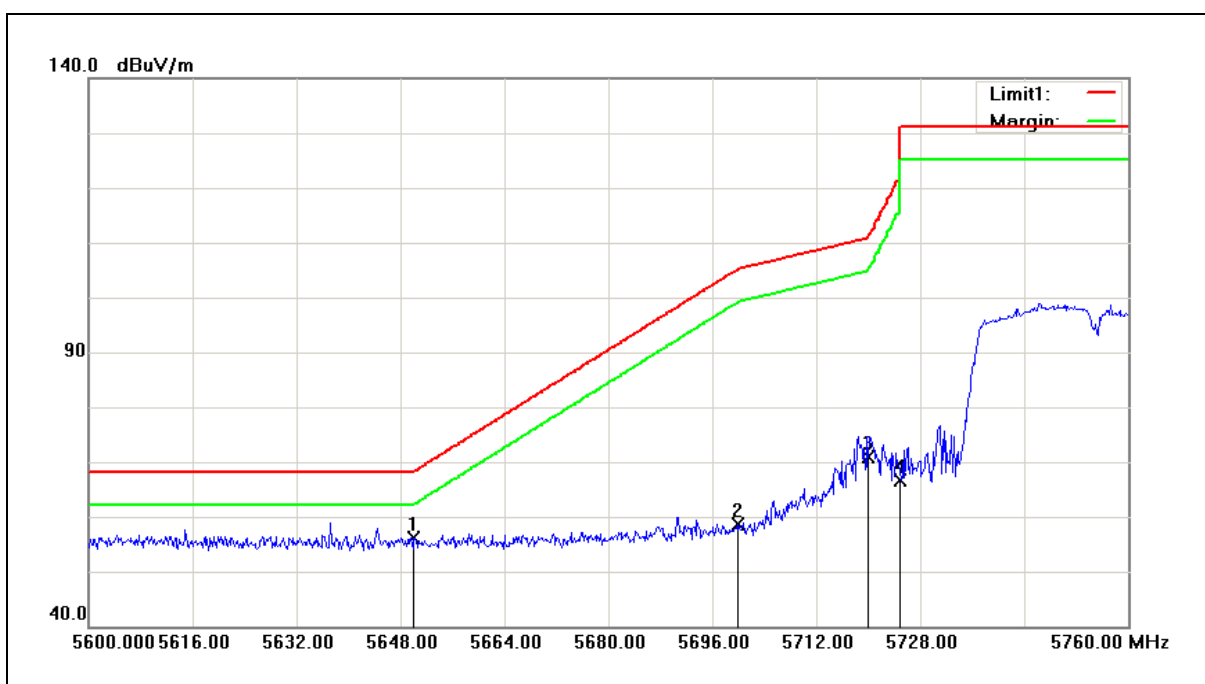
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5650.000	46.26	9.53	55.79	68.20	-12.41	peak
2	5700.000	45.76	9.64	55.40	105.20	-49.80	peak
3	5720.000	50.89	9.69	60.58	110.80	-50.22	peak
4	5725.000	49.92	9.70	59.62	122.20	-62.58	peak

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:	DC 5V
Frequency:	5755MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/17/2017
Ant.Polar.:	Vertical		
Description:	Antenna Model : EDA-1713-25GC1-A14		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5650.000	46.70	9.53	56.23	68.20	-11.97	peak
2	5700.000	48.98	9.64	58.62	105.20	-46.58	peak
3	5720.000	61.31	9.69	71.00	110.80	-39.80	peak
4	5725.000	56.97	9.70	66.67	122.20	-55.53	peak

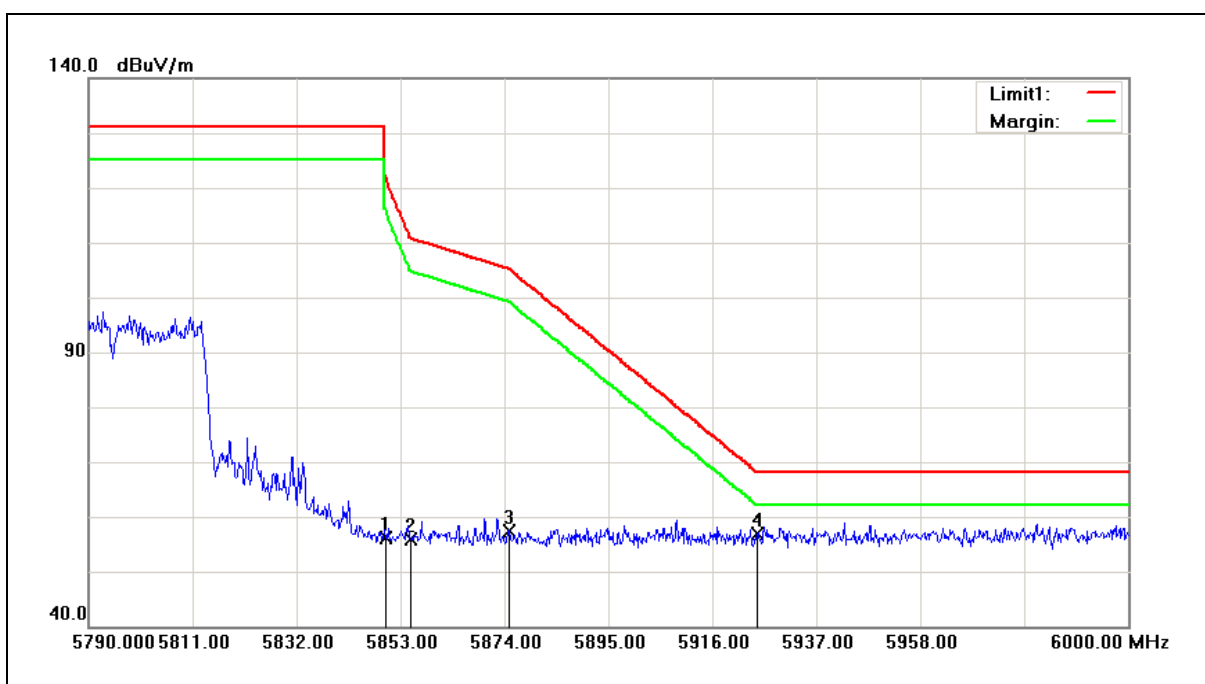
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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:	DC 5V
Frequency:	5795MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/17/2017
Ant.Polar.:	Horizontal		
Description:	Antenna Model : EDA-1713-25GC1-A14		



