7.6. Frequency Stability Measurement

7.6.1. Test Limit

Manufactures 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 user's manual.

7.6.2. Test Procedure Used

Frequency Stability Under Temperature Variations:

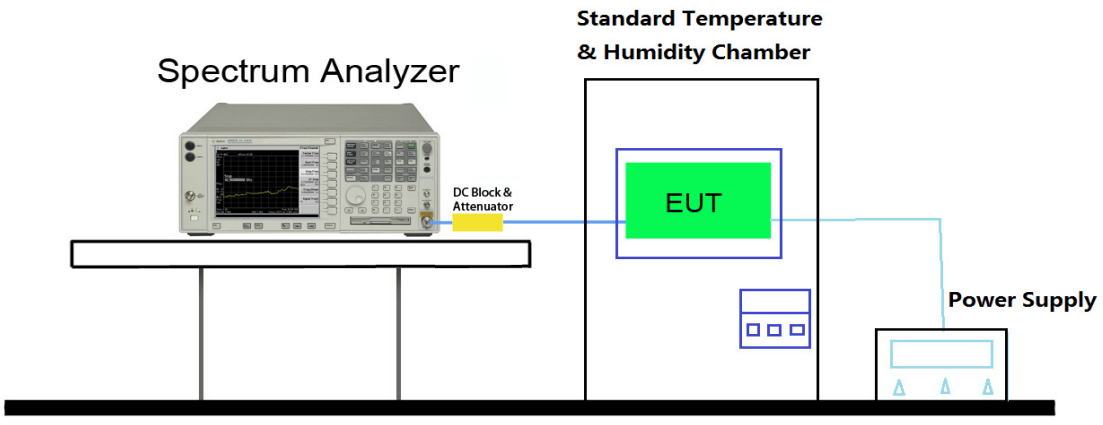
The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to highest. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C decreased per stage until the lowest temperature reached.

Frequency Stability Under Voltage Variations:

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation (±15%) and endpoint, record the maximum frequency change.

7.6.3. Test Setup



7.6.4. Test Result

Test Engineer	Andy Zhu	Temperature	-30 ~ 50°C
Test Time	08-18-2016	Relative Humidity	52%RH

Voltage (%)	Power (VAC)	Temp (°C)	Frequency Tolerance (ppm)			
			0 minutes	2 minutes	5 minutes	10 minutes
100%	120	- 30	-2.37	-2.52	-2.12	-2.31
		- 20	-2.52	-2.93	-2.53	-2.52
		- 10	-3.32	-3.57	-2.94	-3.03
		0	-2.18	-3.31	-2.87	-2.85
		+ 10	-1.52	-3.28	-3.30	-2.11
		+ 20 (Ref)	-1.98	-2.82	-2.71	-2.74
		+ 30	-1.71	-2.84	-1.84	-3.03
		+ 40	-0.87	-2.07	-2.22	-2.84
		+ 50	-1.02	-1.83	-1.78	-2.42
115%	138	+ 20	-1.02	-2.84	-2.39	-1.94
85%	102	+ 20	-0.74	-1.74	-1.87	-2.11

Note: Frequency Tolerance (ppm) = {[Measured Frequency (Hz) – Declared Frequency (Hz)] / Declared Frequency (Hz)} *10^6.

7.7. Radiated Spurious Emission Measurement

7.7.1. Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [V/m]	Measured Distance [Meters]
0.009 – 0.490	2400/F (kHz)	300
0.490 – 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

7.7.2. Test Procedure Used

KDB 789033 D02v01r03 – Section G

7.7.3. Test Setting

Peak Measurements above 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Quasi-Peak Measurements below 1GHz

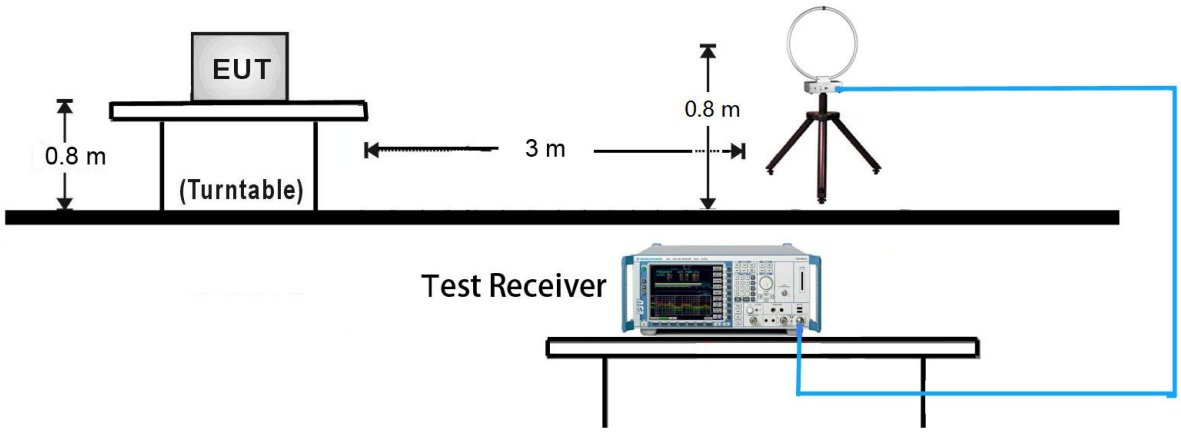
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1MHz
3. RBW = 120 kHz
4. Detector = CISPR quasi-peak
5. Sweep time = auto couple
6. Trace was allowed to stabilize

Average Measurements above 1GHz (Method AD)

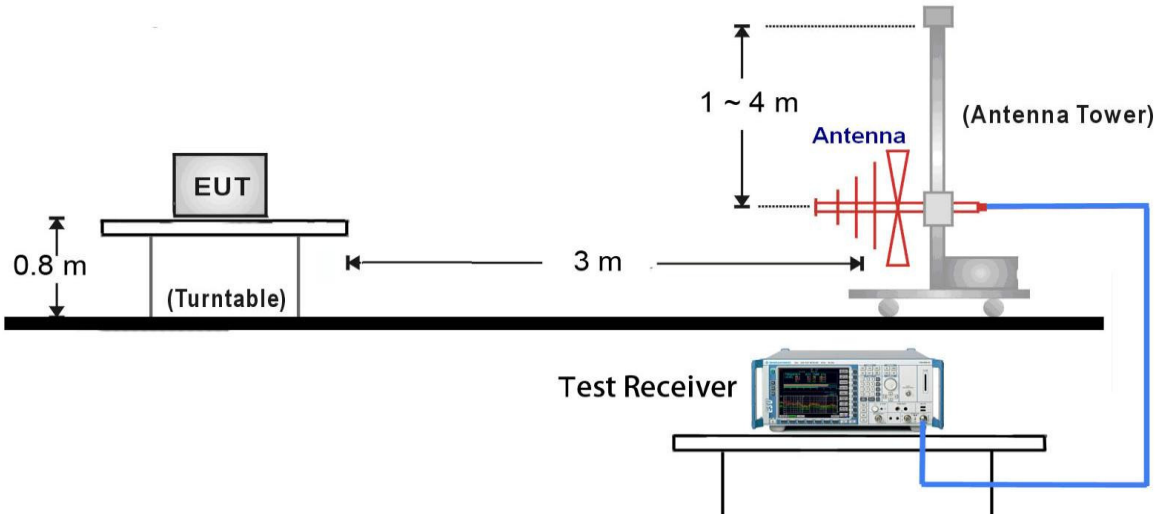
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = power average (Average)
5. Number of measurement points = 1001 (Number of points must be > 2 x span/RBW)
6. Sweep time = auto
7. Trace was averaged over at 100 sweeps

7.7.4. Test Setup

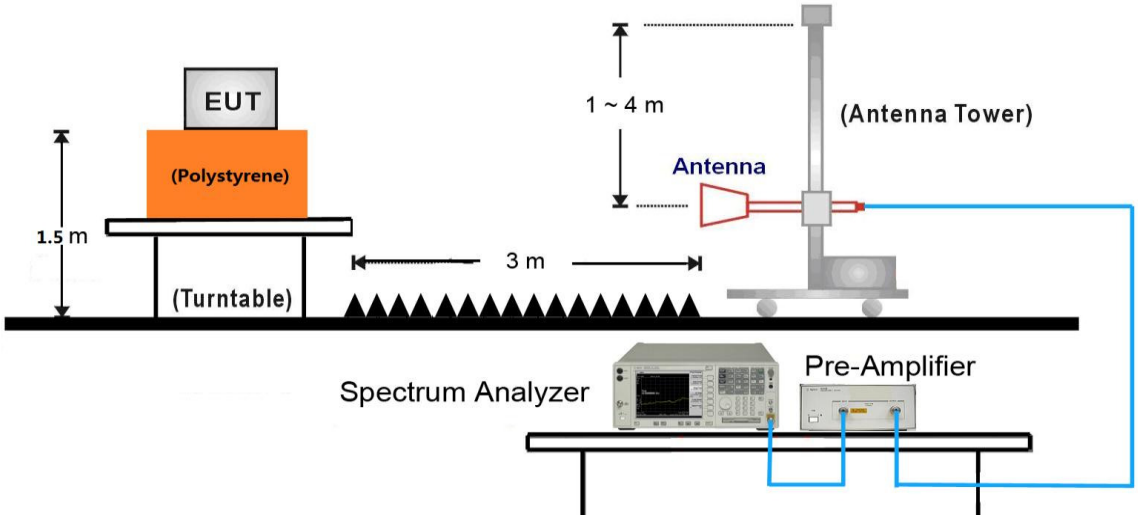
9kHz ~ 30MHz Test Setup:



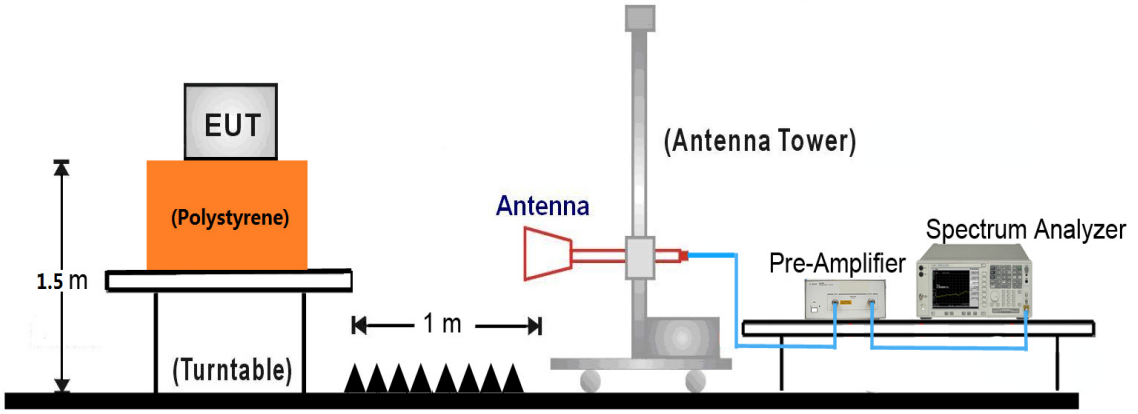
30MHz ~ 1GHz Test Setup:



1GHz ~18GHz Test Setup:



18GHz ~40GHz Test Setup:



7.7.5. Test Result

For Dipole Antenna

Test Mode:	802.11a - Ant 0	Test Site:	AC2
Test Channel:	149	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	9466.0	34.6	12.5	47.1	74.0	-26.9	PK	Horizontal
	11480.5	36.9	17.1	54.0	74.0	-20.0	PK	Horizontal
*	14702.0	34.9	20.2	55.1	68.2	-13.1	PK	Horizontal
*	17082.0	38.0	21.2	59.2	68.2	-9.0	PK	Horizontal
	9432.0	34.9	12.4	47.3	74.0	-26.7	PK	Vertical
	11497.5	37.1	17.3	54.4	74.0	-19.6	PK	Vertical
	11497.5	25.5	17.3	42.8	54.0	-11.2	Average	Vertical
*	15220.5	35.3	18.6	53.9	68.2	-14.3	PK	Vertical
*	17235.0	38.3	22.4	60.7	68.2	-7.5	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Test Mode:	802.11a - Ant 0	Test Site:	AC2
Test Channel:	157	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	9440.5	35.1	12.4	47.5	74.0	-26.5	PK	Horizontal
	11565.5	33.1	17.6	50.7	74.0	-23.3	PK	Horizontal
*	14685.0	34.0	20.2	54.2	68.2	-14.0	PK	Horizontal
*	16963.0	38.1	21.3	59.4	68.2	-8.8	PK	Horizontal
	9423.5	34.8	12.4	47.2	74.0	-26.8	PK	Vertical
	11565.5	35.2	17.6	52.8	74.0	-21.2	PK	Vertical
*	15101.5	35.2	18.4	53.6	68.2	-14.6	PK	Vertical
*	17345.5	38.0	22.8	60.8	68.2	-7.4	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Test Mode:	802.11a - Ant 0	Test Site:	AC2
Test Channel:	165	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	9321.5	33.2	12.9	46.1	74.0	-27.9	PK	Horizontal
	11472.0	33.8	17.1	50.9	74.0	-23.1	PK	Horizontal
*	15152.5	34.6	18.7	53.3	68.2	-14.9	PK	Horizontal
*	17073.5	37.4	21.7	59.1	68.2	-9.1	PK	Horizontal
	9423.5	35.2	12.4	47.6	74.0	-26.4	PK	Vertical
	11404.0	33.4	17.2	50.6	74.0	-23.4	PK	Vertical
*	14387.5	35.1	20.7	55.8	68.2	-12.4	PK	Vertical
*	17481.5	38.0	23.5	61.5	68.2	-6.7	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Test Mode:	802.11a - Ant 1	Test Site:	AC2
Test Channel:	149	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	11497.5	40.9	17.3	58.2	74.0	-15.8	PK	Horizontal
	11497.5	24.8	17.3	42.1	54.0	-11.9	Average	Horizontal
	12007.5	33.7	17.1	50.8	74.0	-23.2	PK	Horizontal
*	15195.0	35.0	18.9	53.9	68.2	-14.3	PK	Horizontal
*	17235.0	38.9	22.4	61.3	68.2	-6.9	PK	Horizontal
	11489.0	36.8	17.1	53.9	74.0	-20.1	PK	Vertical
	12075.5	34.5	17.0	51.5	74.0	-22.5	PK	Vertical
*	14974.0	34.5	20.0	54.5	68.2	-13.7	PK	Vertical
*	17235.0	40.8	22.4	63.2	68.2	-5.0	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz or -17dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Test Mode:	802.11a - Ant 1	Test Site:	AC2
Test Channel:	157	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	11565.5	40.8	17.6	58.4	74.0	-15.6	PK	Horizontal
	11565.5	26.7	17.6	44.3	54.0	-9.7	Average	Horizontal
	12058.5	33.8	17.1	50.9	74.0	-23.1	PK	Horizontal
*	15220.5	35.2	18.6	53.8	68.2	-14.4	PK	Horizontal
*	17379.5	36.4	23.2	59.6	68.2	-8.6	PK	Horizontal
	11565.5	34.7	17.6	52.3	74.0	-21.7	PK	Vertical
	12058.5	33.4	17.1	50.5	74.0	-23.5	PK	Vertical
*	14362.0	35.3	20.7	56.0	68.2	-12.2	PK	Vertical
*	17065.0	37.9	21.4	59.3	68.2	-8.9	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz or -17dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Test Mode:	802.11a - Ant 1	Test Site:	AC2
Test Channel:	165	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	11659.0	38.1	17.5	55.6	74.0	-18.4	PK	Horizontal
	12050.0	33.6	17.1	50.7	74.0	-23.3	PK	Horizontal
*	15229.0	35.0	18.6	53.6	68.2	-14.6	PK	Horizontal
*	17073.5	38.2	21.7	59.9	68.2	-8.3	PK	Horizontal
	11650.5	34.3	17.4	51.7	74.0	-22.3	PK	Vertical
	12016.0	33.3	17.2	50.5	74.0	-23.5	PK	Vertical
*	15254.5	35.6	18.9	54.5	68.2	-13.7	PK	Vertical
*	16997.0	38.6	21.1	59.7	68.2	-8.5	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz or -17dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Test Mode:	802.11n-HT20 - Ant 0 + 1	Test Site:	AC2
Test Channel:	149	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	9330.0	33.8	12.9	46.7	74.0	-27.3	PK	Horizontal
	11489.0	39.1	17.1	56.2	74.0	-17.8	PK	Horizontal
	11489.0	26.5	17.1	43.6	54.0	-10.4	Average	Horizontal
*	15237.5	35.3	18.6	53.9	68.2	-14.3	PK	Horizontal
*	17226.5	38.1	22.2	60.3	68.2	-7.9	PK	Horizontal
	9100.5	33.6	12.1	45.7	74.0	-28.3	PK	Vertical
	11480.5	37.6	17.1	54.7	74.0	-19.3	PK	Vertical
	11480.5	24.5	17.1	41.6	54.0	-12.4	Average	Vertical
*	15220.5	35.3	18.6	53.9	68.2	-14.3	PK	Vertical
*	17235.0	40.8	22.4	63.2	68.2	-5.0	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz or -17dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Test Mode:	802.11n-HT20 - Ant 0 + 1	Test Site:	AC2
Test Channel:	157	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	9423.5	35.2	12.4	47.6	74.0	-26.4	PK	Horizontal
	11574.0	37.2	17.4	54.6	74.0	-19.4	PK	Horizontal
	11574.0	25.0	17.4	42.4	54.0	-11.6	Average	Horizontal
*	15280.0	35.7	18.7	54.4	68.2	-13.8	PK	Horizontal
*	17090.5	38.4	20.8	59.2	68.2	-9.0	PK	Horizontal
	9432.0	34.5	12.4	46.9	74.0	-27.1	PK	Vertical
	11565.5	35.1	17.6	52.7	74.0	-21.3	PK	Vertical
*	15135.5	35.1	18.6	53.7	68.2	-14.5	PK	Vertical
*	17345.5	37.7	22.8	60.5	68.2	-7.7	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz or -17dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Test Mode:	802.11n-HT20 - Ant 0 + 1	Test Site:	AC2
Test Channel:	165	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	9457.5	35.8	12.4	48.2	74.0	-25.8	PK	Horizontal
	11642.0	36.2	17.4	53.6	74.0	-20.4	PK	Horizontal
*	14506.5	34.7	20.8	55.5	68.2	-12.7	PK	Horizontal
*	16818.5	38.5	20.4	58.9	68.2	-9.3	PK	Horizontal
	9432.0	35.5	12.4	47.9	74.0	-26.1	PK	Vertical
	11642.0	34.3	17.4	51.7	74.0	-22.3	PK	Vertical
*	15169.5	34.8	18.6	53.4	68.2	-14.8	PK	Vertical
*	16963.0	37.2	21.3	58.5	68.2	-9.7	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz or -17dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Test Mode:	802.11n-HT40 - Ant 0 + 1	Test Site:	AC2
Test Channel:	151	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	9347.0	34.1	12.4	46.5	74.0	-27.5	PK	Horizontal
	11514.5	35.2	17.4	52.6	74.0	-21.4	PK	Horizontal
*	14370.5	35.5	20.7	56.2	68.2	-12.0	PK	Horizontal
*	16861.0	37.7	20.6	58.3	68.2	-9.9	PK	Horizontal
	9449.0	35.0	12.4	47.4	74.0	-26.6	PK	Vertical
	11514.5	34.2	17.4	51.6	74.0	-22.4	PK	Vertical
*	15186.5	35.6	18.8	54.4	68.2	-13.8	PK	Vertical
*	16971.5	37.6	21.2	58.8	68.2	-9.4	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz or -17dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Test Mode:	802.11n-HT40 - Ant 0 + 1	Test Site:	AC2
Test Channel:	159	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	9330.0	33.2	12.9	46.1	74.0	-27.9	PK	Horizontal
	11574.0	33.8	17.4	51.2	74.0	-22.8	PK	Horizontal
*	14736.0	34.3	20.4	54.7	68.2	-13.5	PK	Horizontal
*	17065.0	37.8	21.4	59.2	68.2	-9.0	PK	Horizontal
	9432.0	34.4	12.4	46.8	74.0	-27.2	PK	Vertical
	11506.0	33.3	17.5	50.8	74.0	-23.2	PK	Vertical
*	14931.5	34.4	19.9	54.3	68.2	-13.9	PK	Vertical
*	16971.5	38.3	21.2	59.5	68.2	-8.7	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz or -17dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