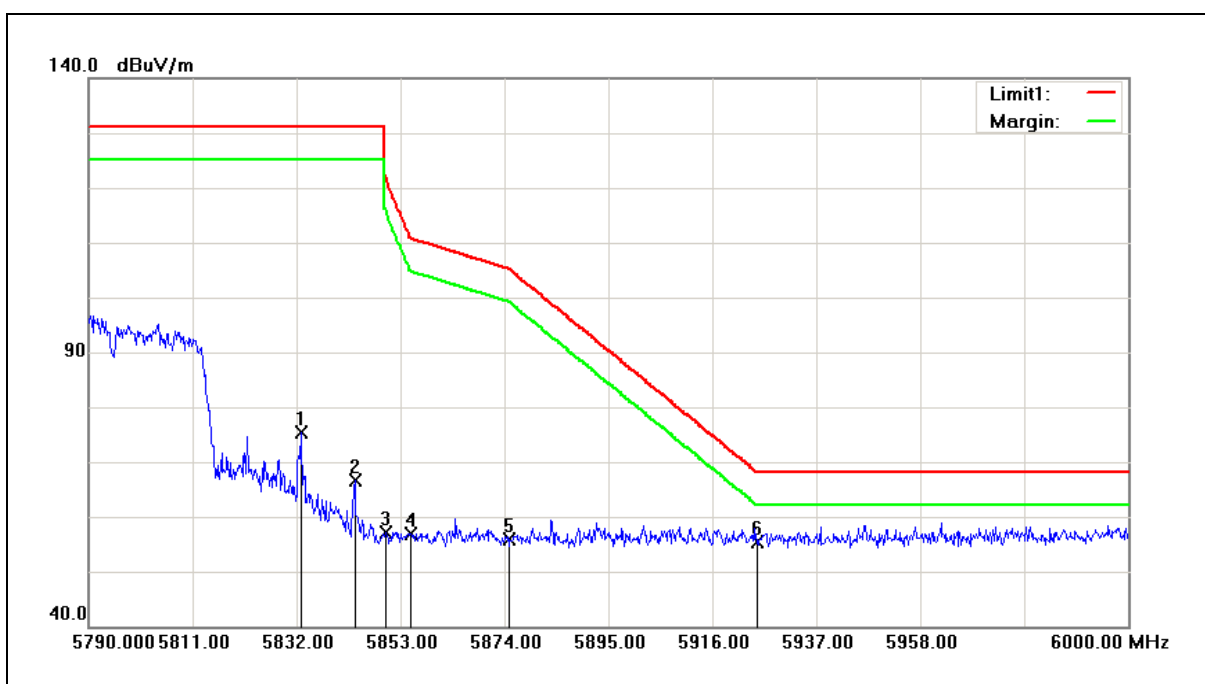
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	46.09	9.98	56.07	122.20	-66.13	peak
2	5855.000	45.88	9.99	55.87	110.80	-54.93	peak
3	5875.000	47.46	10.04	57.50	105.20	-47.70	peak
4	5925.000	46.71	10.16	56.87	68.20	-11.33	peak

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:	DC 5V
Frequency:	5795MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	07/17/2017
Ant.Polar.:	Vertical		
Description:	Antenna Model : EDA-1713-25GC1-A14		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5832.840	65.37	9.94	75.31	131.20	-55.89	peak
2	5843.760	56.61	9.97	66.58	131.20	-64.62	peak
3	5850.000	47.07	9.98	57.05	122.20	-65.15	peak
4	5855.000	46.93	9.99	56.92	110.80	-53.88	peak
5	5875.000	45.81	10.04	55.85	105.20	-49.35	peak
6	5925.000	45.21	10.16	55.37	68.20	-12.83	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.

4.2. Maximum Conducted Output Power Measurement

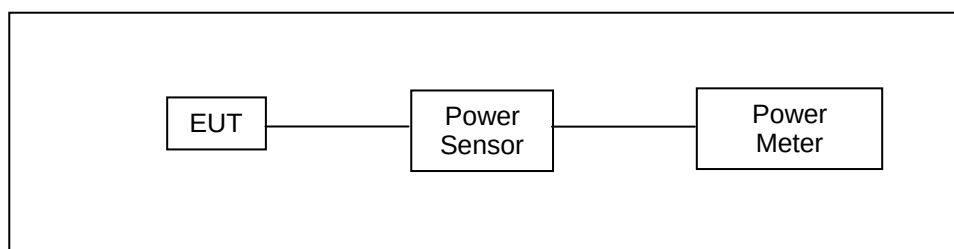
■ Limit

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,

* Diversity mode : Max. Gain = 6.06 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-1500	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		ANT-1		FCC Limit (dBm)
		Max. Output Power				
		(dBm)	(W)	(dBm)	(W)	
5180.0	6M	13.50	0.022	13.42	0.022	≤ 23.94
5200.0		13.34	0.022	13.28	0.021	
5220.0		13.38	0.022	13.30	0.021	
5240.0		13.87	0.024	13.81	0.024	
5260.0		13.25	0.021	13.18	0.021	
5280.0		13.28	0.021	13.22	0.021	
5300.0		13.46	0.022	13.44	0.022	
5320.0		13.78	0.024	13.75	0.024	
5500.0		13.12	0.021	13.07	0.020	
5520.0		13.17	0.021	13.15	0.021	
5540.0		13.65	0.023	13.63	0.023	
5560.0		13.09	0.020	13.03	0.020	
5580.0		13.14	0.021	13.10	0.020	
5660.0		13.06	0.020	13.02	0.020	
5680.0		13.17	0.021	13.08	0.020	
5700.0		13.07	0.020	12.97	0.020	
5745.0		13.53	0.023	13.50	0.022	≤ 29.94
5765.0		13.57	0.023	13.52	0.022	
5785.0		13.70	0.023	13.63	0.023	
5805.0		13.78	0.024	13.72	0.024	
5825.0		13.82	0.024	13.77	0.024	

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		ANT-1		FCC Limit (dBm)
		Max. Output Power				
		(dBm)	(W)	(dBm)	(W)	
5180.0	54M	13.44	0.022	13.38	0.022	≤ 23.94
5200.0		13.30	0.021	13.28	0.021	
5220.0		13.36	0.022	13.30	0.021	
5240.0		13.82	0.024	13.72	0.024	
5260.0		13.21	0.021	13.13	0.021	
5280.0		13.24	0.021	13.17	0.021	
5300.0		13.44	0.022	13.42	0.022	
5320.0		13.73	0.024	13.69	0.023	
5500.0		13.10	0.020	13.04	0.020	
5520.0		13.14	0.021	13.08	0.020	
5540.0		13.63	0.023	13.59	0.023	
5560.0		13.06	0.020	13.00	0.020	
5580.0		13.11	0.020	13.08	0.020	
5660.0		13.02	0.020	12.99	0.020	
5680.0		13.13	0.021	13.07	0.020	
5700.0		13.05	0.020	12.94	0.020	
5745.0		13.47	0.022	13.38	0.022	≤ 29.94
5765.0		13.56	0.023	13.48	0.022	
5785.0		13.64	0.023	13.60	0.023	
5805.0		13.75	0.024	13.68	0.023	
5825.0		13.79	0.024	13.69	0.023	

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		ANT-1		FCC Limit (dBm)
		Max. Output Power				
		(dBm)	(W)	(dBm)	(W)	
5180.0	6.5M	11.58	0.014	11.52	0.014	≤ 23.94
5200.0		11.35	0.014	11.30	0.013	
5220.0		11.51	0.014	11.47	0.014	
5240.0		11.78	0.015	11.68	0.015	
5260.0		11.04	0.013	11.00	0.013	
5280.0		11.15	0.013	11.11	0.013	
5300.0		11.65	0.015	11.59	0.014	
5320.0		11.71	0.015	11.63	0.015	
5500.0		11.10	0.013	11.01	0.013	
5520.0		11.30	0.013	11.22	0.013	
5540.0		11.03	0.013	10.98	0.013	
5560.0		11.55	0.014	11.52	0.014	
5580.0		11.62	0.015	11.58	0.014	
5660.0		11.79	0.015	11.72	0.015	
5680.0		11.44	0.014	11.37	0.014	
5700.0		11.23	0.013	11.13	0.013	
5745.0		11.56	0.014	11.52	0.014	≤ 29.94
5765.0		11.86	0.015	11.78	0.015	
5785.0		11.82	0.015	11.75	0.015	
5805.0		11.80	0.015	11.76	0.015	
5825.0		11.94	0.016	11.85	0.015	