For PCB Antenna

Test Mode:	802.11a - Ant 0	Test Site:	AC2
Test Channel:	149	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	9415.0	34.9	12.3	47.2	74.0	-26.8	PK	Horizontal
	11557.0	32.9	17.7	50.6	74.0	-23.4	PK	Horizontal
*	15135.5	35.1	18.6	53.7	68.2	-14.5	PK	Horizontal
*	17235.0	37.1	22.4	59.5	68.2	-8.7	PK	Horizontal
	9415.0	35.0	12.3	47.3	74.0	-26.7	PK	Vertical
	11497.5	35.2	17.3	52.5	74.0	-21.5	PK	Vertical
*	15186.5	34.8	18.8	53.6	68.2	-14.6	PK	Vertical
*	17226.5	38.6	22.2	60.8	68.2	-7.4	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Test Mode:	802.11a - Ant 0	Test Site:	AC2
Test Channel:	157	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	9338.5	33.3	12.6	45.9	74.0	-28.1	PK	Horizontal
	11412.5	32.7	17.2	49.9	74.0	-24.1	PK	Horizontal
*	15246.0	35.2	18.8	54.0	68.2	-14.2	PK	Horizontal
*	17005.5	37.6	21.0	58.6	68.2	-9.6	PK	Horizontal
	9321.5	33.8	12.9	46.7	74.0	-27.3	PK	Vertical
	11429.5	33.9	17.0	50.9	74.0	-23.1	PK	Vertical
*	15161.0	35.4	18.7	54.1	68.2	-14.1	PK	Vertical
*	17354.0	41.3	22.7	64.0	68.2	-4.2	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Test Mode:	802.11a - Ant 0	Test Site:	AC2
Test Channel:	165	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	9440.5	35.6	12.4	48.0	74.0	-26.0	PK	Horizontal
	11446.5	33.6	17.1	50.7	74.0	-23.3	PK	Horizontal
*	15305.5	34.8	18.6	53.4	68.2	-14.8	PK	Horizontal
*	17073.5	37.7	21.7	59.4	68.2	-8.8	PK	Horizontal
	9355.5	34.5	12.7	47.2	74.0	-26.8	PK	Vertical
	11455.0	33.1	17.3	50.4	74.0	-23.6	PK	Vertical
*	15152.5	35.5	18.7	54.2	68.2	-14.0	PK	Vertical
*	17481.5	40.0	23.5	63.5	68.2	-4.7	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Test Mode:	802.11a - Ant 1	Test Site:	AC2
Test Channel:	149	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	9474.5	34.5	12.3	46.8	74.0	-27.2	PK	Horizontal
	11480.5	35.1	17.1	52.2	74.0	-21.8	PK	Horizontal
*	15305.5	35.6	18.6	54.2	68.2	-14.0	PK	Horizontal
*	17073.5	37.6	21.7	59.3	68.2	-8.9	PK	Horizontal
	9432.0	34.4	12.4	46.8	74.0	-27.2	PK	Vertical
	11489.0	36.8	17.1	53.9	74.0	-20.1	PK	Vertical
*	15229.0	35.7	18.6	54.3	68.2	-13.9	PK	Vertical
*	17243.5	40.8	22.2	63.0	68.2	-5.2	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz or -17dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Test Mode:	802.11a - Ant 1	Test Site:	AC2
Test Channel:	157	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	9355.5	34.1	12.7	46.8	74.0	-27.2	PK	Horizontal
	11565.5	33.0	17.6	50.6	74.0	-23.4	PK	Horizontal
*	15169.5	36.0	18.6	54.6	68.2	-13.6	PK	Horizontal
*	17065.0	37.3	21.4	58.7	68.2	-9.5	PK	Horizontal
	9449.0	34.7	12.4	47.1	74.0	-26.9	PK	Vertical
	12050.0	34.6	17.1	51.7	74.0	-22.3	PK	Vertical
*	14370.5	34.7	20.7	55.4	68.2	-12.8	PK	Vertical
*	17286.0	36.3	22.6	58.9	68.2	-9.3	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz or -17dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Test Mode:	802.11a - Ant 1	Test Site:	AC2
Test Channel:	165	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	9364.0	34.8	12.8	47.6	74.0	-26.4	PK	Horizontal
	11412.5	32.9	17.2	50.1	74.0	-23.9	PK	Horizontal
*	14370.5	35.1	20.7	55.8	68.2	-12.4	PK	Horizontal
*	17073.5	37.6	21.7	59.3	68.2	-8.9	PK	Horizontal
	9415.0	35.6	12.3	47.9	74.0	-26.1	PK	Vertical
	11404.0	33.4	17.2	50.6	74.0	-23.4	PK	Vertical
*	15229.0	35.5	18.6	54.1	68.2	-14.1	PK	Vertical
*	17073.5	37.9	21.7	59.6	68.2	-8.6	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz or -17dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Test Mode:	802.11n-HT20 - Ant 0 + 1	Test Site:	AC2
Test Channel:	149	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	9423.5	35.0	12.4	47.4	74.0	-26.6	PK	Horizontal
	11480.5	33.3	17.1	50.4	74.0	-23.6	PK	Horizontal
*	15135.5	35.4	18.6	54.0	68.2	-14.2	PK	Horizontal
*	17235.0	37.6	22.4	60.0	68.2	-8.2	PK	Horizontal
	9381.0	35.0	12.5	47.5	74.0	-26.5	PK	Vertical
	11497.5	35.2	17.3	52.5	74.0	-21.5	PK	Vertical
*	15237.5	35.0	18.6	53.6	68.2	-14.6	PK	Vertical
*	17226.5	38.4	22.2	60.6	68.2	-7.6	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz or -17dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Test Mode:	802.11n-HT20 - Ant 0 + 1	Test Site:	AC2
Test Channel:	157	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	9355.5	33.3	12.7	46.0	74.0	-28.0	PK	Horizontal
	12041.5	34.0	17.0	51.0	74.0	-23.0	PK	Horizontal
*	15161.0	35.5	18.7	54.2	68.2	-14.0	PK	Horizontal
*	17090.5	38.3	20.8	59.1	68.2	-9.1	PK	Horizontal
	9364.0	34.5	12.8	47.3	74.0	-26.7	PK	Vertical
	12092.5	34.5	16.9	51.4	74.0	-22.6	PK	Vertical
*	15220.5	34.8	18.6	53.4	68.2	-14.8	PK	Vertical
*	17362.5	38.0	22.9	60.9	68.2	-7.3	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz or -17dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Test Mode:	802.11n-HT20 - Ant 0 + 1	Test Site:	AC2
Test Channel:	165	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	9457.5	35.3	12.4	47.7	74.0	-26.3	PK	Horizontal
	11421.0	32.8	17.1	49.9	74.0	-24.1	PK	Horizontal
*	15271.5	35.7	18.4	54.1	68.2	-14.1	PK	Horizontal
*	17473.0	36.7	23.1	59.8	68.2	-8.4	PK	Horizontal
	9415.0	34.9	12.3	47.2	74.0	-26.8	PK	Vertical
	11531.5	34.7	17.2	51.9	74.0	-22.1	PK	Vertical
*	15263.0	35.7	18.4	54.1	68.2	-14.1	PK	Vertical
*	17481.5	37.3	23.5	60.8	68.2	-7.4	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz or -17dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Test Mode:	802.11n-HT40 - Ant 0 + 1	Test Site:	AC2
Test Channel:	151	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	9398.0	34.6	12.3	46.9	74.0	-27.1	PK	Horizontal
	11446.5	33.5	17.1	50.6	74.0	-23.4	PK	Horizontal
*	14370.5	36.1	20.7	56.8	68.2	-11.4	PK	Horizontal
*	17073.5	37.3	21.7	59.0	68.2	-9.2	PK	Horizontal
	9466.0	34.8	12.5	47.3	74.0	-26.7	PK	Vertical
	11438.0	33.6	17.0	50.6	74.0	-23.4	PK	Vertical
*	15161.0	36.2	18.7	54.9	68.2	-13.3	PK	Vertical
*	17065.0	37.5	21.4	58.9	68.2	-9.3	PK	Vertical

Note 1: "*" is not in restricted band, its limit is -27dBm/MHz or -17dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Test Mode:	802.11n-HT40 - Ant 0 + 1	Test Site:	AC2
Test Channel:	159	Test Engineer:	Lewis Huang
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	9457.5	35.0	12.4	47.4	74.0	-26.6	PK	Horizontal
	12058.5	34.0	17.1	51.1	74.0	-22.9	PK	Horizontal
*	15254.5	34.9	18.9	53.8	68.2	-14.4	PK	Horizontal
*	17073.5	37.5	21.7	59.2	68.2	-9.0	PK	Horizontal
	9423.5	34.7	12.4	47.1	74.0	-26.9	PK	Vertical
	11421.0	33.6	17.1	50.7	74.0	-23.3	PK	Vertical
*	15152.5	35.8	18.7	54.5	68.2	-13.7	PK	Vertical
*	16971.5	37.9	21.2	59.1	68.2	-9.1	PK	Vertical

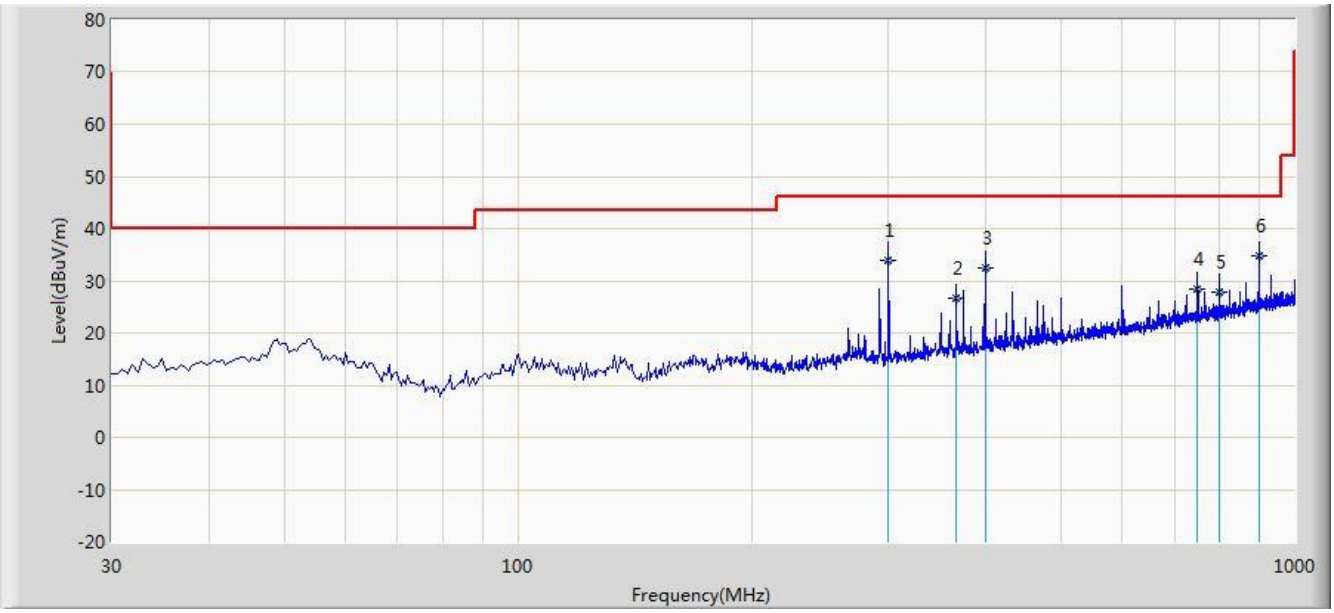
Note 1: "*" is not in restricted band, its limit is -27dBm/MHz or -17dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

The worst case of Radiated Emission below 1GHz:

Site: AC2	Time: 2016/08/30 - 13:16
Limit: FCC_Part15.209_RE(3m)	Engineer: Lewis Huang
Probe: VULB9162_0.03-8GHz	Polarity: Horizontal
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Worst Mode: Transmit by 802.11n-HT40 at channel 5755MHz Ant 0 + 1	

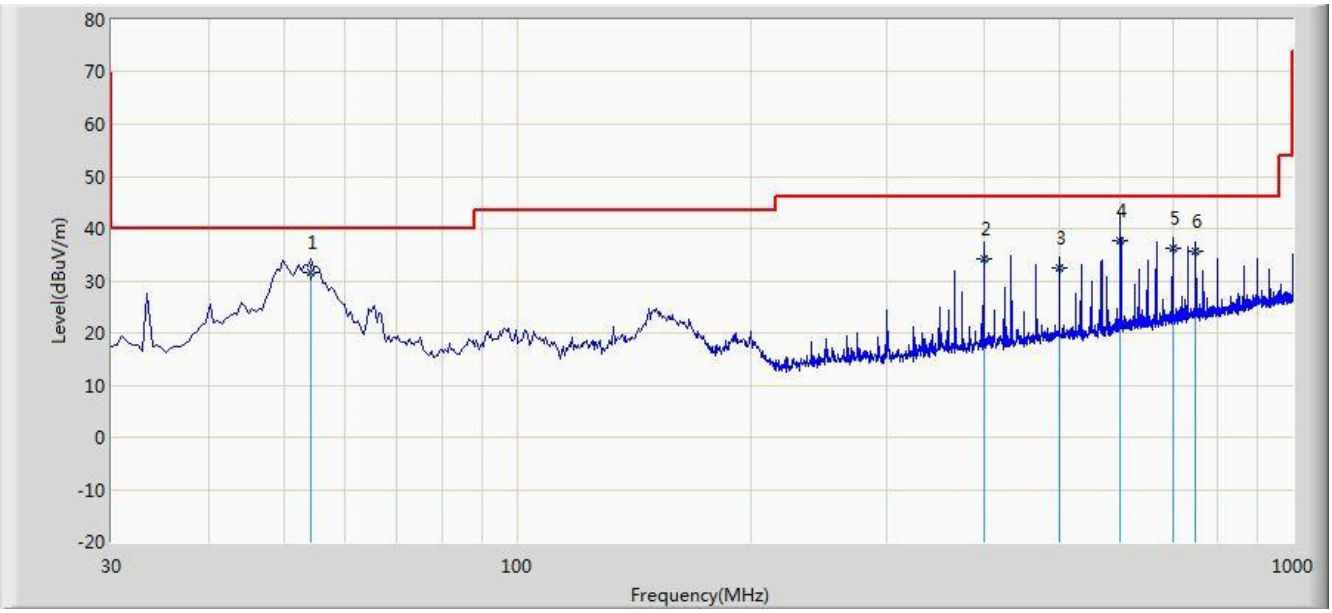


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			300.145	33.994	19.415	-12.006	46.000	14.579	QP
2			366.590	26.632	10.521	-19.368	46.000	16.111	QP
3			400.055	32.378	15.623	-13.622	46.000	16.755	QP
4			750.225	28.374	6.112	-17.626	46.000	22.262	QP
5			800.180	27.865	5.002	-18.135	46.000	22.863	QP
6		*	900.090	34.894	10.745	-11.106	46.000	24.149	QP

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/30 - 13:17
Limit: FCC_Part15.209_RE(3m)	Engineer: Lewis Huang
Probe: VULB9162_0.03-8GHz	Polarity: Vertical
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Worst Mode: Transmit by 802.11n-HT40 at channel 5755MHz Ant 0 + 1	

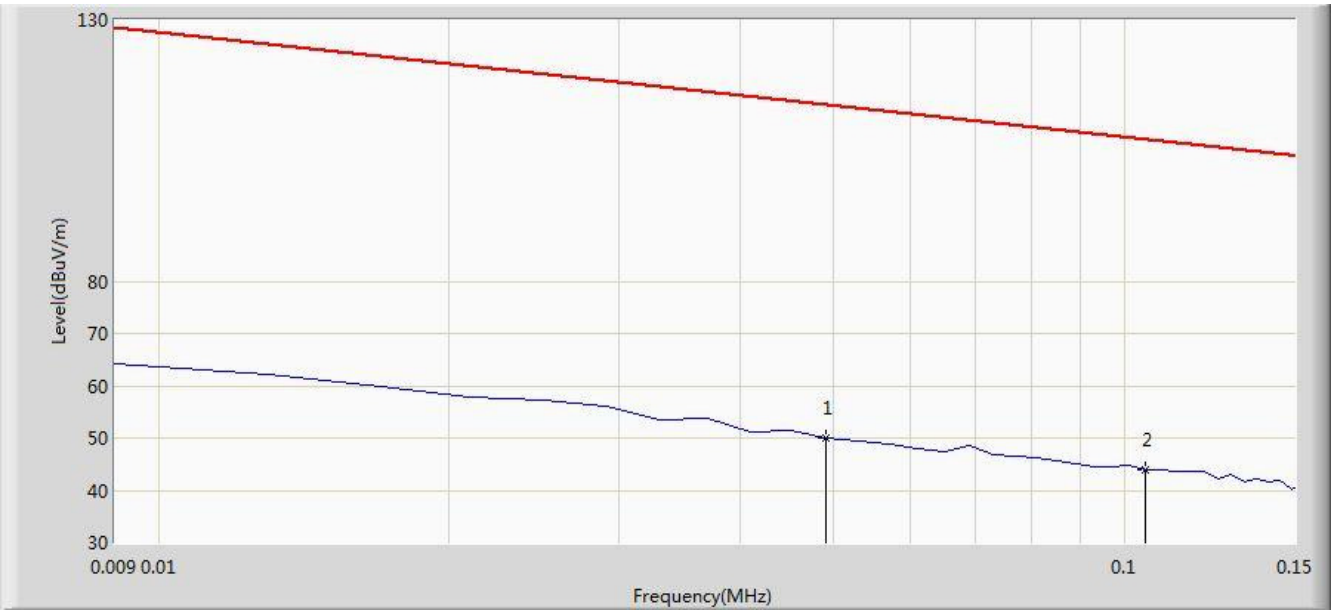


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			54.250	31.516	16.710	-8.484	40.000	14.806	QP
2			400.055	34.311	17.556	-11.689	46.000	16.755	QP
3			499.956	32.557	14.226	-13.443	46.000	18.331	QP
4		*	599.875	37.646	17.552	-8.354	46.000	20.094	QP
5			699.785	36.219	14.626	-9.781	46.000	21.593	QP
6			750.225	35.565	13.303	-10.435	46.000	22.262	QP

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/17 - 16:18
Limit: FCC_Part15.209_RE(3m)	Engineer: Lewis Huang
Probe: FMZB1519_0.009-30MHz	Polarity: Face on
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: There is the ambient noise within frequency range 9kHz~30MHz.	