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		ANT-1		FCC Limit (dBm)
		Max. Output Power				
		(dBm)	(W)	(dBm)	(W)	
5180.0	72.2M	11.53	0.014	11.47	0.014	≤ 23.94
5200.0		11.32	0.014	11.22	0.013	
5220.0		11.46	0.014	11.39	0.014	
5240.0		11.76	0.015	11.63	0.015	
5260.0		11.03	0.013	10.98	0.013	
5280.0		11.11	0.013	11.04	0.013	
5300.0		11.61	0.014	11.55	0.014	
5320.0		11.67	0.015	11.61	0.014	
5500.0		11.09	0.013	10.98	0.013	
5520.0		11.24	0.013	11.15	0.013	
5540.0		10.99	0.013	10.97	0.013	
5560.0		11.53	0.014	11.49	0.014	
5580.0		11.59	0.014	11.52	0.014	
5660.0		11.78	0.015	11.69	0.015	
5680.0		11.41	0.014	11.32	0.014	
5700.0		11.18	0.013	11.12	0.013	
5745.0		11.52	0.014	11.43	0.014	≤ 29.94
5765.0		11.81	0.015	11.75	0.015	
5785.0		11.79	0.015	11.72	0.015	
5805.0		11.77	0.015	11.73	0.015	
5825.0		11.92	0.016	11.80	0.015	

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		ANT-0		FCC Limit (dBm)
		Max. Output Power				
		(dBm)	(W)	(dBm)	(W)	
5190.0	13.5M	9.61	0.009	9.52	0.009	≤ 23.94
5230.0		11.39	0.014	11.33	0.014	
5270.0		11.66	0.015	11.62	0.015	
5310.0		8.24	0.007	8.18	0.007	
5510.0		10.68	0.012	10.60	0.011	
5550.0		11.69	0.015	11.59	0.014	
5590.0		11.41	0.014	11.37	0.014	
56700.		11.68	0.015	11.60	0.014	
5755.0		11.43	0.014	11.35	0.014	
5795.0		11.69	0.015	11.63	0.015	
5190.0	150M	9.52	0.009	9.49	0.009	≤ 23.94
5230.0		11.35	0.014	11.31	0.014	
5270.0		11.64	0.015	11.59	0.014	
5310.0		8.18	0.007	8.12	0.006	
5510.0		10.62	0.012	10.52	0.011	
5550.0		11.68	0.015	11.57	0.014	
5590.0		11.39	0.014	11.32	0.014	
56700.		11.63	0.015	11.56	0.014	
5755.0		11.40	0.014	11.32	0.014	
5795.0		11.66	0.015	11.53	0.014	

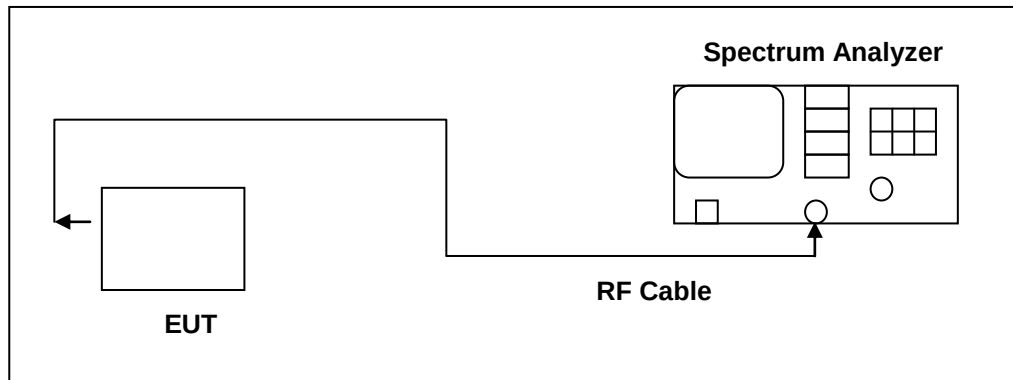
Note: The relevant measured result has the offset with cable loss already.

4.3. 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	23.430
5200	23.470
5240	24.920
5260	24.330
5280	23.070
5320	24.010
5500	20.350
5560	21.200
5700	24.290

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	20.440
5200	21.230
5240	21.150
5260	20.450
5280	20.280
5320	20.380
5500	20.450
5560	20.520
5700	20.680

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



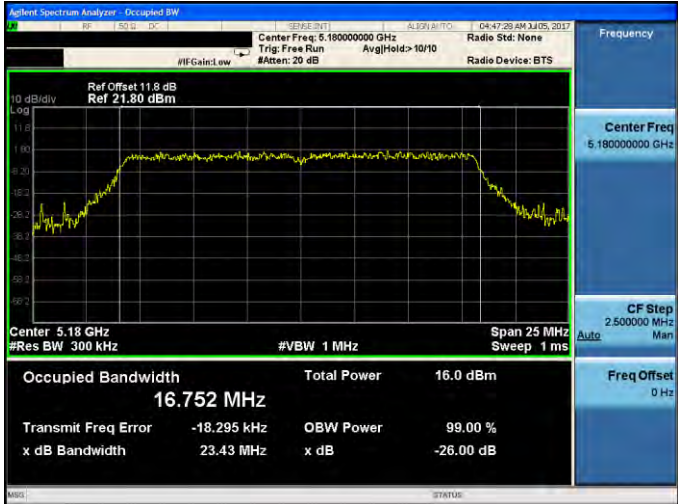
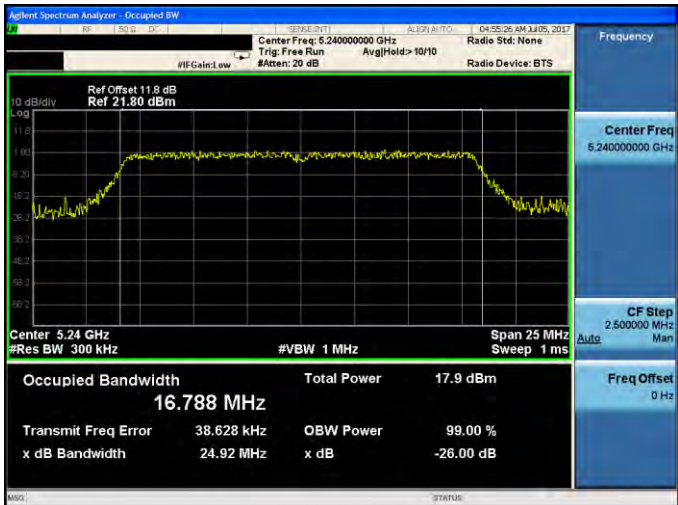
Test Item	26dB RF Bandwidth Measurement
Test Mode	Mode 4: IEEE 802.11n 5GHz 40MHz Continuous TX mode
Frequency (MHz)	ANT-0
	26dB Bandwidth (MHz)
5190	41.670
5230	47.110
5270	49.270
5310	49.220
5510	41.480
5550	41.470
5670	47.820

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



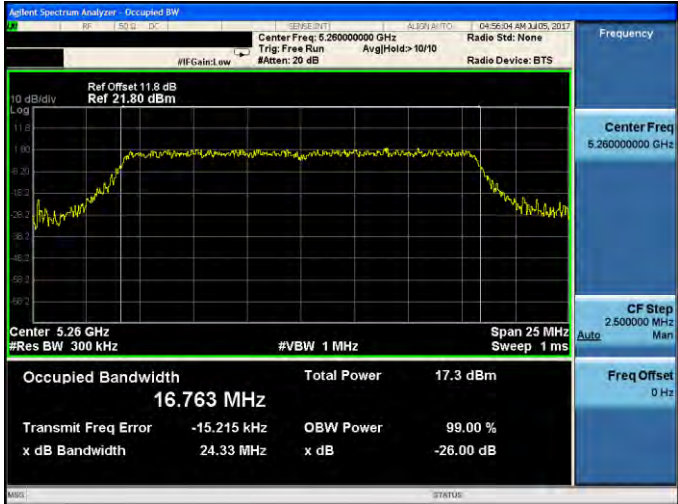
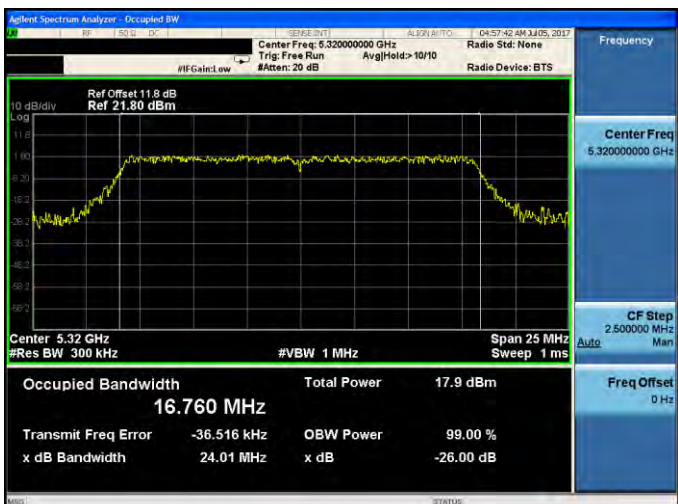
■ Test Graphs

Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0

5180 MHz	
5200 MHz	
5240 MHz	

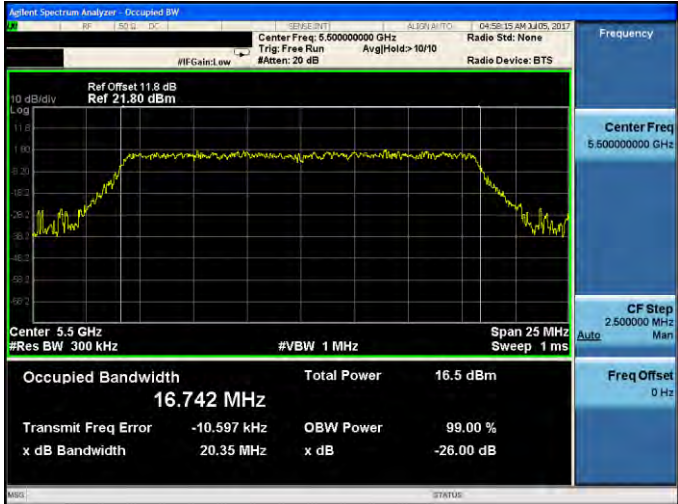
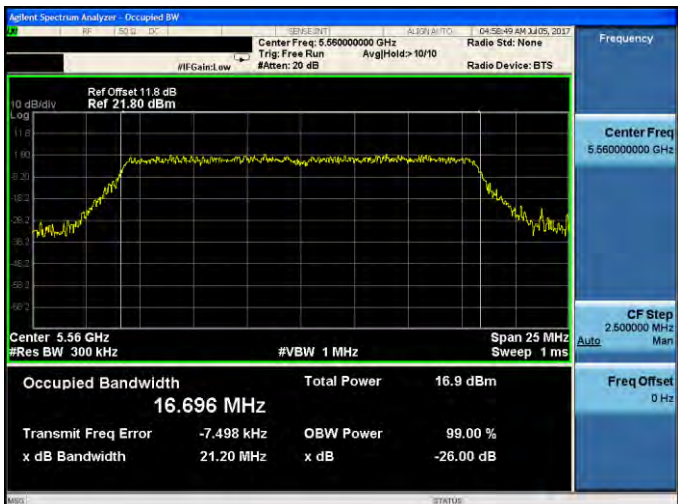
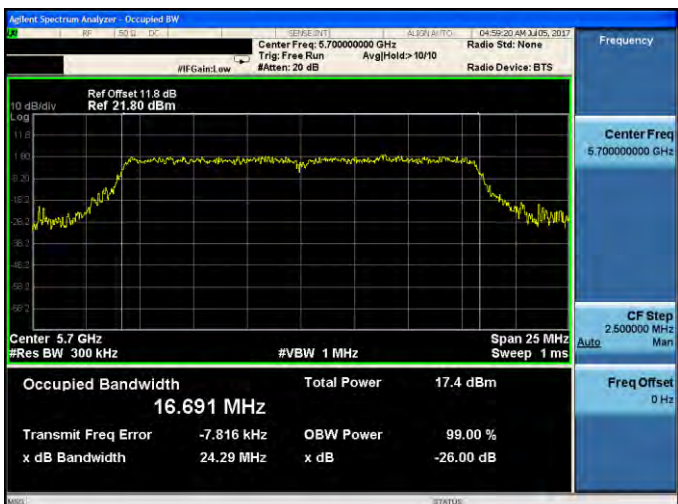


Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0

5260 MHz	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 5.26000000 GHz Trig: Free Run Ave/Hold: >10/10 Radio Std: None Radio Device: BTS Ref Offset 11.8 dB Ref 21.80 dBm Center 5.26 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms Occupied Bandwidth 16.763 MHz Total Power 17.3 dBm Transmit Freq Error -15.215 kHz OBW Power 99.00 % x dB Bandwidth 24.33 MHz x dB -26.00 dB Frequency Center Freq 5.26000000 GHz CF Step 2.500000 MHz Auto Man Freq Offset 0 Hz
5280 MHz	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 5.28000000 GHz Trig: Free Run Ave/Hold: >10/10 Radio Std: None Radio Device: BTS Ref Offset 11.8 dB Ref 21.80 dBm Center 5.28 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms Occupied Bandwidth 16.752 MHz Total Power 17.7 dBm Transmit Freq Error -21.342 kHz OBW Power 99.00 % x dB Bandwidth 23.07 MHz x dB -26.00 dB Frequency Center Freq 5.28000000 GHz CF Step 2.500000 MHz Auto Man Freq Offset 0 Hz
5320 MHz	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 5.32000000 GHz Trig: Free Run Ave/Hold: >10/10 Radio Std: None Radio Device: BTS Ref Offset 11.8 dB Ref 21.80 dBm Center 5.32 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms Occupied Bandwidth 16.760 MHz Total Power 17.9 dBm Transmit Freq Error -36.516 kHz OBW Power 99.00 % x dB Bandwidth 24.01 MHz x dB -26.00 dB Frequency Center Freq 5.32000000 GHz CF Step 2.500000 MHz Auto Man Freq Offset 0 Hz



Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0

5500 MHz	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 5.50000000 GHz Trig: Free Run #Atten: 20 dB Radio Std: None Radio Device: BTS Ref Offset 11.8 dB Ref 21.80 dBm Center 5.5 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms Occupied Bandwidth 16.742 MHz Total Power 16.5 dBm Transmit Freq Error -10.597 kHz OBW Power 99.00 % x dB Bandwidth 20.35 MHz x dB -26.00 dB Frequency Center Freq 5.50000000 GHz CF Step 2.500000 MHz Auto Man Freq Offset 0 Hz
5560 MHz	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 5.56000000 GHz Trig: Free Run #Atten: 20 dB Radio Std: None Radio Device: BTS Ref Offset 11.8 dB Ref 21.80 dBm Center 5.56 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms Occupied Bandwidth 16.696 MHz Total Power 16.9 dBm Transmit Freq Error -7.498 kHz OBW Power 99.00 % x dB Bandwidth 21.20 MHz x dB -26.00 dB Frequency Center Freq 5.56000000 GHz CF Step 2.500000 MHz Auto Man Freq Offset 0 Hz
5700 MHz	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 5.70000000 GHz Trig: Free Run #Atten: 20 dB Radio Std: None Radio Device: BTS Ref Offset 11.8 dB Ref 21.80 dBm Center 5.7 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms Occupied Bandwidth 16.691 MHz Total Power 17.4 dBm Transmit Freq Error -7.816 kHz OBW Power 99.00 % x dB Bandwidth 24.29 MHz x dB -26.00 dB Frequency Center Freq 5.70000000 GHz CF Step 2.500000 MHz Auto Man Freq Offset 0 Hz