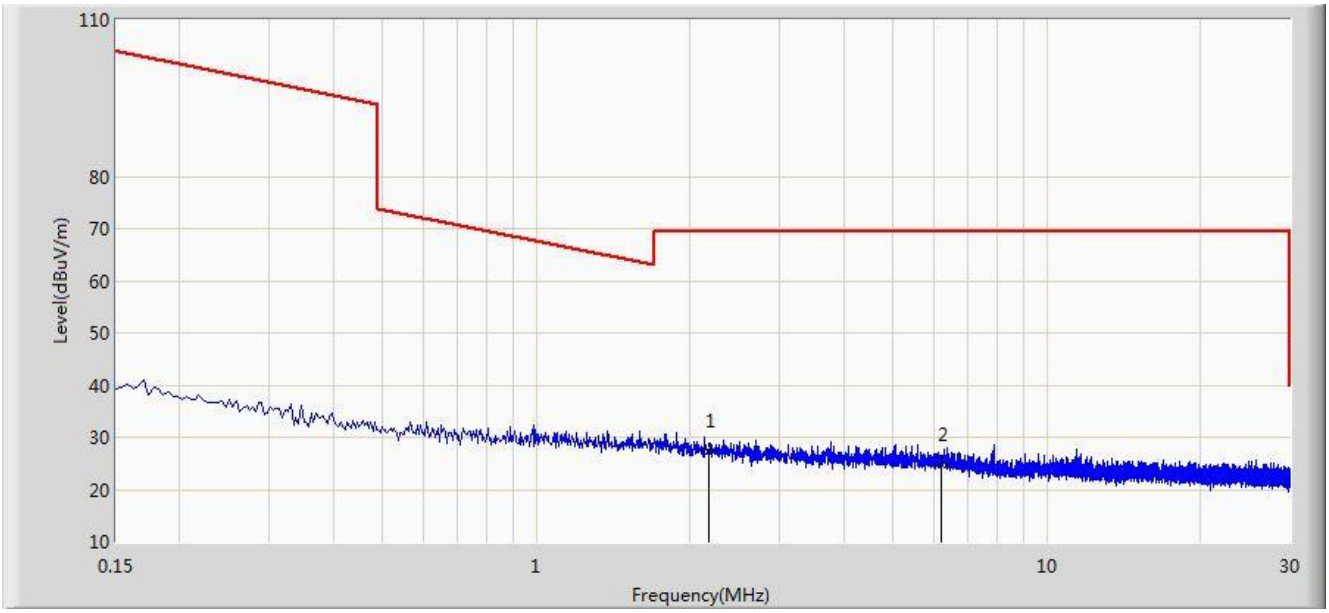
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			0.049	50.112	29.552	-63.688	113.800	20.560	AV
2		*	0.105	44.043	23.845	-63.137	107.180	20.198	QP

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Limit@3m = 20*Log((2400/49)uV/m) + 40*Log(300m/3m) = 113.800dBμv/m (Average detector)

Site: AC2	Time: 2016/08/17 - 16:19
Limit: FCC_Part15.209_RE(3m)	Engineer: Lewis Huang
Probe: FMZB1519_0.009-30MHz	Polarity: Face on
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: There is the ambient noise within frequency range 9kHz~30MHz.	



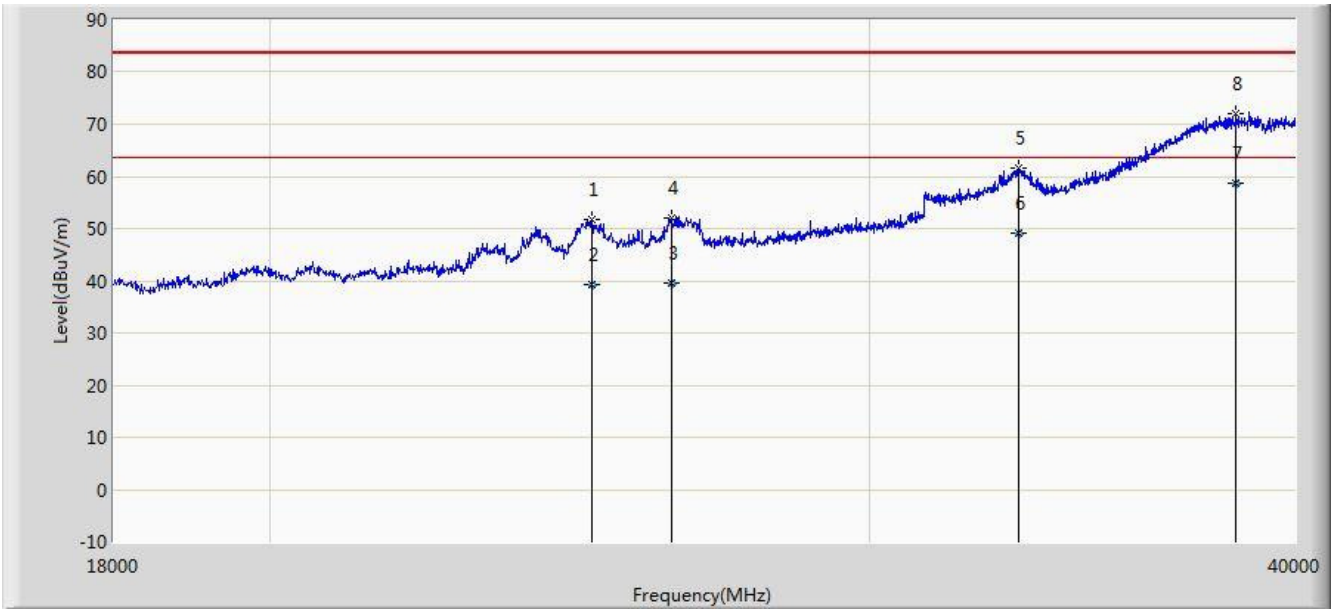
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2.175	27.371	6.960	-42.129	69.500	20.412	QP
2			6.216	24.786	4.701	-44.714	69.500	20.085	QP

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Limit@3m = 20*Log(30uV/m) + 20*Log(30m/3m) = 49.5dBμv/m (Average detector), and 69.5dBμv/m (Quasi-Peak detector).

Site: AC2	Time: 2016/08/17 - 21:25
Limit: FCC_Part15.209_RE(1m)	Engineer: Lewis Huang
Probe: BBHA9170_18-40GHz	Polarity: Horizontal
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: There is the ambient noise within frequency range 18GHz~40GHz.	

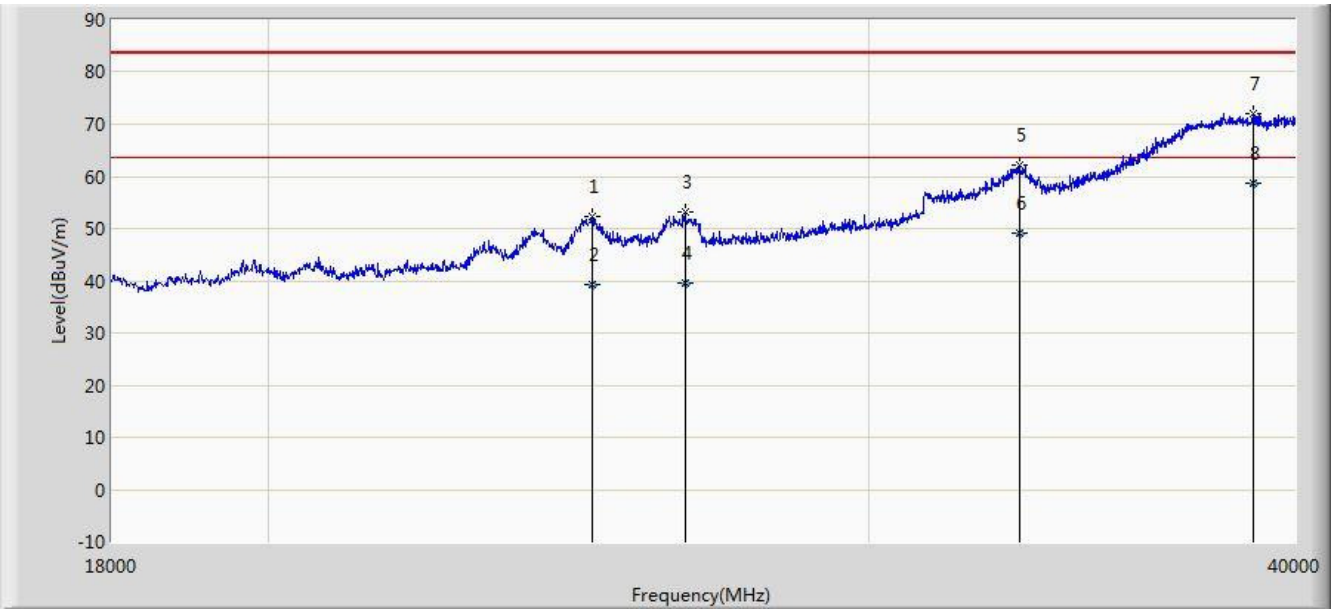


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			24864.000	51.836	37.061	-31.664	83.500	14.775	PK
2			24864.088	39.225	24.450	-24.275	63.500	14.775	AV
3			26260.988	39.469	24.050	-24.031	63.500	15.419	AV
4			26261.000	51.956	36.537	-31.544	83.500	15.419	PK
5			33180.000	61.461	39.940	-22.039	83.500	21.521	PK
6			33180.361	49.061	27.540	-14.439	63.500	21.521	AV
7		*	38437.980	58.523	31.190	-4.977	63.500	27.333	AV
8			38438.000	72.021	44.688	-11.479	83.500	27.333	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

Site: AC2	Time: 2016/08/17 - 21:28
Limit: FCC_Part15.209_RE(1m)	Engineer: Lewis Huang
Probe: BBHA9170_18-40GHz	Polarity: Vertical
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: There is the ambient noise within frequency range 18GHz~40GHz.	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			24886.000	52.313	37.528	-31.187	83.500	14.785	PK
2			24886.970	39.234	24.449	-24.266	63.500	14.785	AV
3			26503.000	53.227	37.207	-30.273	83.500	16.020	PK
4			26503.872	39.572	23.550	-23.928	63.500	16.022	AV
5			33213.000	62.110	40.572	-21.390	83.500	21.538	PK
6			33213.984	49.098	27.560	-14.402	63.500	21.538	AV
7			38900.000	72.096	44.211	-11.404	83.500	27.885	PK
8		*	38900.755	58.705	30.820	-4.795	63.500	27.885	AV

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) – Pre_Amplifier Gain (dB)

7.8. Radiated Restricted Band Edge Measurement

7.8.1. Test Limit

For 15.205 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1] 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.25 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 – 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])
13.36 - 13.41	--	--	--

For 15.407(b)(4)(i) requirement:

All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

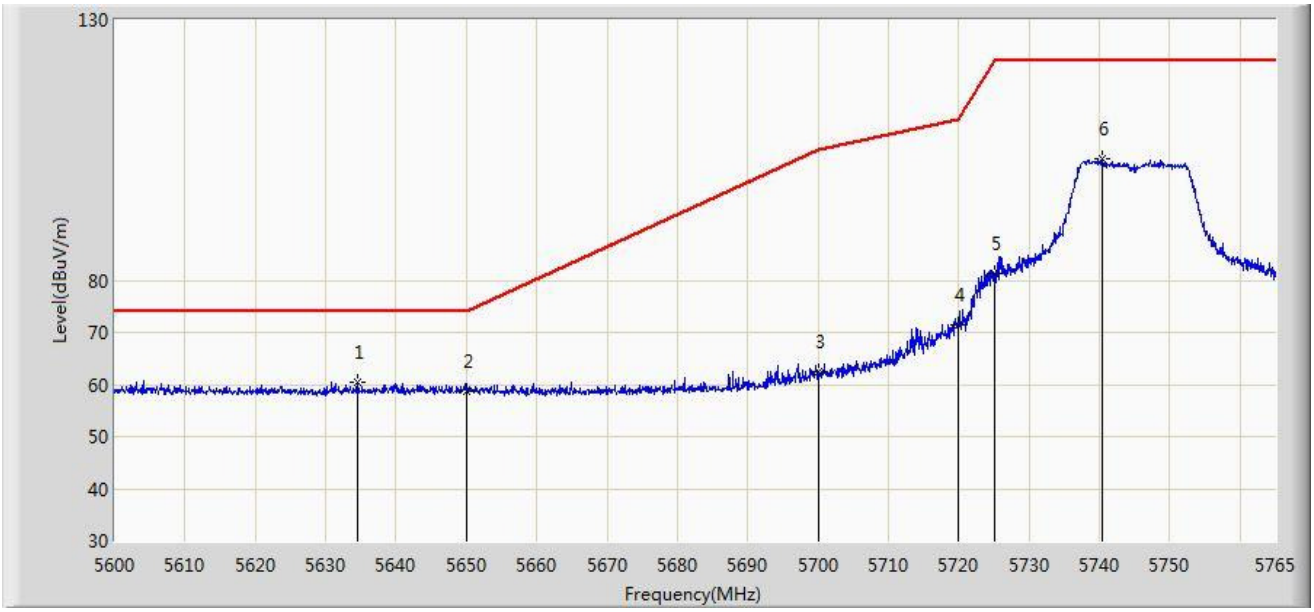
All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/m]	Measured Distance [Meters]
0.009 – 0.490	2400/F (kHz)	300
0.490 – 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

7.8.2. Test Result of Radiated Restricted Band Edge

For Dipole Antenna

Site: AC2	Time: 2016/08/19 - 19:45
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11a at Channel 5745MHz Ant 0	

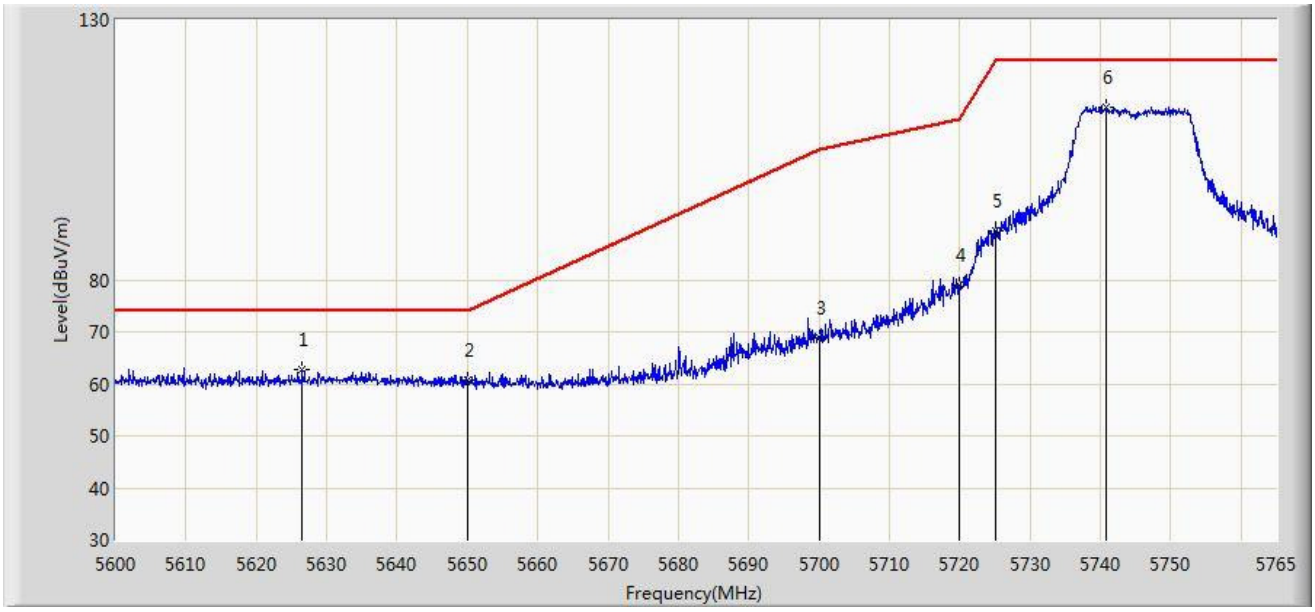


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5634.567	60.550	56.840	-13.450	74.000	3.711	PK
2		5650.000	58.782	54.979	-15.218	74.000	3.803	PK
3		5700.000	62.358	58.418	-42.842	105.200	3.940	PK
4		5720.000	71.590	67.608	-39.210	110.800	3.982	PK
5		5725.000	81.171	77.065	-41.029	122.200	4.105	PK
6		5740.333	103.272	98.995	N/A	N/A	4.277	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 20:39
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11a at Channel 5745MHz Ant 0	

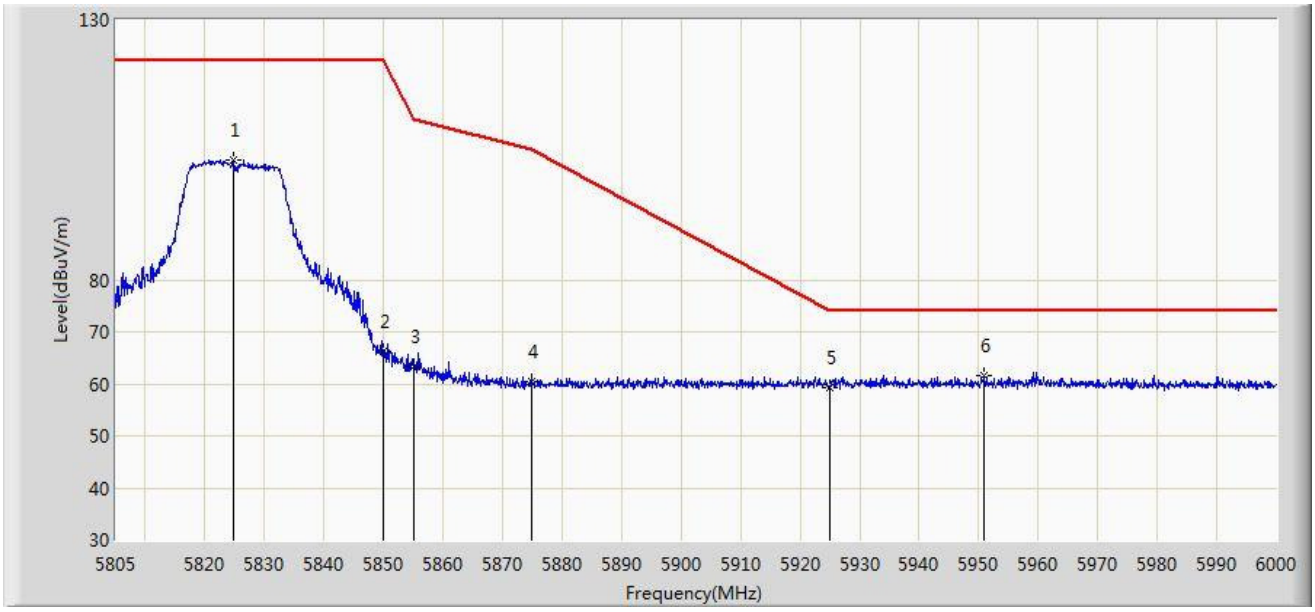


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5626.482	62.884	59.320	-11.116	74.000	3.563	PK
2		5650.000	60.643	56.840	-13.357	74.000	3.803	PK
3		5700.000	68.940	65.000	-36.260	105.200	3.940	PK
4		5720.000	79.077	75.095	-31.723	110.800	3.982	PK
5		5725.000	89.393	85.287	-32.807	122.200	4.105	PK
6	*	5740.745	113.327	109.051	N/A	N/A	4.276	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 20:41
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11a at Channel 5825MHz Ant 0	