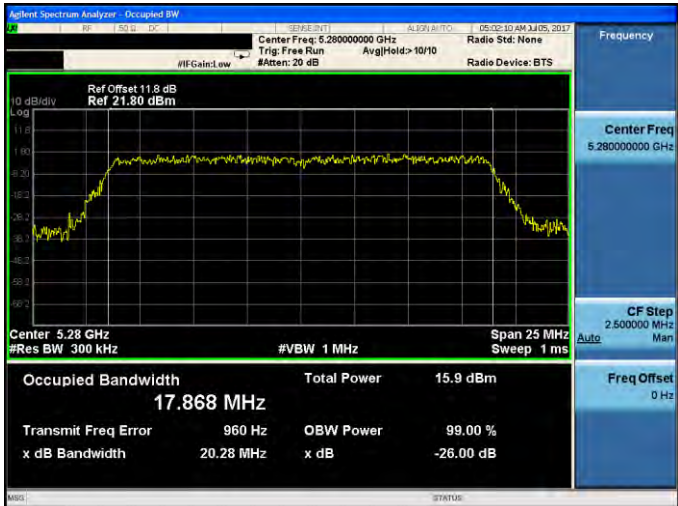
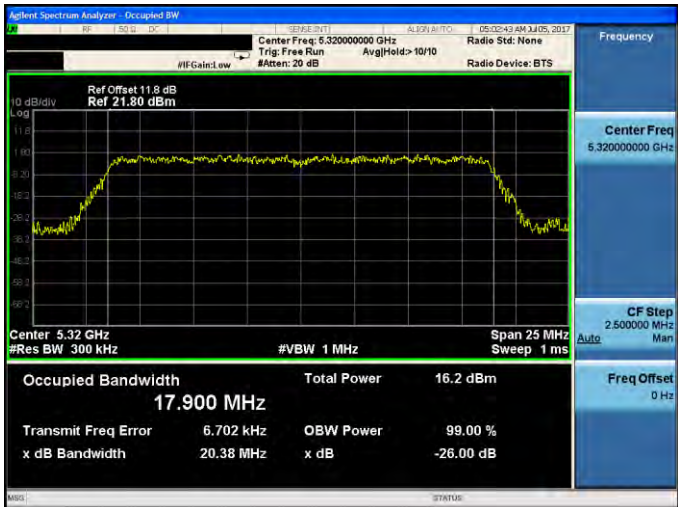


Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode_ ANT-0

5180 MHz	
5200 MHz	
5240 MHz	

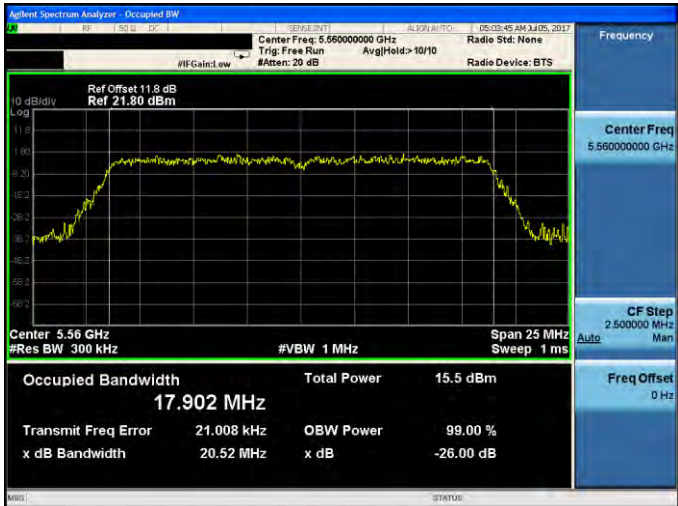
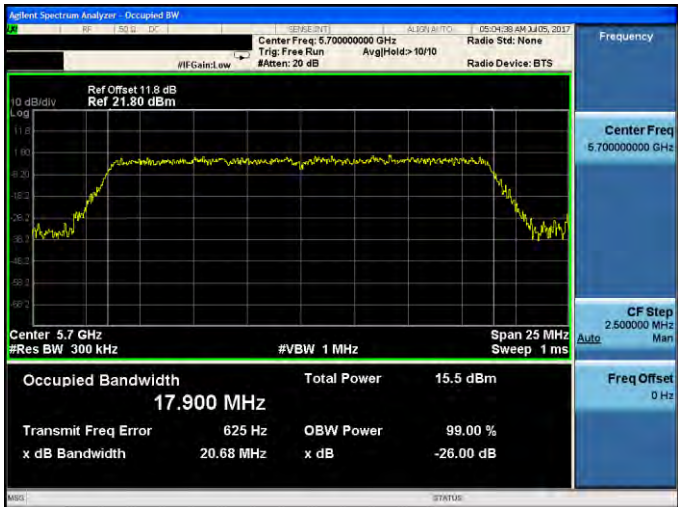


Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode_ ANT-0

5260 MHz	
5280 MHz	
5320 MHz	



Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode_ ANT-0

5500 MHz	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 5.500000000 GHz Trig: Free Run #Atten: 20 dB Radio Std: None Radio Device: BTS Ref Offset 11.8 dB Ref 21.80 dBm Center 5.5 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms Occupied Bandwidth 17.888 MHz Total Power 14.9 dBm Transmit Freq Error 7.514 kHz OBW Power 99.00 % x dB Bandwidth 20.45 MHz x dB -26.00 dB Frequency Center Freq 5.500000000 GHz CF Step 2.500000 MHz Auto Man Freq Offset 0 Hz
5560 MHz	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 5.560000000 GHz Trig: Free Run #Atten: 20 dB Radio Std: None Radio Device: BTS Ref Offset 11.8 dB Ref 21.80 dBm Center 5.56 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms Occupied Bandwidth 17.902 MHz Total Power 15.5 dBm Transmit Freq Error 21.008 kHz OBW Power 99.00 % x dB Bandwidth 20.52 MHz x dB -26.00 dB Frequency Center Freq 5.560000000 GHz CF Step 2.500000 MHz Auto Man Freq Offset 0 Hz
5700 MHz	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 5.700000000 GHz Trig: Free Run #Atten: 20 dB Radio Std: None Radio Device: BTS Ref Offset 11.8 dB Ref 21.80 dBm Center 5.7 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms Occupied Bandwidth 17.900 MHz Total Power 15.5 dBm Transmit Freq Error 625 Hz OBW Power 99.00 % x dB Bandwidth 20.68 MHz x dB -26.00 dB Frequency Center Freq 5.700000000 GHz CF Step 2.500000 MHz Auto Man Freq Offset 0 Hz



Mode 4: IEEE 802.11n 5GHz 40MHz Continuous TX mode_ ANT-0

5190 MHz	
5230 MHz	



Mode 4: IEEE 802.11n 5GHz 40MHz Continuous TX mode_ ANT-0

5270 MHz	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 5.27000000 GHz Trig: Free Run Ave/Hold: >10/10 Radio Std: None Radio Device: BTS Ref Offset 11.8 dB Ref 21.80 dBm Center 5.27 GHz #Res BW 1 MHz #VBW 3 MHz Span 50 MHz Sweep 1 ms Occupied Bandwidth 36.587 MHz Total Power 17.0 dBm Transmit Freq Error 11.639 kHz OBW Power 99.00 % x dB Bandwidth 49.27 MHz x dB -26.00 dB Frequency Center Freq 5.27000000 GHz CF Step 5.000000 MHz Auto Man Freq Offset 0 Hz
5310 MHz	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 5.31000000 GHz Trig: Free Run Ave/Hold: >10/10 Radio Std: None Radio Device: BTS Ref Offset 11.8 dB Ref 21.80 dBm Center 5.31 GHz #Res BW 1 MHz #VBW 3 MHz Span 50 MHz Sweep 1 ms Occupied Bandwidth 36.629 MHz Total Power 16.8 dBm Transmit Freq Error -11.457 kHz OBW Power 99.00 % x dB Bandwidth 49.22 MHz x dB -26.00 dB Frequency Center Freq 5.31000000 GHz CF Step 5.000000 MHz Auto Man Freq Offset 0 Hz



Mode 4: IEEE 802.11n 5GHz 40MHz Continuous TX mode_ ANT-0

5510 MHz	
5550 MHz	
5670 MHz	

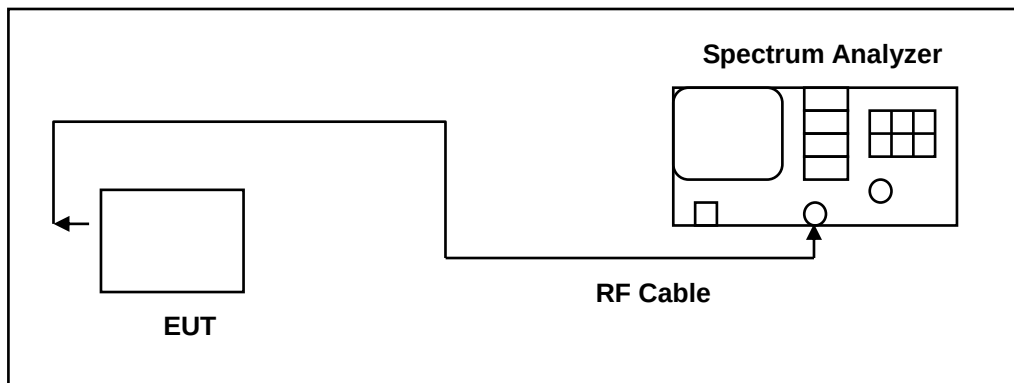
4.4. 6dB RF Bandwidth Measurement

■ 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	16380	> 500
5785	16340	> 500
5825	16430	> 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	17610	> 500
5785	17620	> 500
5825	17610	> 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	36370	> 500
5795	36360	> 500



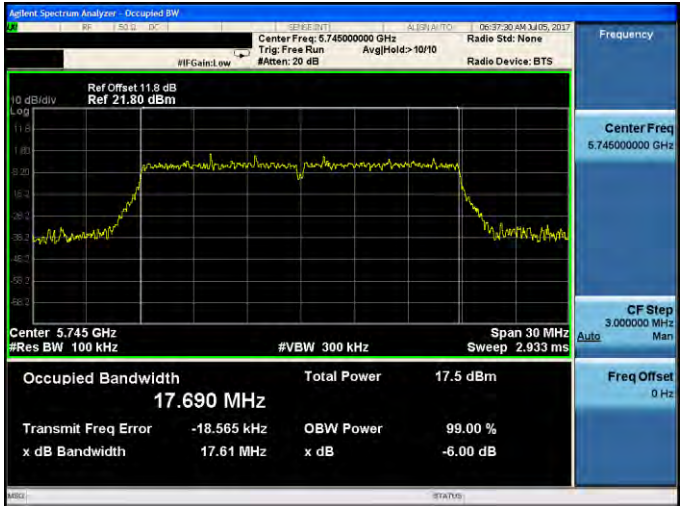
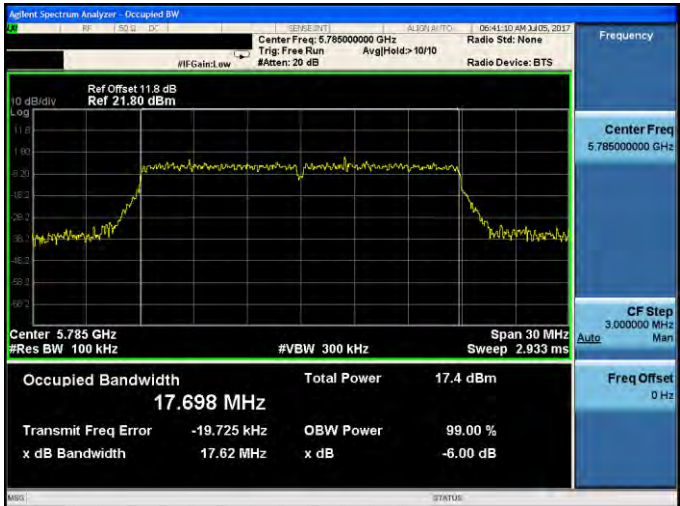
■ Test Graphs

Mode 2: IEEE 802.11a Continuous TX mode_ANT-0

5745 MHz	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 5.74500000 GHz Trig: Free Run Ave/Hold: 10/10 Radio Std: None Radio Device: BTS Ref Offset 11.8 dB Ref 21.80 dBm Center 5.745 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 16.490 MHz Total Power 19.3 dBm Transmit Freq Error -21.198 kHz OBW Power 99.00 % x dB Bandwidth 16.38 MHz x dB -6.00 dB Frequency Center Freq 5.74500000 GHz CF Step 3.000000 MHz Auto Man Freq Offset 0 Hz
5785 MHz	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 5.78500000 GHz Trig: Free Run Ave/Hold: 10/10 Radio Std: None Radio Device: BTS Ref Offset 11.8 dB Ref 21.80 dBm Center 5.785 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 16.964 MHz Total Power 21.5 dBm Transmit Freq Error -20.689 kHz OBW Power 99.00 % x dB Bandwidth 16.34 MHz x dB -6.00 dB Frequency Center Freq 5.78500000 GHz CF Step 3.000000 MHz Auto Man Freq Offset 0 Hz
5825 MHz	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 5.82500000 GHz Trig: Free Run Ave/Hold: 10/10 Radio Std: None Radio Device: BTS Ref Offset 11.8 dB Ref 21.80 dBm Center 5.825 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 16.535 MHz Total Power 18.7 dBm Transmit Freq Error -36.367 kHz OBW Power 99.00 % x dB Bandwidth 16.43 MHz x dB -6.00 dB Frequency Center Freq 5.82500000 GHz CF Step 3.000000 MHz Auto Man Freq Offset 0 Hz



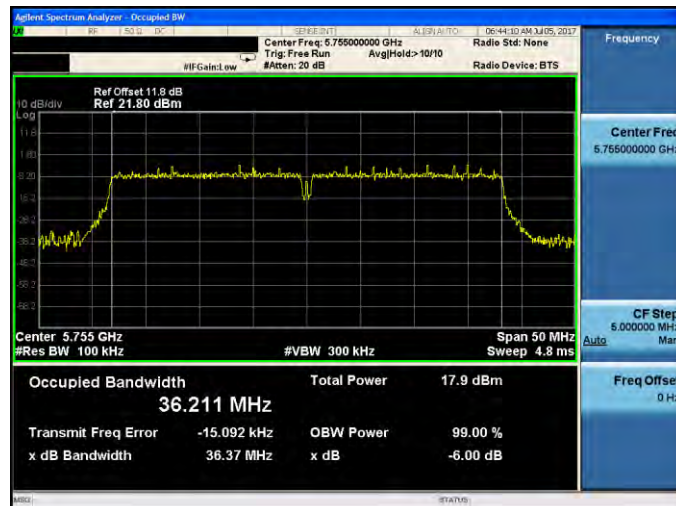
Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode_ANT-0