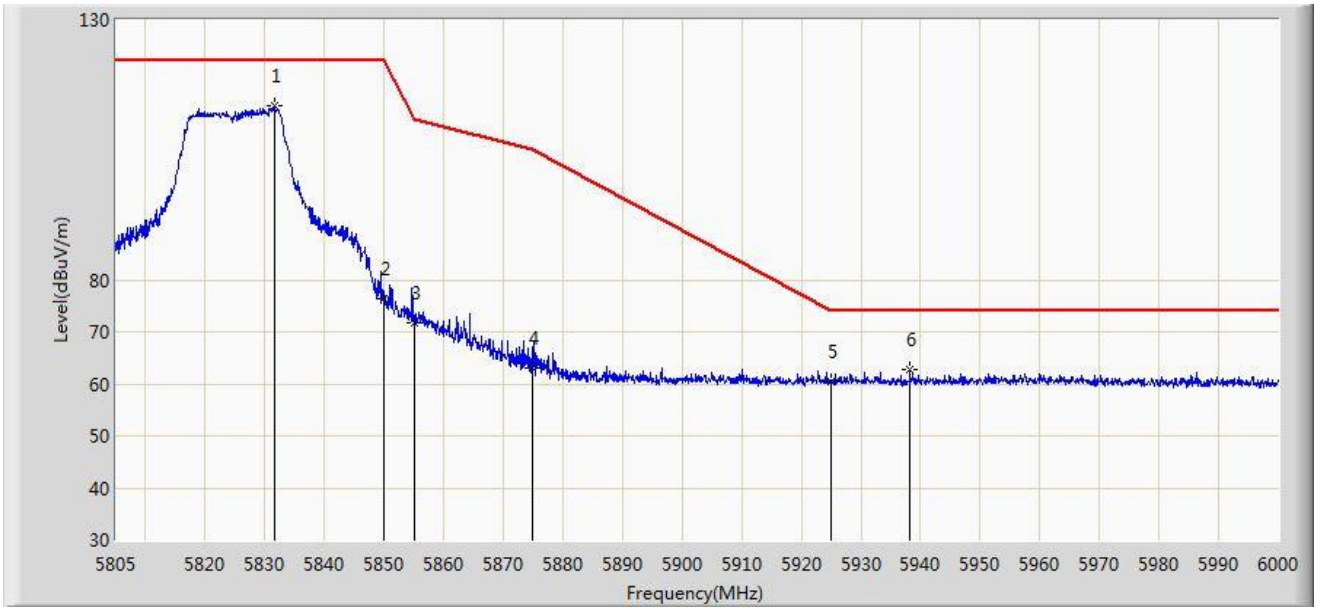


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5824.695	103.155	98.422	N/A	N/A	4.733	PK
2		5850.000	66.214	61.219	-55.986	122.200	4.995	PK
3		5855.000	63.238	58.250	-47.562	110.800	4.987	PK
4		5875.000	60.349	55.342	-44.851	105.200	5.008	PK
5		5925.000	59.409	54.257	-14.591	74.000	5.152	PK
6	*	5950.958	61.685	56.455	-12.315	74.000	5.230	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 20:43
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11a at Channel 5825MHz Ant 0	

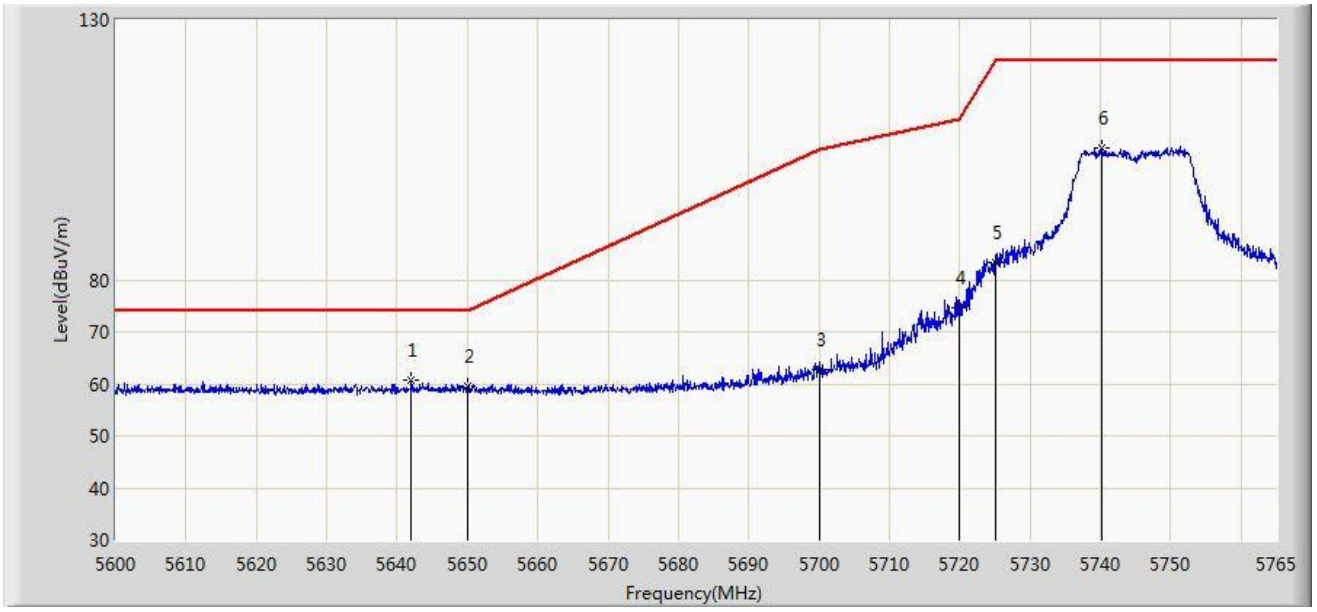


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5831.520	113.436	108.589	N/A	N/A	4.847	PK
2		5850.000	76.385	71.390	-45.815	122.200	4.995	PK
3		5855.000	71.618	66.630	-39.182	110.800	4.987	PK
4		5875.000	62.929	57.922	-42.271	105.200	5.008	PK
5		5925.000	60.498	55.346	-13.502	74.000	5.152	PK
6		5938.185	62.773	57.596	-11.227	74.000	5.176	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 21:13
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11a at Channel 5745MHz Ant 1	

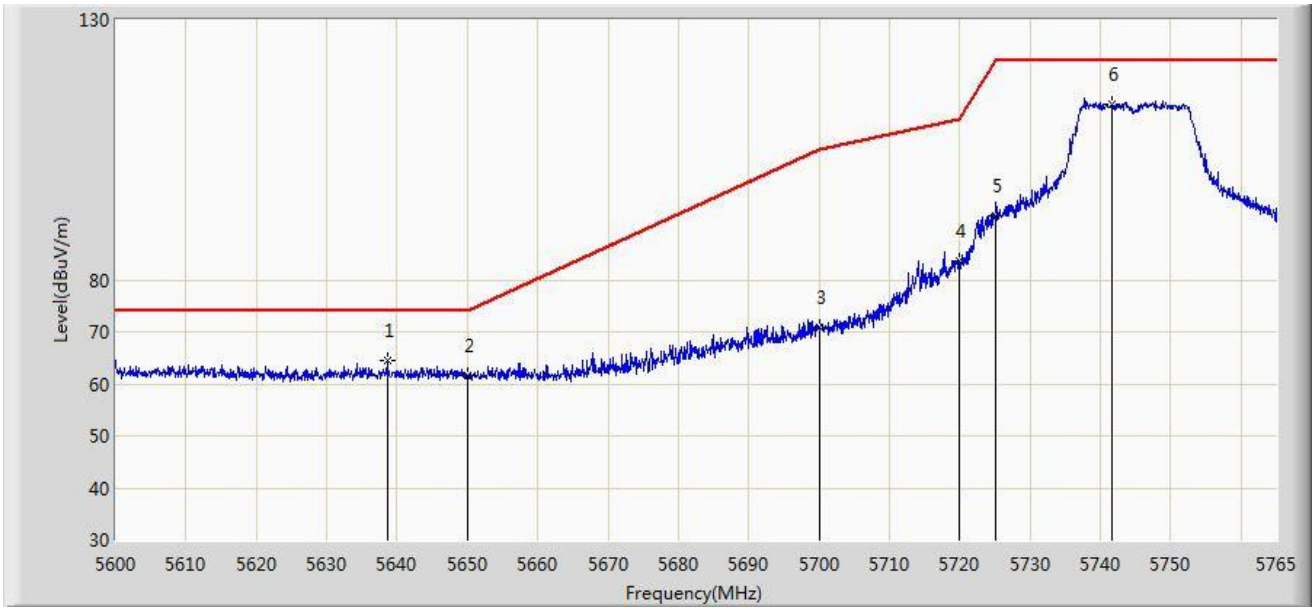


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5642.075	60.623	56.756	-13.377	74.000	3.867	PK
2		5650.000	59.558	55.755	-14.442	74.000	3.803	PK
3		5700.000	62.879	58.939	-42.321	105.200	3.940	PK
4		5720.000	74.562	70.580	-36.238	110.800	3.982	PK
5		5725.000	83.268	79.162	-38.932	122.200	4.105	PK
6		5740.250	105.446	101.169	N/A	N/A	4.278	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 21:17
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11a at Channel 5745MHz Ant 1	

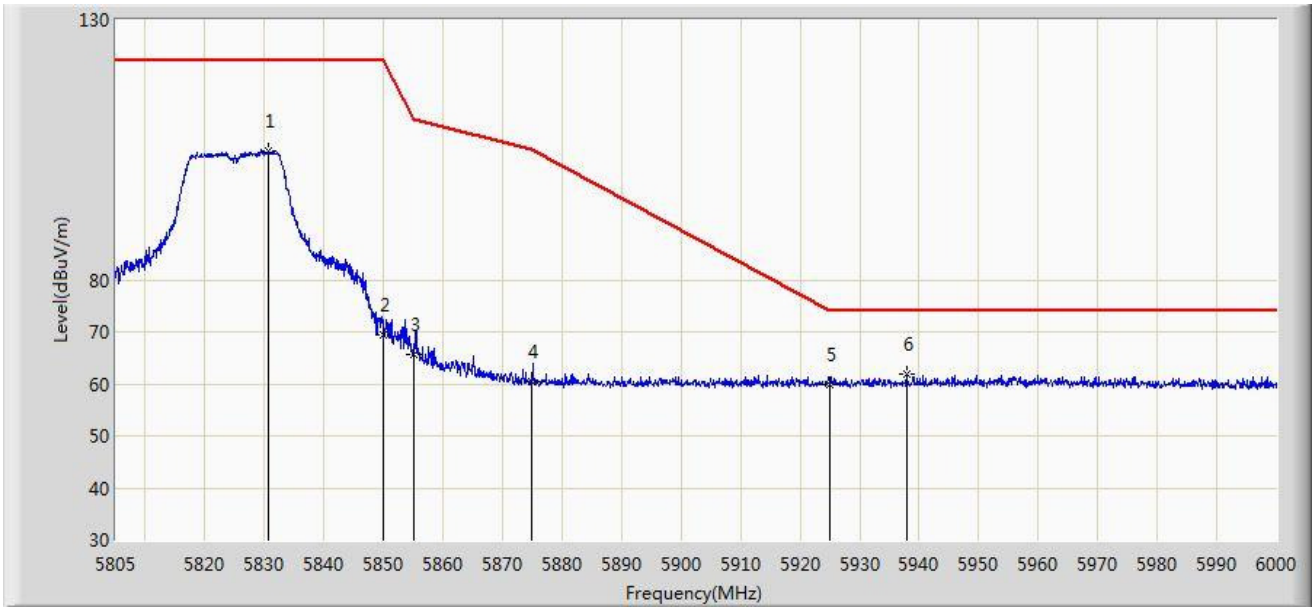


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5638.610	64.589	60.792	-9.411	74.000	3.797	PK
2		5650.000	61.708	57.905	-12.292	74.000	3.803	PK
3		5700.000	70.923	66.983	-34.277	105.200	3.940	PK
4		5720.000	83.565	79.583	-27.235	110.800	3.982	PK
5		5725.000	92.408	88.302	-29.792	122.200	4.105	PK
6	*	5741.570	113.733	109.459	N/A	N/A	4.274	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 21:19
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11a at Channel 5825MHz Ant 1	

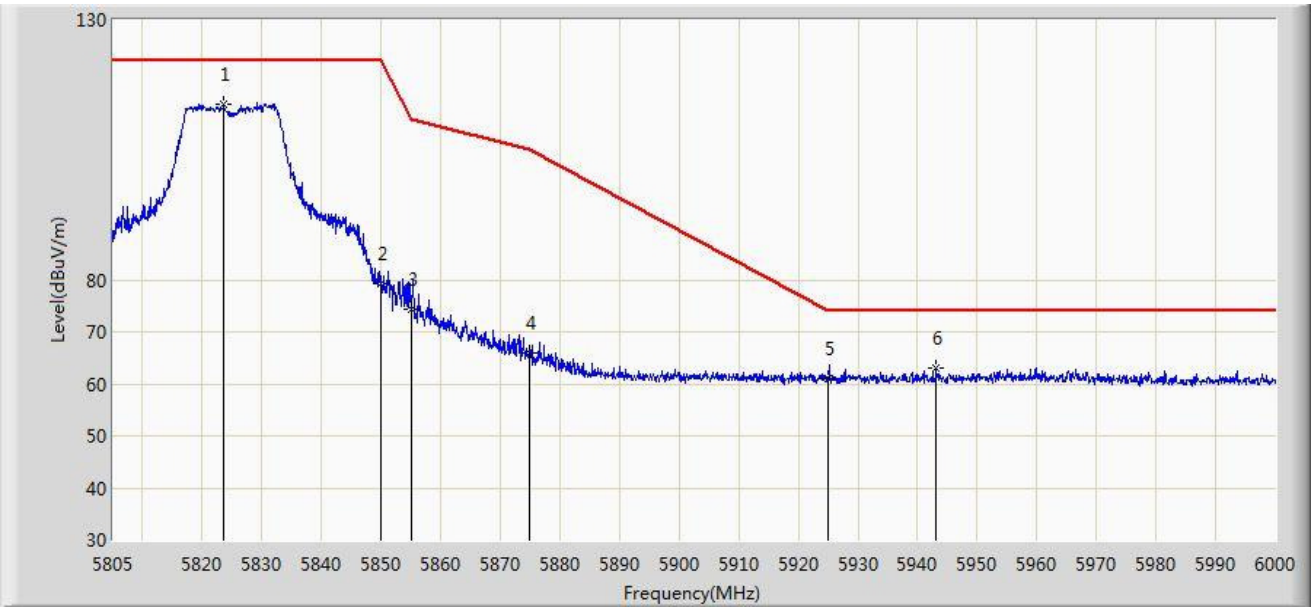


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5830.643	104.801	99.970	N/A	N/A	4.831	PK
2		5850.000	69.330	64.335	-52.870	122.200	4.995	PK
3		5855.000	65.730	60.742	-45.070	110.800	4.987	PK
4		5875.000	60.376	55.369	-44.824	105.200	5.008	PK
5		5925.000	59.923	54.771	-14.077	74.000	5.152	PK
6	*	5937.893	61.893	56.716	-12.107	74.000	5.177	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 21:20
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11a at Channel 5825MHz Ant 1	

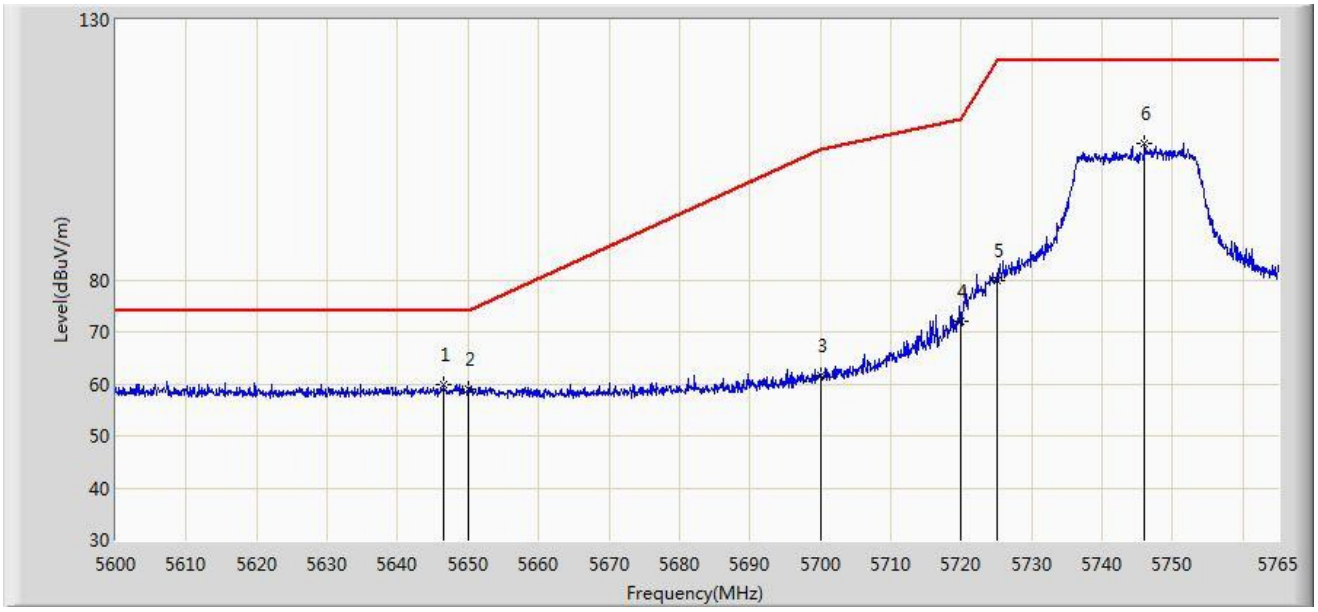


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5823.623	113.752	109.035	N/A	N/A	4.717	PK
2		5850.000	79.384	74.389	-42.816	122.200	4.995	PK
3		5855.000	74.468	69.480	-36.332	110.800	4.987	PK
4		5875.000	65.975	60.968	-39.225	105.200	5.008	PK
5		5925.000	60.985	55.833	-13.015	74.000	5.152	PK
6		5943.060	62.919	57.751	-11.081	74.000	5.167	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 21:44
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11n-HT20 at Channel 5745MHz Ant 0 + 1	

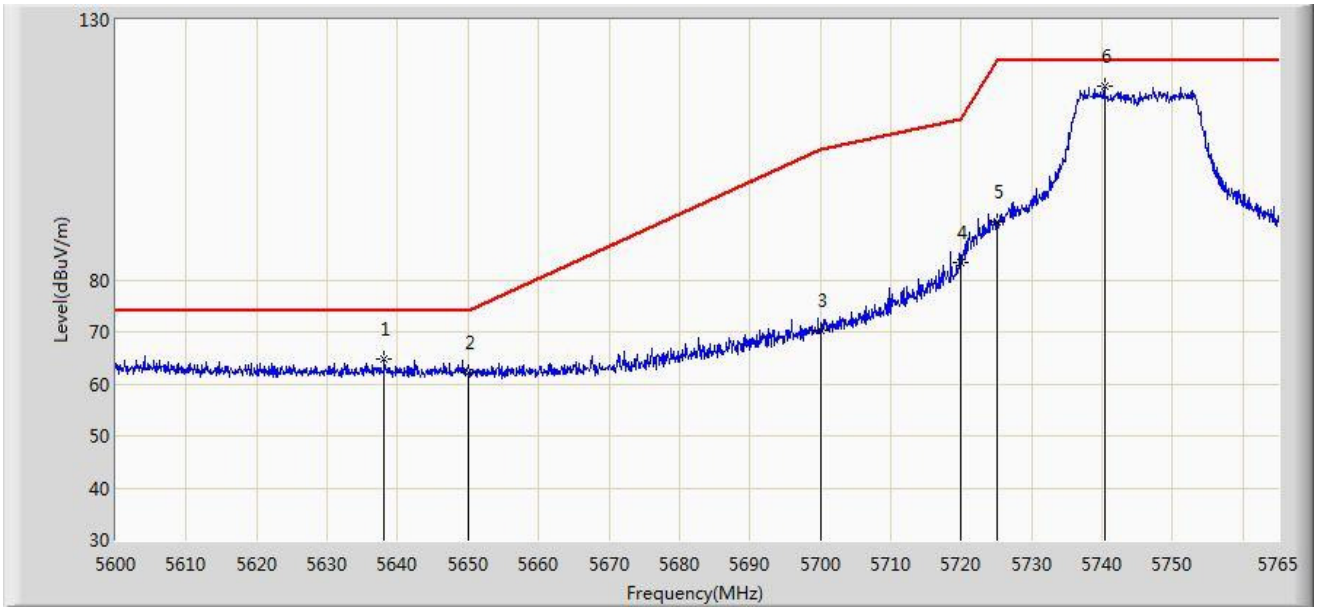


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5646.612	59.897	56.016	-14.103	74.000	3.881	PK
2		5650.000	58.947	55.144	-15.053	74.000	3.803	PK
3		5700.000	61.720	57.780	-43.480	105.200	3.940	PK
4		5720.000	71.912	67.930	-38.888	110.800	3.982	PK
5		5725.000	79.983	75.877	-42.217	122.200	4.105	PK
6		5746.025	106.142	101.873	N/A	N/A	4.269	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 21:45
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11n-HT20 at Channel 5745MHz Ant 0 + 1	

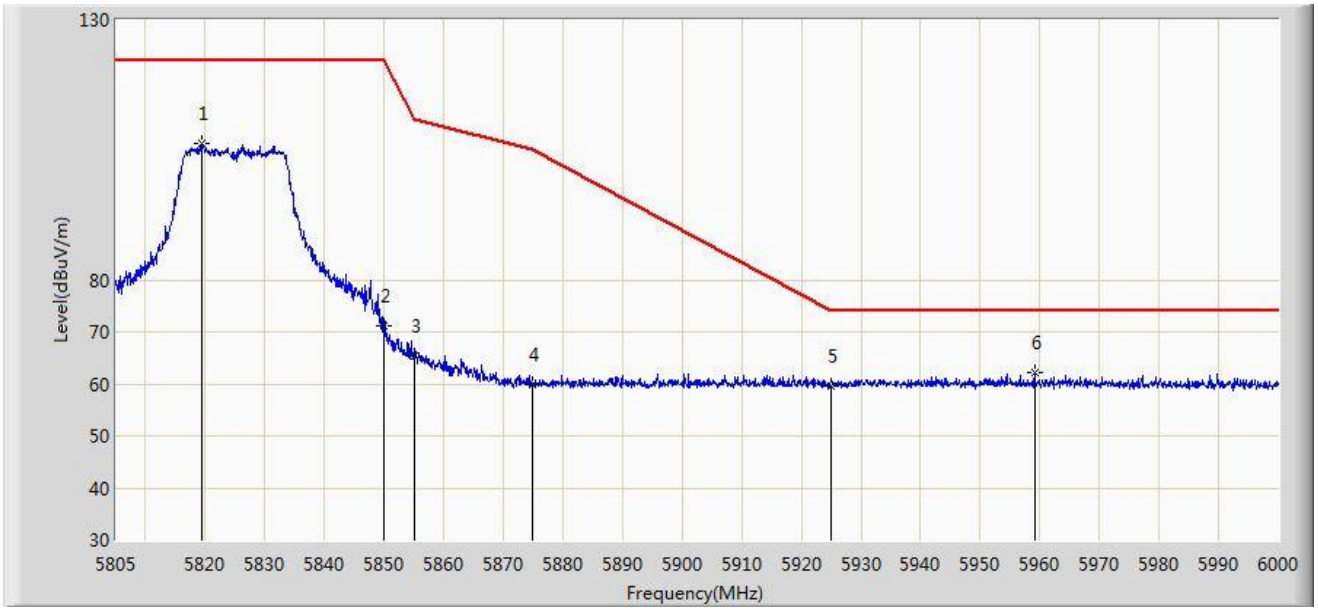


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5638.115	64.844	61.058	-9.156	74.000	3.786	PK
2		5650.000	62.267	58.464	-11.733	74.000	3.803	PK
3		5700.000	70.147	66.207	-35.053	105.200	3.940	PK
4		5720.000	83.425	79.443	-27.375	110.800	3.982	PK
5		5725.000	91.020	86.914	-31.180	122.200	4.105	PK
6	*	5740.333	117.245	112.968	N/A	N/A	4.277	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 21:46
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11n-HT20 at Channel 5825MHz Ant 0 + 1	

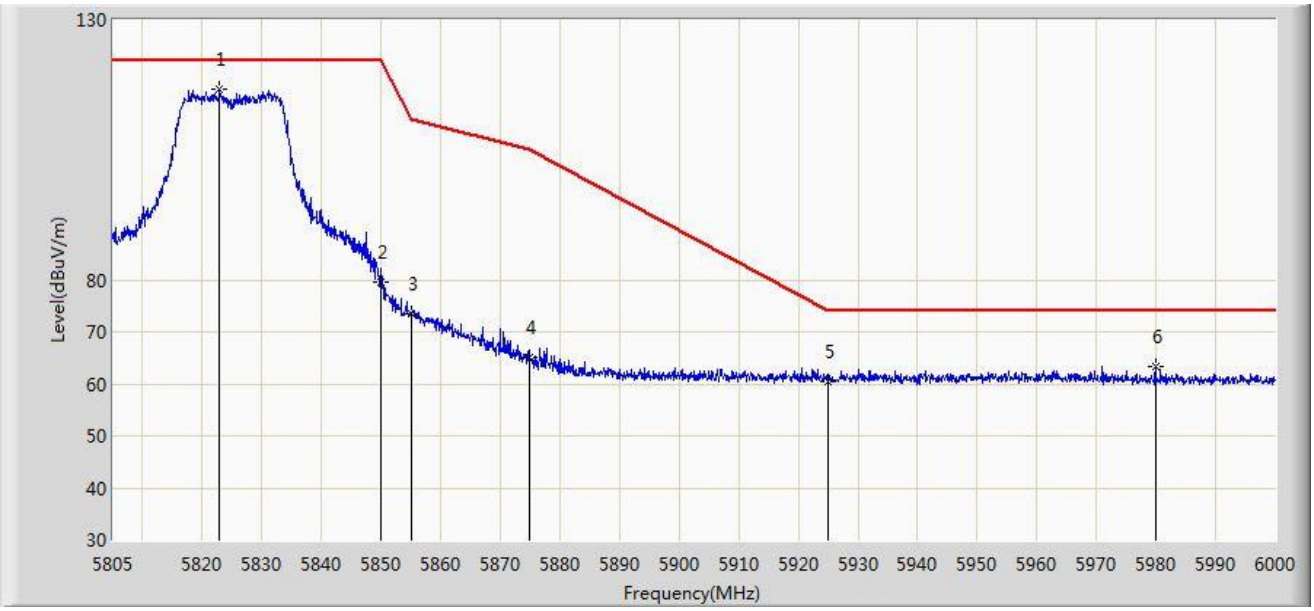


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5819.333	106.339	101.677	N/A	N/A	4.663	PK
2		5850.000	71.102	66.107	-51.098	122.200	4.995	PK
3		5855.000	65.312	60.324	-45.488	110.800	4.987	PK
4		5875.000	59.833	54.826	-45.367	105.200	5.008	PK
5		5925.000	59.472	54.320	-14.528	74.000	5.152	PK
6	*	5959.147	62.224	56.863	-11.776	74.000	5.361	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 21:48
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11n-HT20 at Channel 5825MHz Ant 0 + 1	

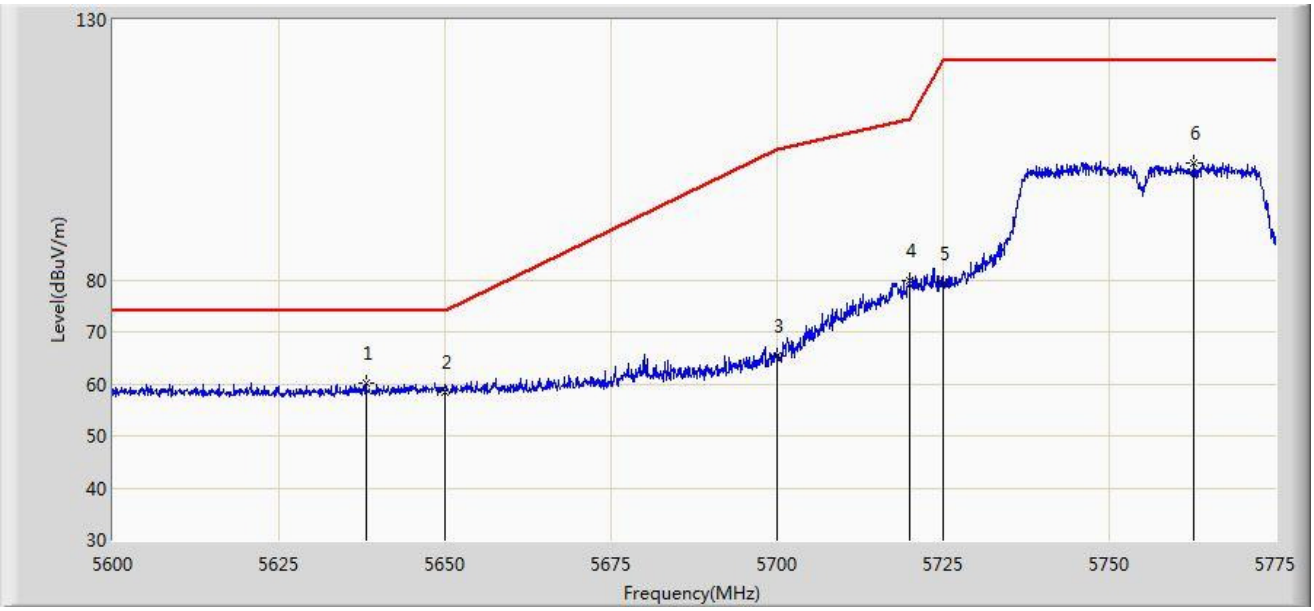


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5822.940	116.705	111.998	N/A	N/A	4.708	PK
2		5850.000	79.455	74.460	-42.745	122.200	4.995	PK
3		5855.000	73.399	68.411	-37.401	110.800	4.987	PK
4		5875.000	65.058	60.051	-40.142	105.200	5.008	PK
5		5925.000	60.525	55.373	-13.475	74.000	5.152	PK
6		5979.915	63.421	58.270	-10.579	74.000	5.152	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 21:49
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11n-HT40 at Channel 5755MHz Ant 0 + 1	

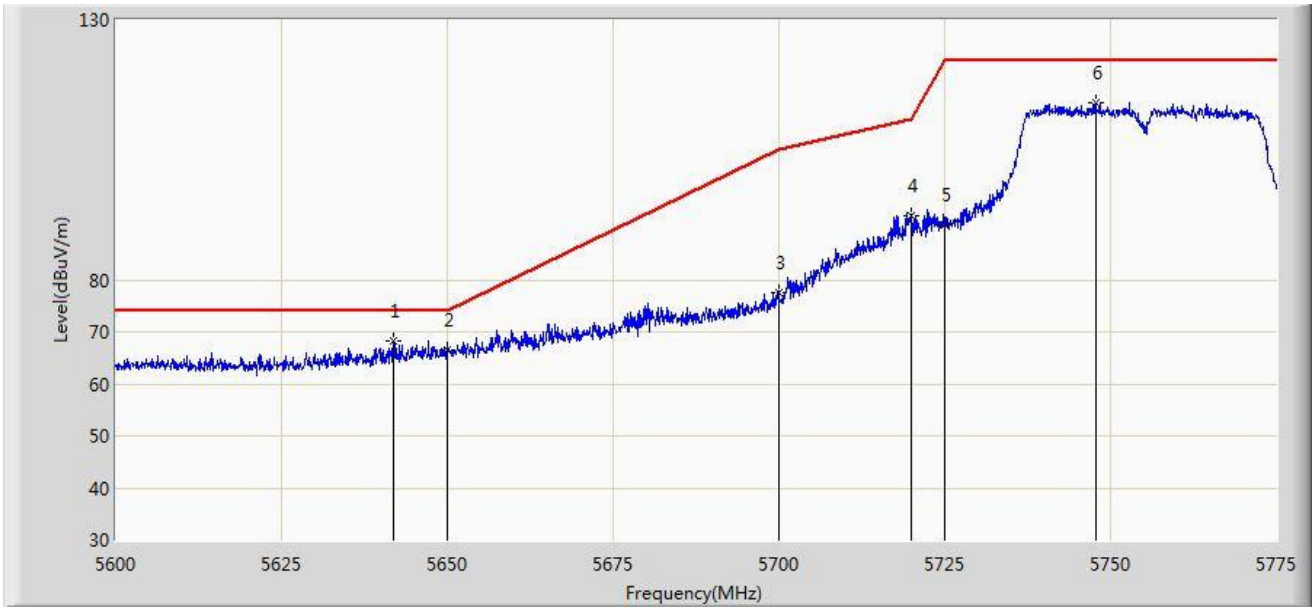


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5638.062	60.246	56.461	-13.754	74.000	3.785	PK
2		5650.000	58.470	54.667	-15.530	74.000	3.803	PK
3		5700.000	65.492	61.552	-39.708	105.200	3.940	PK
4		5720.000	79.980	75.998	-30.820	110.800	3.982	PK
5		5725.000	79.418	75.312	-42.782	122.200	4.105	PK
6		5762.663	102.593	98.150	N/A	N/A	4.443	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 21:51
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11n-HT40 at Channel 5755MHz Ant 0 + 1	

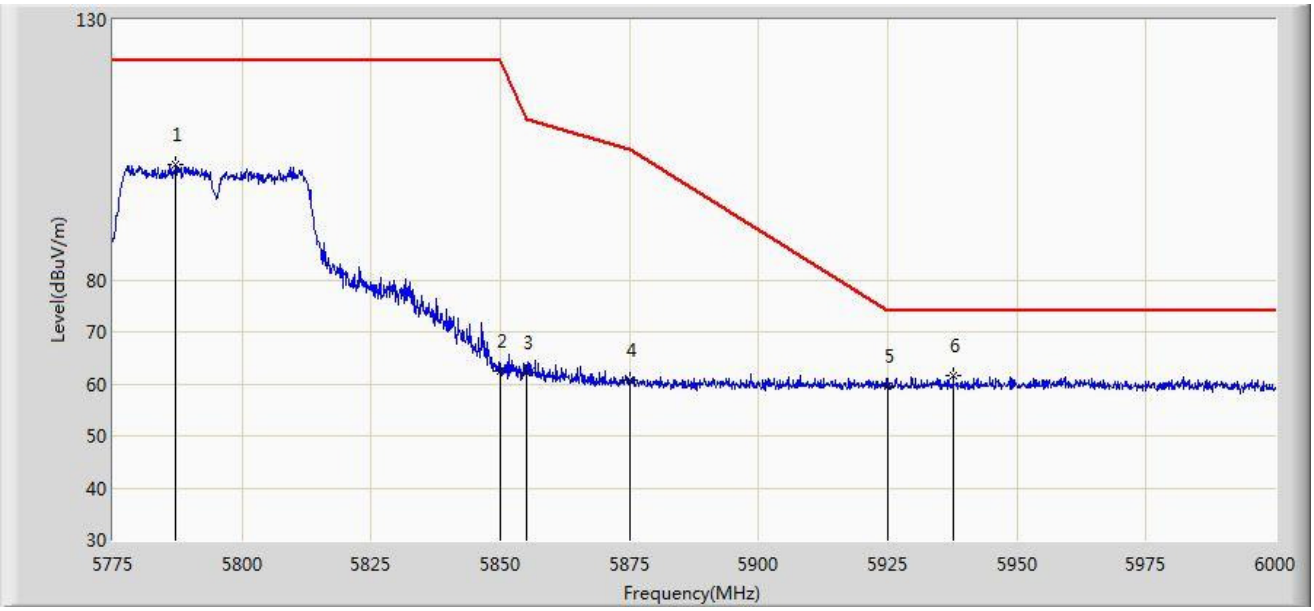


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5641.825	68.168	64.306	-5.832	74.000	3.863	PK
2		5650.000	66.646	62.843	-7.354	74.000	3.803	PK
3		5700.000	77.493	73.553	-27.707	105.200	3.940	PK
4		5720.000	92.200	88.218	-18.600	110.800	3.982	PK
5		5725.000	90.533	86.427	-31.667	122.200	4.105	PK
6		5747.700	114.006	109.739	N/A	N/A	4.267	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 21:52
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11n-HT40 at Channel 5795MHz Ant 0 + 1	

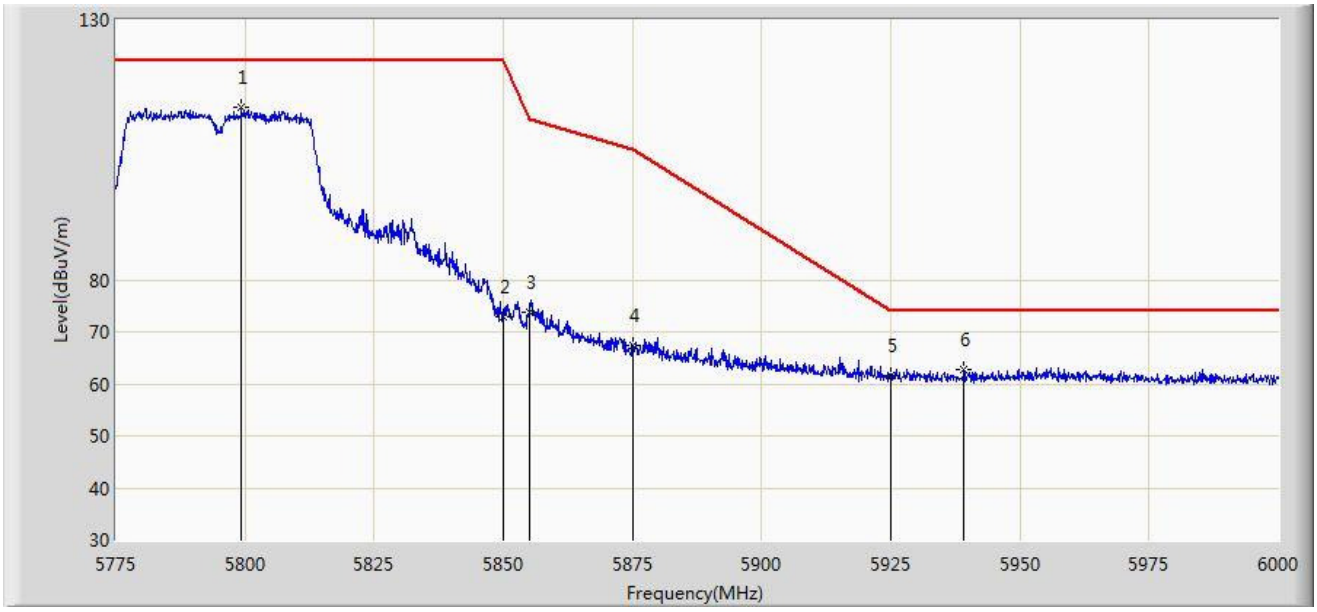


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5787.150	102.307	97.806	N/A	N/A	4.500	PK
2		5850.000	62.526	57.531	-59.674	122.200	4.995	PK
3		5855.000	62.115	57.127	-48.685	110.800	4.987	PK
4		5875.000	60.619	55.612	-44.581	105.200	5.008	PK
5		5925.000	59.659	54.507	-14.341	74.000	5.152	PK
6	*	5937.675	61.651	56.473	-12.349	74.000	5.178	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 21:53
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11n-HT40 at Channel 5795MHz Ant 0 + 1	