5745 MHz	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 5.74500000 GHz Trig: Free Run Avg/Hold: 10/10 Radio Std: None Radio Device: BTS Ref Offset 11.8 dB Ref 21.80 dBm Center 5.745 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.690 MHz Total Power 17.5 dBm Transmit Freq Error -18.565 kHz OBW Power 99.00 % x dB Bandwidth 17.61 MHz x dB -6.00 dB Frequency Center Freq 5.74500000 GHz CF Step 3.000000 MHz Auto Man Freq Offset 0 Hz
5785 MHz	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 5.78500000 GHz Trig: Free Run Avg/Hold: 10/10 Radio Std: None Radio Device: BTS Ref Offset 11.8 dB Ref 21.80 dBm Center 5.785 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.698 MHz Total Power 17.4 dBm Transmit Freq Error -19.725 kHz OBW Power 99.00 % x dB Bandwidth 17.62 MHz x dB -6.00 dB Frequency Center Freq 5.78500000 GHz CF Step 3.000000 MHz Auto Man Freq Offset 0 Hz
5825 MHz	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 5.82500000 GHz Trig: Free Run Avg/Hold: 10/10 Radio Std: None Radio Device: BTS Ref Offset 11.8 dB Ref 21.80 dBm Center 5.825 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.697 MHz Total Power 17.3 dBm Transmit Freq Error -30.462 kHz OBW Power 99.00 % x dB Bandwidth 17.61 MHz x dB -6.00 dB Frequency Center Freq 5.82500000 GHz CF Step 3.000000 MHz Auto Man Freq Offset 0 Hz

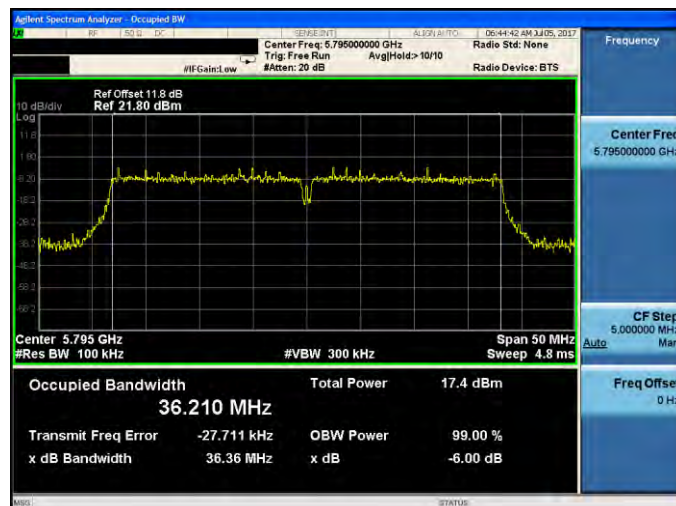


Mode 4: IEEE 802.11n 5GHz 40MHz Continuous TX mode_ANT-0

5755 MHz



5795 MHz



4.5. Peak Power Spectral Density Measurement

■ Limit

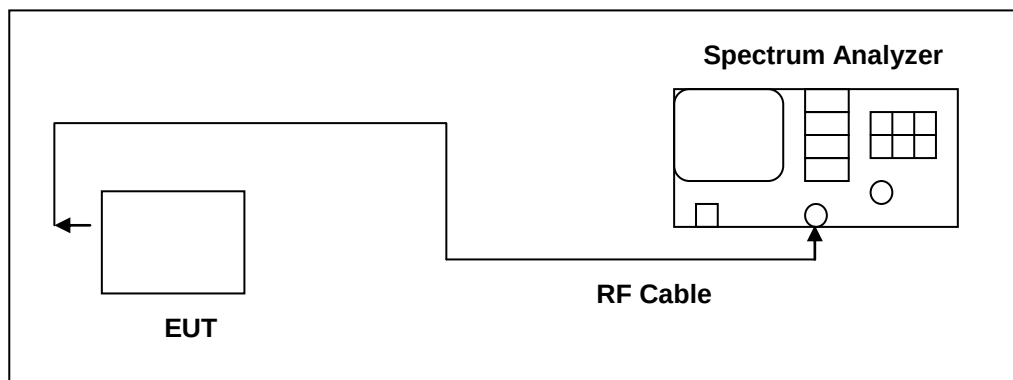
Conducted power spectral density

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,

* Diversity mode for ANT-0 : Max. Gain = 6.06 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	-0.650	0.133	-0.517	< 10.94
5200	-0.512	0.133	-0.379	
5240	1.146	0.133	1.279	
5260	0.829	0.133	0.962	
5280	1.302	0.133	1.435	
5320	1.413	0.133	1.546	
5500	-0.282	0.133	-0.149	
5560	0.293	0.133	0.426	
5700	0.642	0.133	0.775	

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	-6.74	0.133	0.38	< 29.94
5785	-6.91	0.133	0.21	
5825	-7.08	0.133	0.04	

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	-2.920	0.142	-2.778	< 10.94
5200	-1.712	0.142	-1.570	
5240	-1.002	0.142	-0.860	
5260	-1.270	0.142	-1.128	
5280	-0.565	0.142	-0.423	
5320	-0.695	0.142	-0.553	
5500	-1.924	0.142	-1.782	
5560	-1.476	0.142	-1.334	
5700	-1.287	0.142	-1.145	

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	-8.86	0.142	-1.72	< 29.94
5785	-8.58	0.142	-1.45	
5825	-9.48	0.142	-2.35	

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	-6.285	0.310	-5.975	< 10.94
5230	-5.442	0.310	-5.132	
5270	-4.049	0.310	-3.739	
5310	-4.228	0.310	-3.918	
5510	-4.724	0.310	-4.414	
5550	-4.567	0.310	-4.257	
5670	-4.705	0.310	-4.395	

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	-12.06	0.310	-4.76	< 29.94
5795	-11.87	0.310	-4.57	

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	
5280 MHz	
5320 MHz	

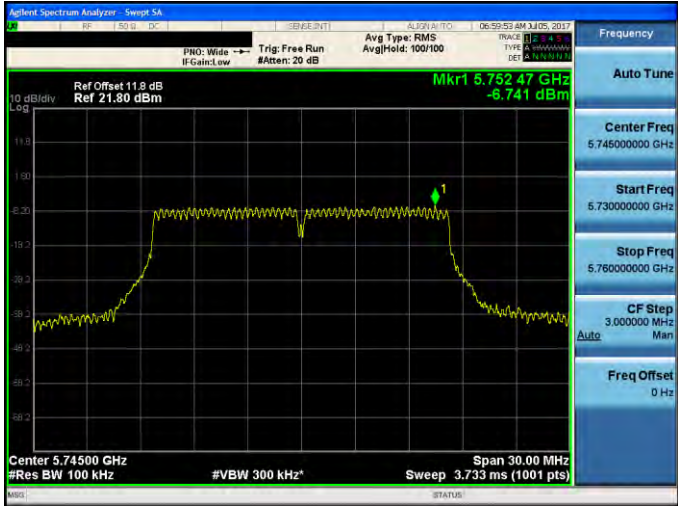
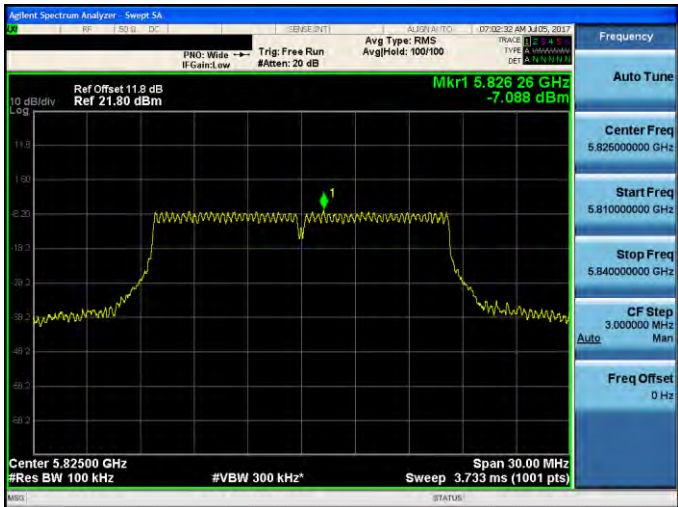