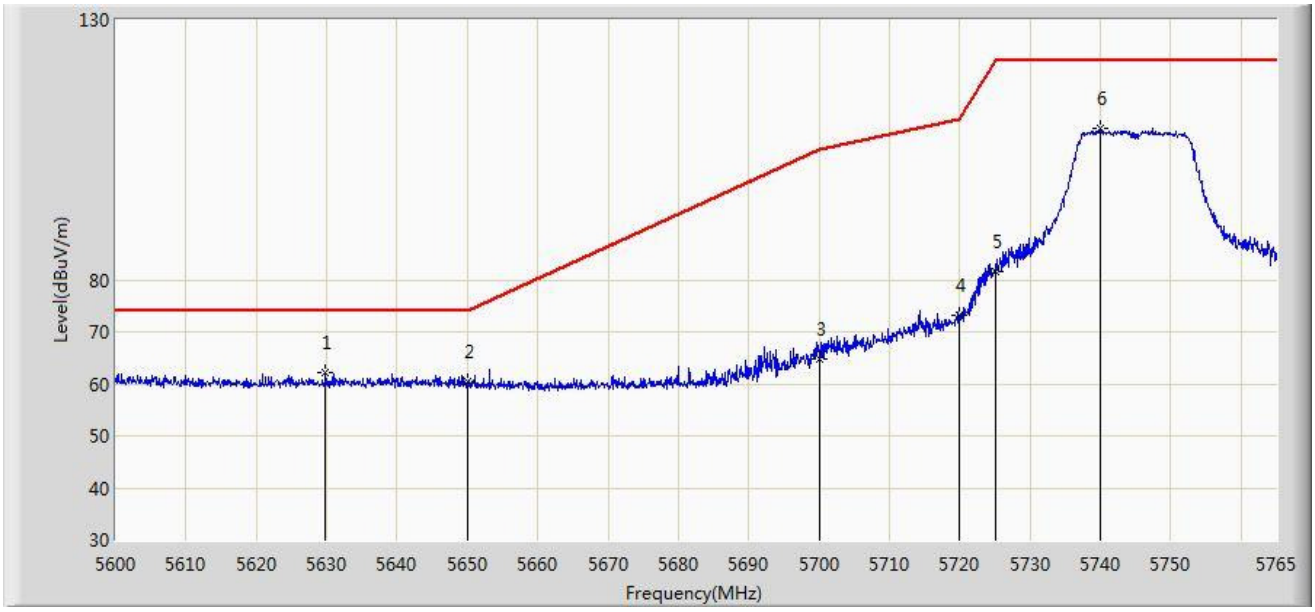
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5799.300	113.179	108.539	N/A	N/A	4.641	PK
2		5850.000	73.029	68.034	-49.171	122.200	4.995	PK
3		5855.000	73.778	68.790	-37.022	110.800	4.987	PK
4		5875.000	67.378	62.371	-37.822	105.200	5.008	PK
5		5925.000	61.663	56.511	-12.337	74.000	5.152	PK
6		5939.138	62.863	57.688	-11.137	74.000	5.174	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

For PCB Antenna

Site: AC2	Time: 2016/08/19 - 21:57
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11a at Channel 5745MHz Ant 0	

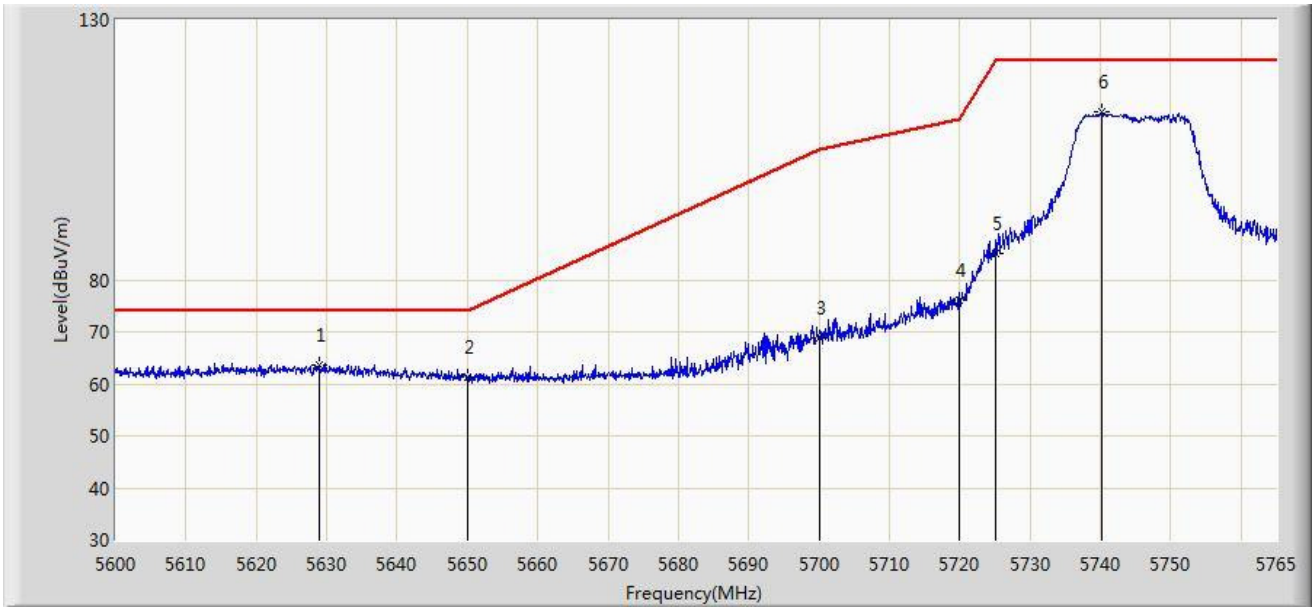


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5629.783	62.183	58.575	-11.817	74.000	3.609	PK
2		5650.000	60.419	56.616	-13.581	74.000	3.803	PK
3		5700.000	64.904	60.964	-40.296	105.200	3.940	PK
4		5720.000	73.213	69.231	-37.587	110.800	3.982	PK
5		5725.000	81.488	77.382	-40.712	122.200	4.105	PK
6		5740.002	109.084	104.806	N/A	N/A	4.278	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 22:00
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11a at Channel 5745MHz Ant 0	

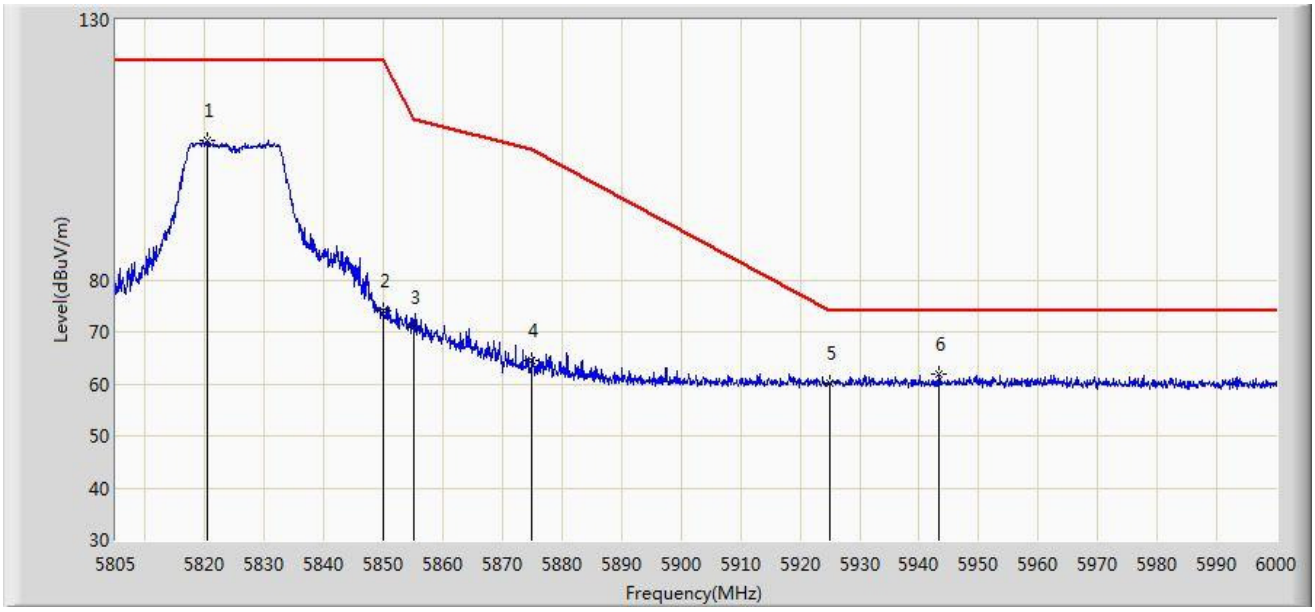


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5628.875	63.747	60.158	-10.253	74.000	3.589	PK
2		5650.000	61.168	57.365	-12.832	74.000	3.803	PK
3		5700.000	68.889	64.949	-36.311	105.200	3.940	PK
4		5720.000	75.954	71.972	-34.846	110.800	3.982	PK
5		5725.000	85.091	80.985	-37.109	122.200	4.105	PK
6	*	5740.250	112.260	107.983	N/A	N/A	4.278	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 22:02
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11a at Channel 5825MHz Ant 0	

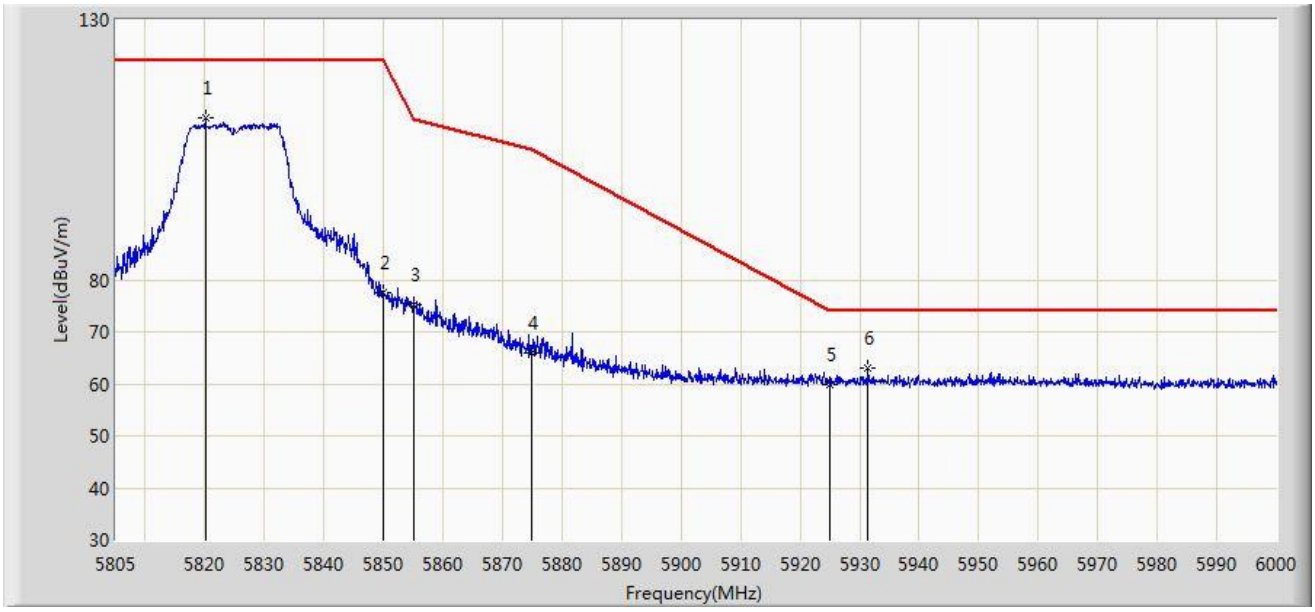


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5820.308	106.812	102.144	-15.388	122.200	4.668	PK
2		5850.000	74.033	69.038	-48.167	122.200	4.995	PK
3		5855.000	70.830	65.842	-39.970	110.800	4.987	PK
4		5875.000	64.607	59.600	-40.593	105.200	5.008	PK
5		5925.000	60.139	54.987	-13.861	74.000	5.152	PK
6	*	5943.353	61.920	56.752	N/A	N/A	5.168	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 22:05
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11a at Channel 5825MHz Ant 0	

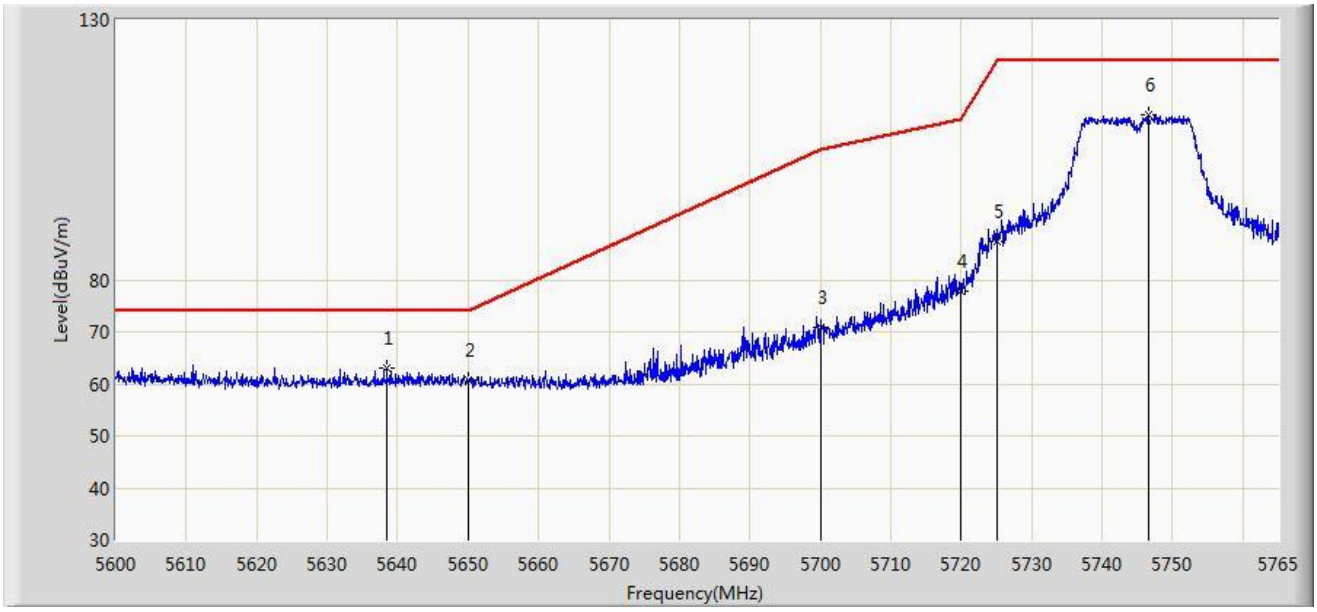


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5820.112	111.056	106.391	N/A	N/A	4.664	PK
2		5850.000	77.435	72.440	-44.765	122.200	4.995	PK
3		5855.000	75.213	70.225	-35.587	110.800	4.987	PK
4		5875.000	65.945	60.938	-39.255	105.200	5.008	PK
5		5925.000	59.785	54.633	-14.215	74.000	5.152	PK
6	*	5931.360	63.111	57.918	-10.889	74.000	5.193	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 22:22
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11a at Channel 5745MHz Ant 1	

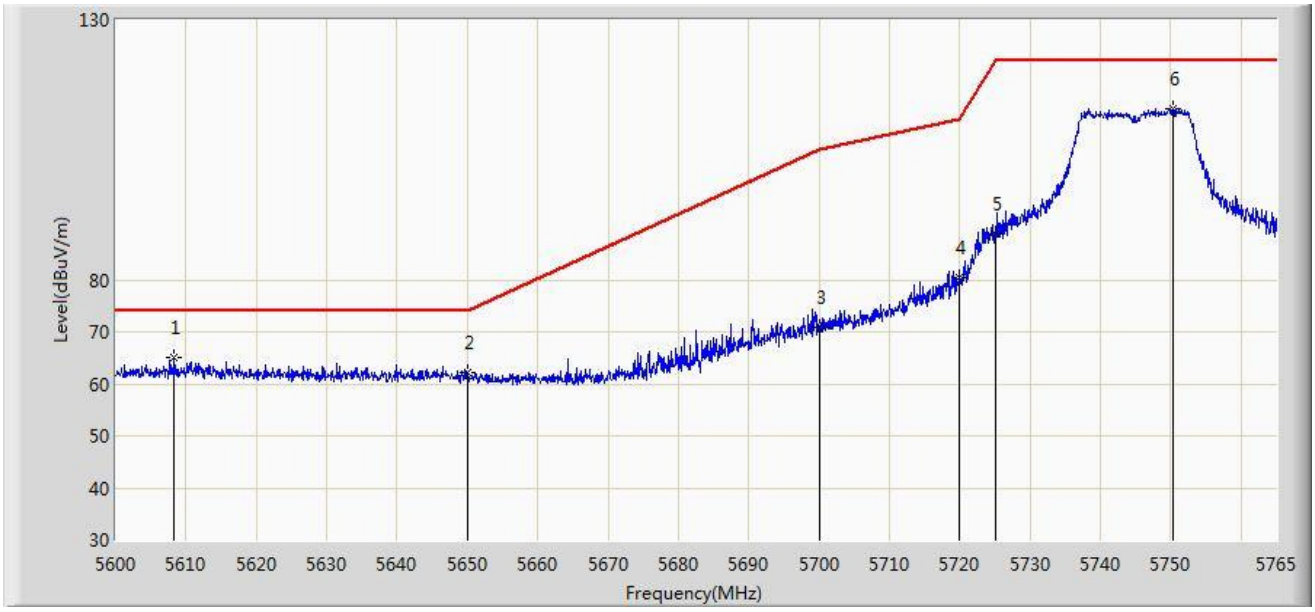


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5638.445	63.002	59.209	-10.998	74.000	3.793	PK
2		5650.000	60.754	56.951	-13.246	74.000	3.803	PK
3		5700.000	70.823	66.883	-34.377	105.200	3.940	PK
4		5720.000	77.966	73.984	-32.834	110.800	3.982	PK
5		5725.000	87.436	83.330	-34.764	122.200	4.105	PK
6	*	5746.520	111.745	107.477	N/A	N/A	4.268	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 22:24
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11a at Channel 5745MHz Ant 1	

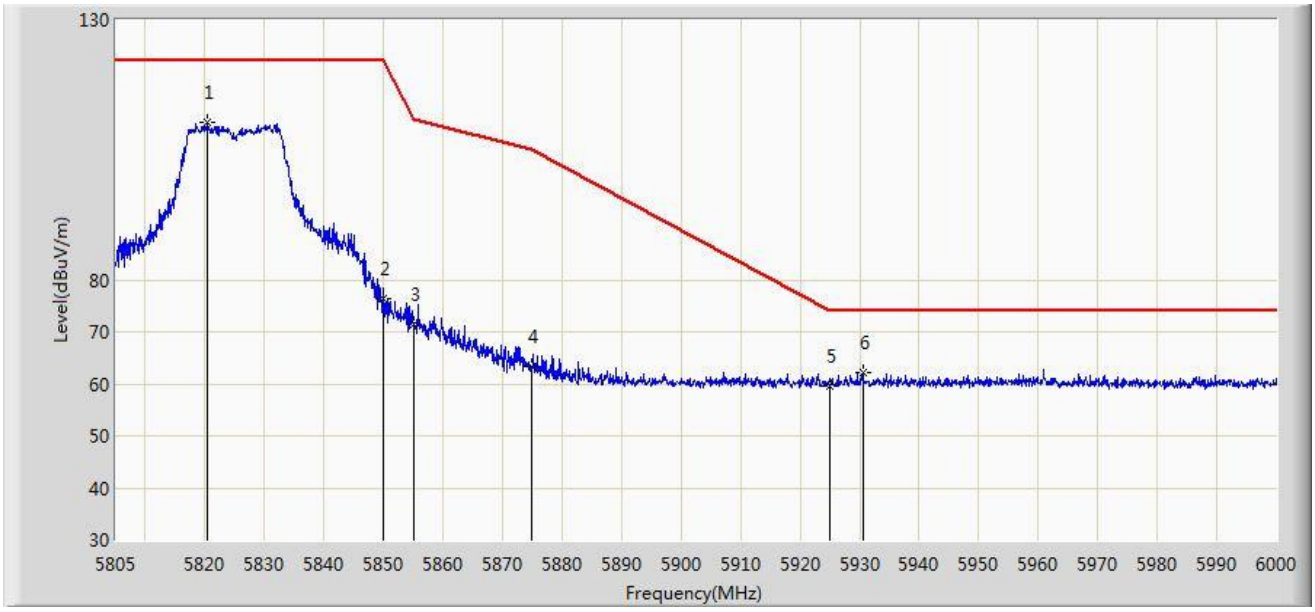


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5608.333	64.989	61.265	-9.011	74.000	3.725	PK
2		5650.000	62.058	58.255	-11.942	74.000	3.803	PK
3		5700.000	70.730	66.790	-34.470	105.200	3.940	PK
4		5720.000	80.334	76.352	-30.466	110.800	3.982	PK
5		5725.000	88.860	84.754	-33.340	122.200	4.105	PK
6		5750.232	112.823	108.553	N/A	N/A	4.270	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 22:25
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11a at Channel 5825MHz Ant 1	

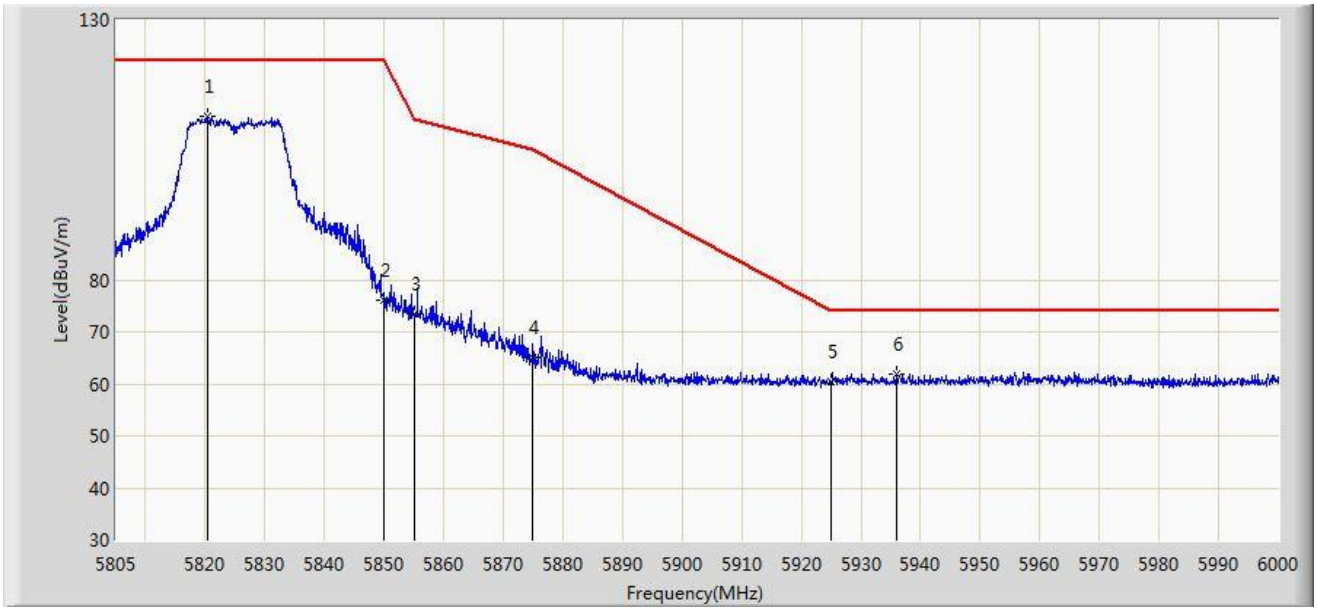


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5820.502	110.214	105.543	N/A	N/A	4.671	PK
2		5850.000	76.320	71.325	-45.880	122.200	4.995	PK
3		5855.000	71.411	66.423	-39.389	110.800	4.987	PK
4		5875.000	63.211	58.204	-41.989	105.200	5.008	PK
5		5925.000	59.598	54.446	-14.402	74.000	5.152	PK
6	*	5930.482	62.085	56.890	-11.915	74.000	5.195	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 22:26
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11a at Channel 5825MHz Ant 1	

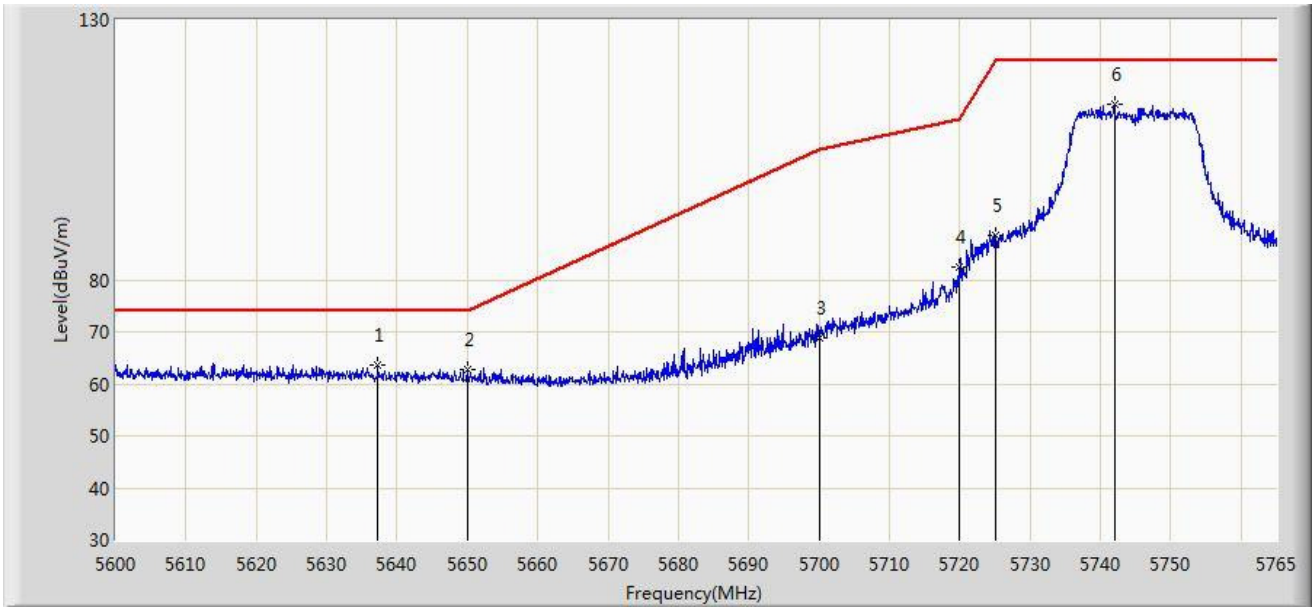


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5820.502	111.423	106.752	N/A	N/A	4.671	PK
2		5850.000	76.189	71.194	-46.011	122.200	4.995	PK
3		5855.000	73.436	68.448	-37.364	110.800	4.987	PK
4		5875.000	65.205	60.198	-39.995	105.200	5.008	PK
5		5925.000	60.343	55.191	-13.657	74.000	5.152	PK
6		5935.942	61.917	56.735	-12.083	74.000	5.183	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 22:44
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11n-HT20 at Channel 5745MHz Ant 0 + 1	

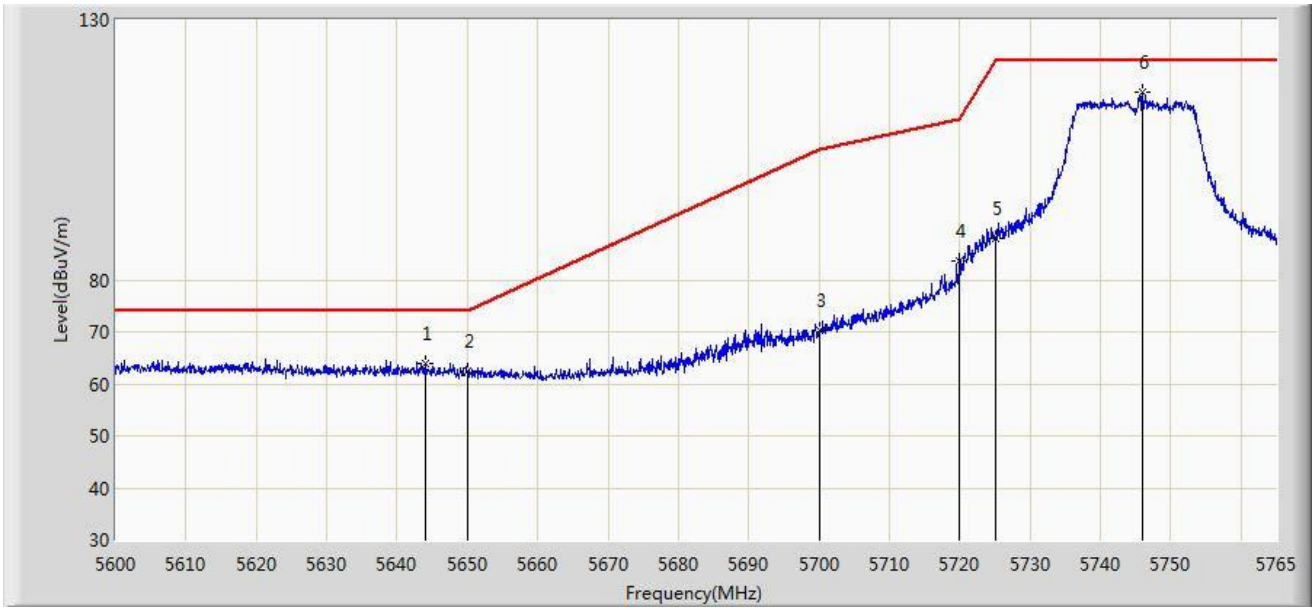


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5637.290	63.491	59.722	-10.509	74.000	3.768	PK
2		5650.000	62.819	59.016	-11.181	74.000	3.803	PK
3		5700.000	68.956	65.016	-36.244	105.200	3.940	PK
4		5720.000	82.353	78.371	-28.447	110.800	3.982	PK
5		5725.000	88.617	84.511	-33.583	122.200	4.105	PK
6	*	5741.982	113.627	109.354	N/A	N/A	4.274	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 22:44
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11n-HT20 at Channel 5745MHz Ant 0 + 1	

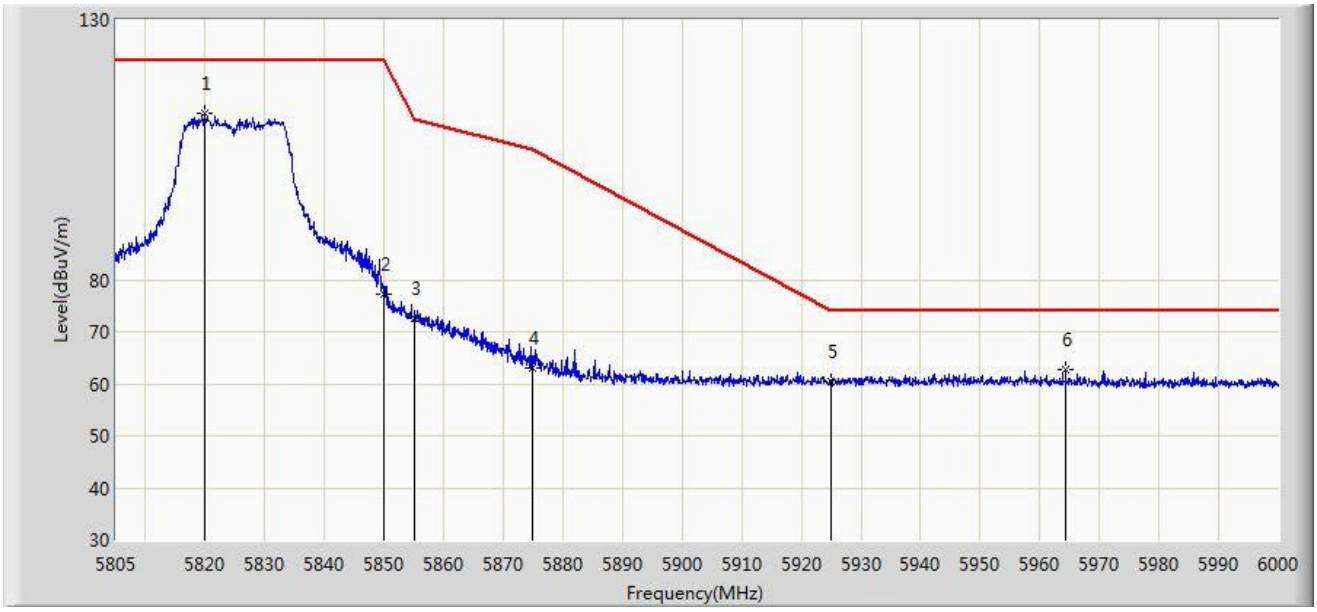


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5644.138	64.051	60.148	-9.949	74.000	3.902	PK
2		5650.000	62.400	58.597	-11.600	74.000	3.803	PK
3		5700.000	70.199	66.259	-35.001	105.200	3.940	PK
4		5720.000	83.637	79.655	-27.163	110.800	3.982	PK
5		5725.000	88.088	83.982	-34.112	122.200	4.105	PK
6	*	5746.025	116.019	111.750	N/A	N/A	4.269	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 22:45
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11n-HT20 at Channel 5825MHz Ant 0 + 1	

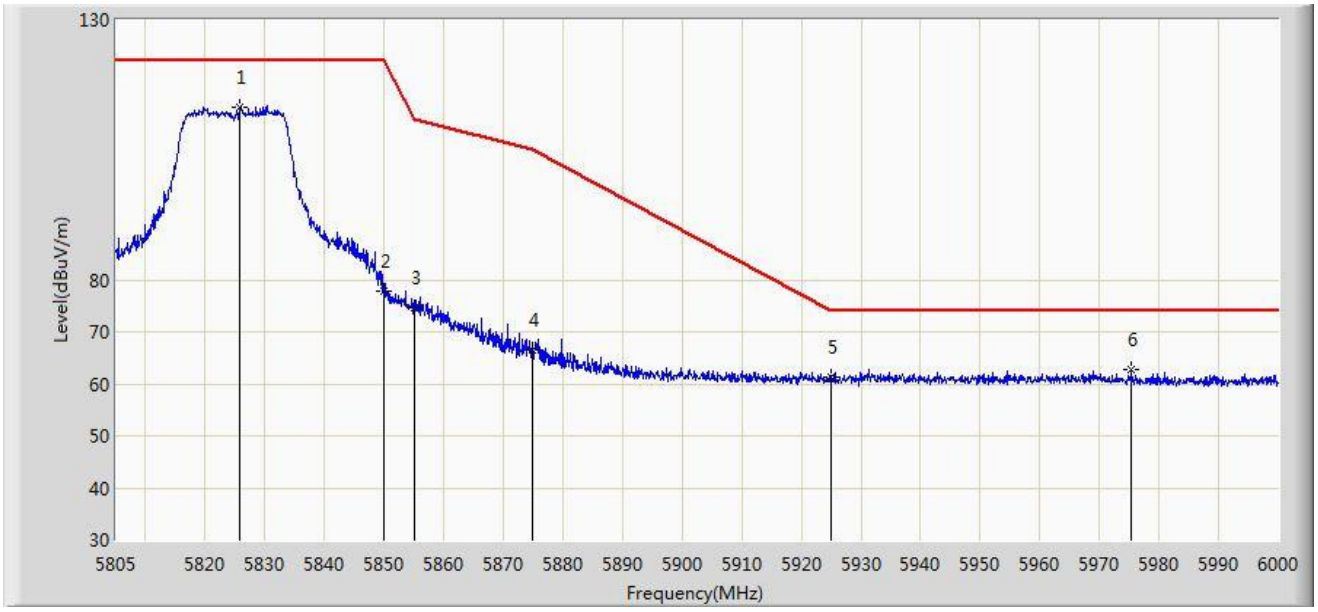


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5820.015	111.977	107.314	N/A	N/A	4.663	PK
2		5850.000	77.323	72.328	-44.877	122.200	4.995	PK
3		5855.000	72.584	67.596	-38.216	110.800	4.987	PK
4		5875.000	63.183	58.176	-42.017	105.200	5.008	PK
5		5925.000	60.376	55.224	-13.624	74.000	5.152	PK
6		5964.315	62.822	57.497	-11.178	74.000	5.325	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 22:46
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11n-HT20 at Channel 5825MHz Ant 0 + 1	

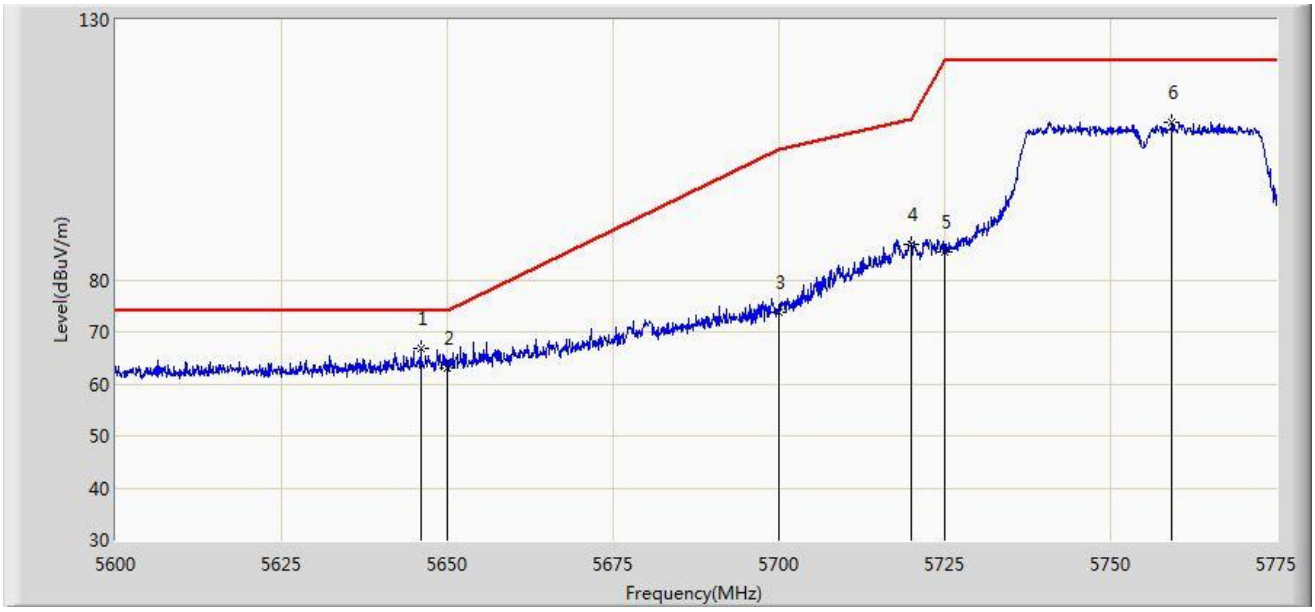


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5825.670	113.143	108.395	N/A	N/A	4.748	PK
2		5850.000	77.842	72.847	-44.358	122.200	4.995	PK
3		5855.000	74.550	69.562	-36.250	110.800	4.987	PK
4		5875.000	66.475	61.468	-38.725	105.200	5.008	PK
5		5925.000	61.200	56.048	-12.800	74.000	5.152	PK
6		5975.430	62.764	57.616	-11.236	74.000	5.148	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 22:48
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11n-HT40 at Channel 5755MHz Ant 0 + 1	