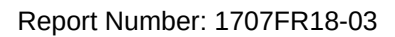
Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0

5500 MHz	
5560 MHz	
5700 MHz	



Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0

5745 MHz	
5785 MHz	
5825 MHz	





Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode_ ANT-0

5260 MHz	
5280 MHz	
5320 MHz	



Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode_ ANT-0

5500 MHz	
5560 MHz	
5700 MHz	



Mode 3: IEEE 802.11n 5GHz 20MHz Continuous TX mode_ ANT-0

5745 MHz	
5785 MHz	
5825 MHz	



Mode 4: IEEE 802.11n 5GHz 40MHz Continuous TX mode_ ANT-0

5190 MHz



5230 MHz





Mode 4: IEEE 802.11n 5GHz 40MHz Continuous TX mode_ ANT-0

5270 MHz



5310 MHz





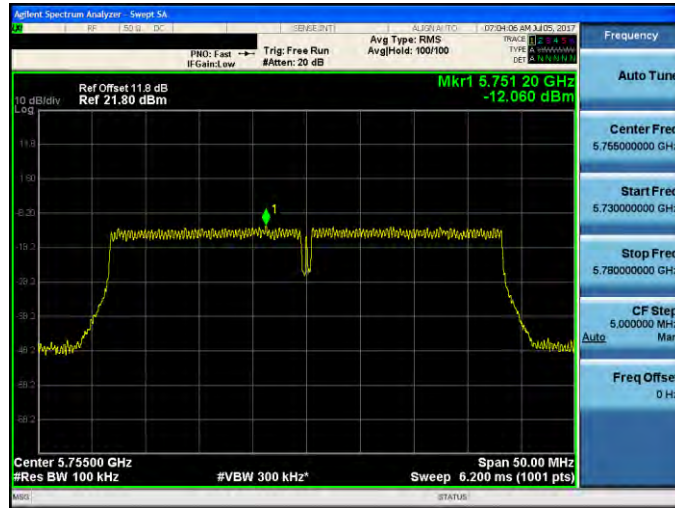
Mode 4: IEEE 802.11n 5GHz 40MHz Continuous TX mode_ ANT-0

5510 MHz	
5550 MHz	
5670 MHz	

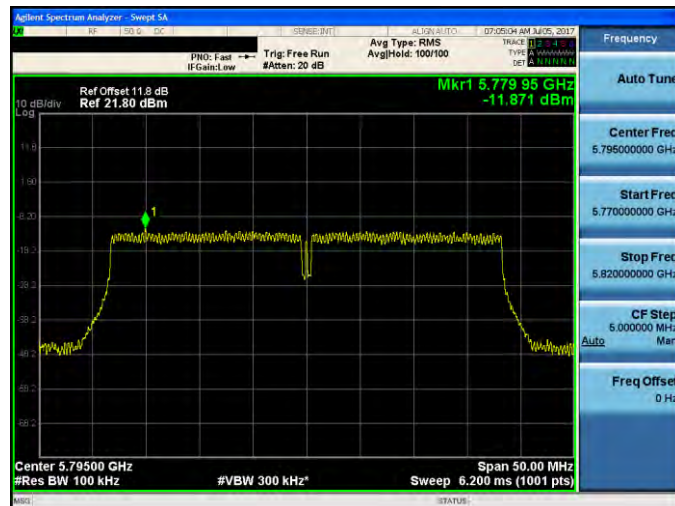


Mode 4: IEEE 802.11n 5GHz 40MHz Continuous TX mode_ ANT-0

5755 MHz



5795 MHz

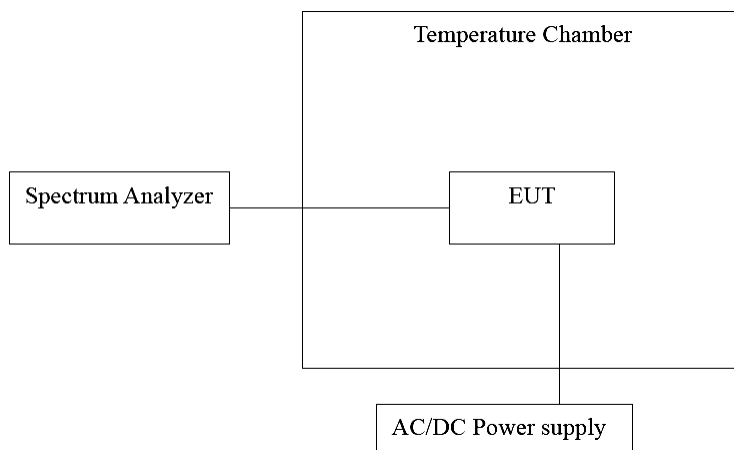


4.6. Frequency Stability Measurement

■ 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	0	5	5200.0200	20000	3.846	Pass
	10		5199.9920	-8000	-1.538	Pass
	20		5199.9880	-12000	-2.308	Pass
	30		5199.9850	-15000	-2.885	Pass
	40		5199.9820	-18000	-3.462	Pass
5280 MHz	0	5	5280.0210	21000	3.977	Pass
	10		5280.0160	16000	3.030	Pass
	20		5279.9950	-5000	-0.947	Pass
	30		5279.9930	-7000	-1.326	Pass
	40		5279.9890	-11000	-2.083	Pass
5560 MHz	0	5	5560.0230	23000	4.137	Pass
	10		5560.0170	17000	3.058	Pass
	20		5559.9940	-6000	-1.079	Pass
	30		5559.9930	-7000	-1.259	Pass
	40		5559.9900	-10000	-1.799	Pass
5785 MHz	0	5	5785.0210	21000	3.630	Pass
	10		5785.0020	2000	0.346	Pass
	20		5784.9910	-9000	-1.556	Pass
	30		5784.9830	-17000	-2.939	Pass
	40		5784.9750	-25000	-4.322	Pass

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

**Voltage Variations**

Test Item	Frequency Stability					
Frequency	Temp. (°C)	Voltage (Vdc)	Measured Freq. (MHz)	Delta Freq. (Hz)	Tolerance (ppm)	Result (Pass/Fail)
5200 MHz	20	5.75	5199.9920	-8000	-1.538	Pass
		5.00	5199.9980	-2000	-0.385	Pass
		4.25	5199.9997	-300	-0.058	Pass
5280 MHz	20	5.75	5279.9935	-6500	-1.231	Pass
		5.00	5279.9950	-5000	-0.947	Pass
		4.25	5280.0010	1000	0.189	Pass
5560 MHz	20	5.75	5559.9830	-17000	-3.058	Pass
		5.00	5559.9940	-6000	-1.079	Pass
		4.25	5560.0010	1000	0.180	Pass
5785 MHz	20	5.75	5784.9850	-15000	-2.593	Pass
		5.00	5784.9910	-9000	-1.556	Pass
		4.25	5785.0020	2000	0.346	Pass

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



4.7. 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.