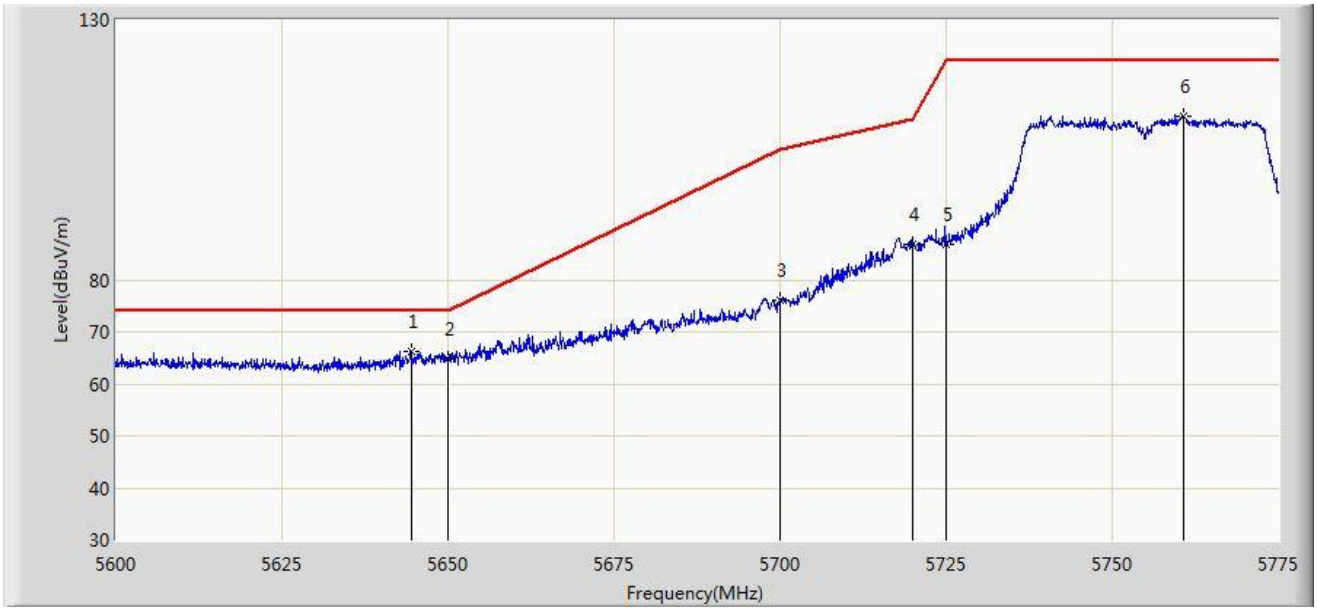


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5646.025	66.675	62.781	-7.325	74.000	3.894	PK
2		5650.000	63.145	59.342	-10.855	74.000	3.803	PK
3		5700.000	73.904	69.964	-31.296	105.200	3.940	PK
4		5720.000	86.954	82.972	-23.846	110.800	3.982	PK
5		5725.000	85.386	81.280	-36.814	122.200	4.105	PK
6		5759.250	110.266	105.840	N/A	N/A	4.426	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 22:49
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11n-HT40 at Channel 5755MHz Ant 0 + 1	

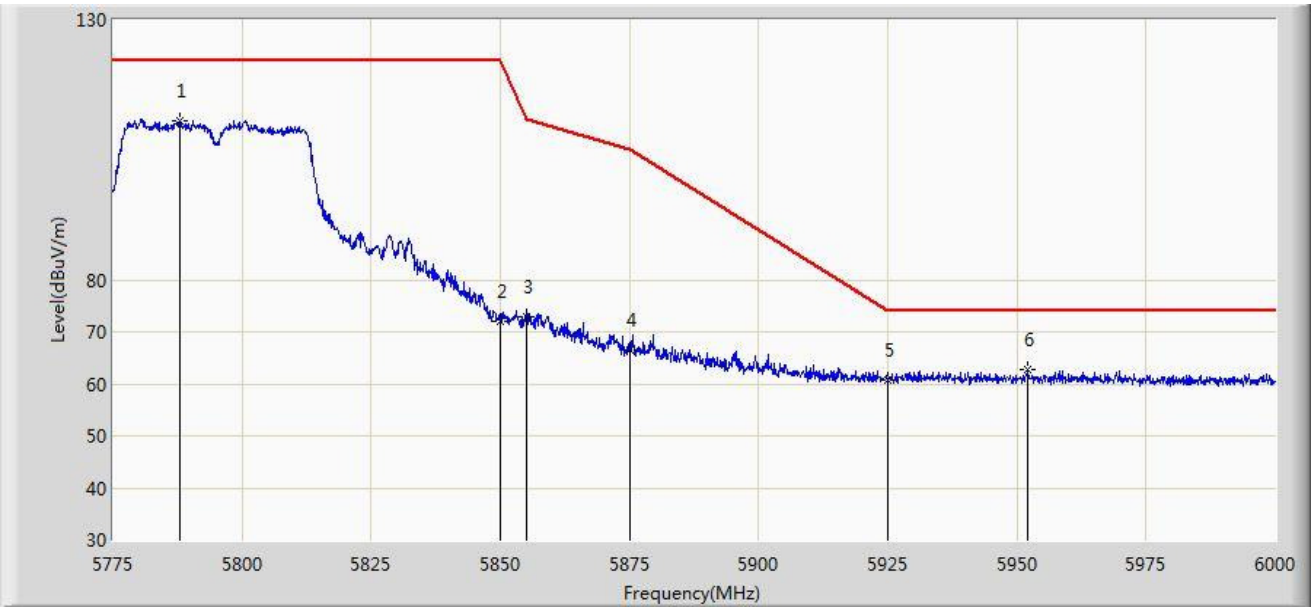


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5644.625	66.281	62.370	-7.719	74.000	3.911	PK
2		5650.000	64.803	61.000	-9.197	74.000	3.803	PK
3		5700.000	75.978	72.038	-29.222	105.200	3.940	PK
4		5720.000	86.903	82.921	-23.897	110.800	3.982	PK
5		5725.000	86.856	82.750	-35.344	122.200	4.105	PK
6		5760.737	111.421	106.981	N/A	N/A	4.440	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 22:50
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11n-HT40 at Channel 5795MHz Ant 0 + 1	

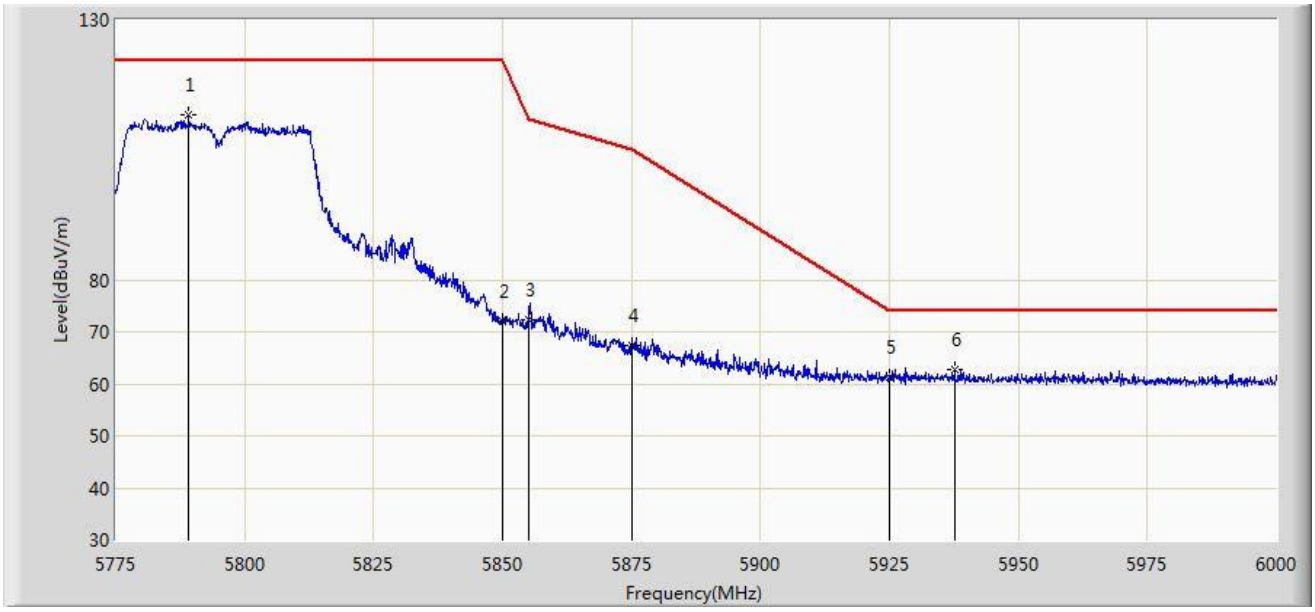


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5788.050	110.453	105.940	N/A	N/A	4.514	PK
2		5850.000	72.016	67.021	-50.184	122.200	4.995	PK
3		5855.000	73.014	68.026	-37.786	110.800	4.987	PK
4		5875.000	66.643	61.636	-38.557	105.200	5.008	PK
5		5925.000	60.861	55.709	-13.139	74.000	5.152	PK
6	*	5952.187	62.680	57.430	-11.320	74.000	5.250	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC2	Time: 2016/08/19 - 22:51
Limit: FCC_Part15.407_RE(3m)	Engineer: Lewis Huang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Test Mode: Transmit by 802.11n-HT40 at Channel 5795MHz Ant 0 + 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5789.175	111.613	107.084	N/A	N/A	4.530	PK
2		5850.000	72.140	67.145	-50.060	122.200	4.995	PK
3		5855.000	72.426	67.438	-38.374	110.800	4.987	PK
4		5875.000	67.356	62.349	-37.844	105.200	5.008	PK
5		5925.000	61.239	56.087	-12.761	74.000	5.152	PK
6		5937.562	62.852	57.674	-11.148	74.000	5.179	PK

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

7.9. AC Conducted Emissions Measurement

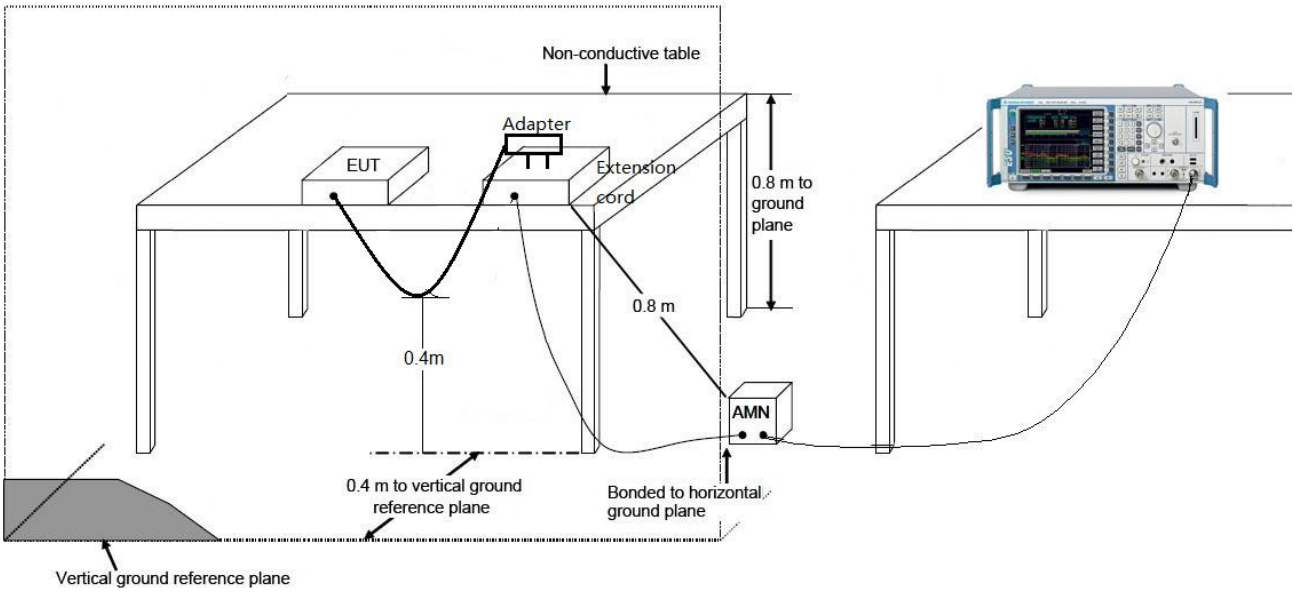
7.9.1. Test Limit

FCC Part 15.207 & RSS-Gen Issue 4 Section 8.8 Limits		
Frequency (MHz)	QP (dBμV)	AV (dBμV)
0.15 - 0.50	66 - 56	56 – 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

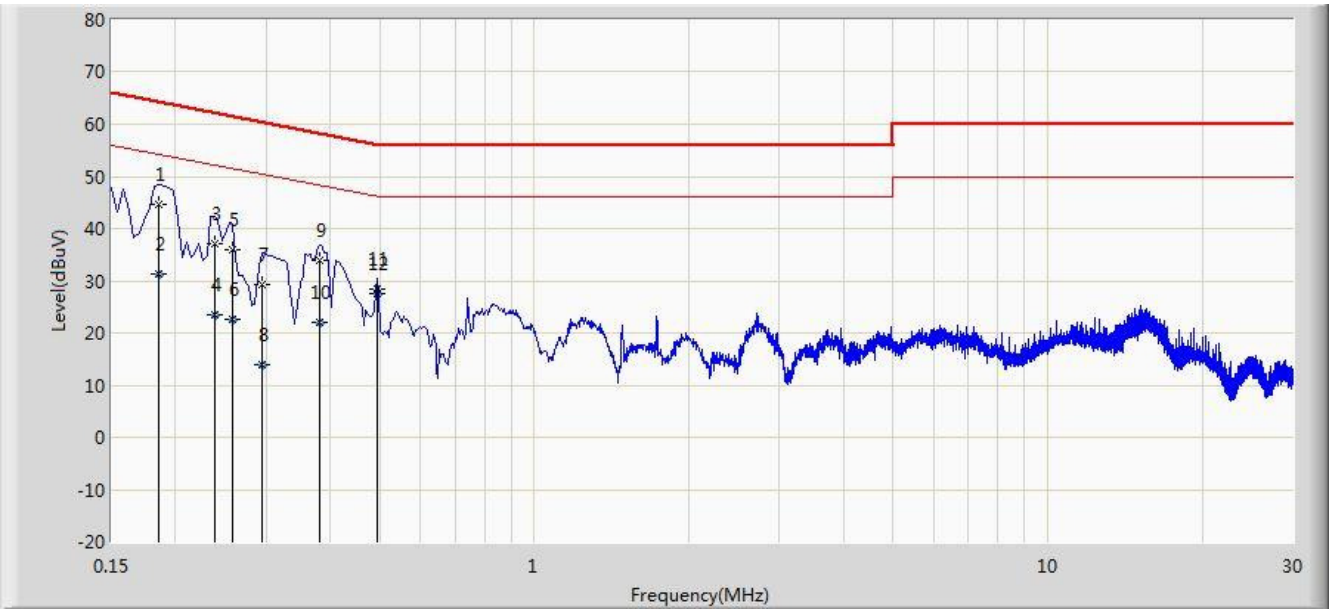
Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

7.9.2. Test Setup



7.9.3. Test Result

Site: SR2	Time: 2016/08/29 - 19:12
Limit: FCC_Part15.207_CE_AC Power	Engineer: Lewis Huang
Probe: ENV216_101683_Filter On	Polarity: Line
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Mode 3	

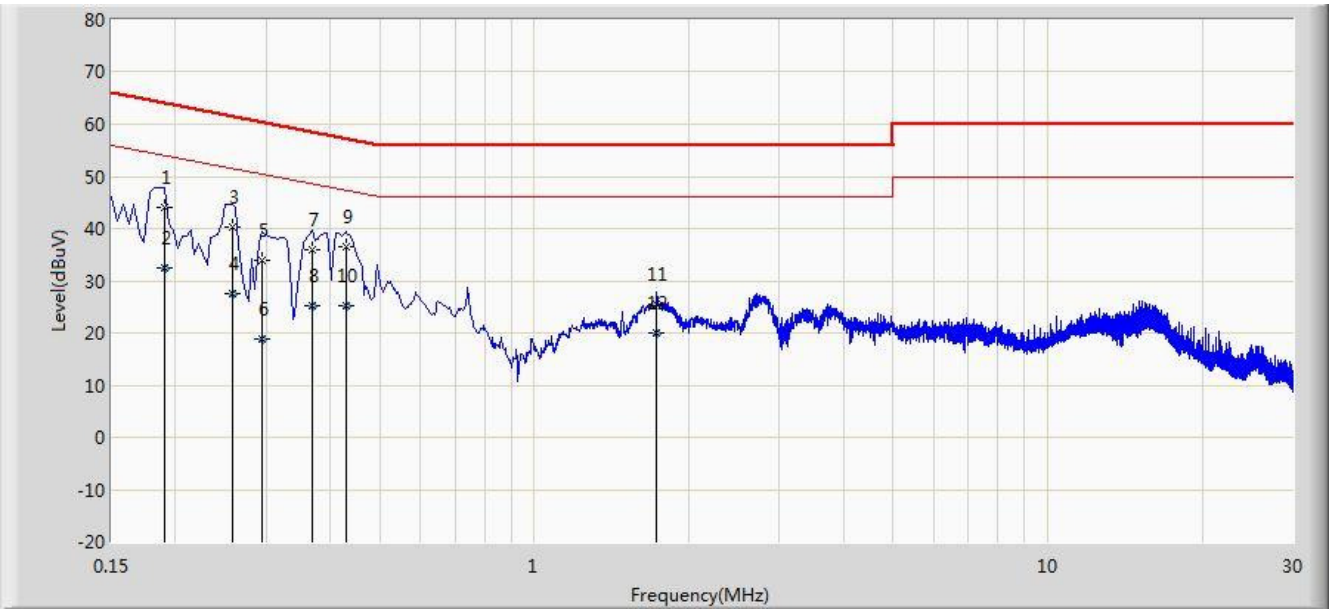


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.186	44.497	34.459	-19.716	64.213	10.039	QP
2			0.186	31.381	21.343	-22.832	54.213	10.039	AV
3			0.238	37.220	27.266	-24.946	62.166	9.954	QP
4			0.238	23.533	13.579	-28.632	52.166	9.954	AV
5			0.258	35.973	26.003	-25.522	61.496	9.970	QP
6			0.258	22.539	12.569	-28.956	51.496	9.970	AV
7			0.294	29.152	19.153	-31.259	60.411	9.999	QP
8			0.294	13.886	3.887	-36.524	50.411	9.999	AV
9			0.382	34.016	23.946	-24.219	58.236	10.071	QP
10			0.382	21.978	11.908	-26.258	48.236	10.071	AV
11			0.494	28.547	18.389	-27.554	56.100	10.158	QP
12		*	0.494	27.483	17.325	-18.617	46.100	10.158	AV

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

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

Site: SR2	Time: 2016/08/29 - 19:16
Limit: FCC_Part15.207_CE_AC Power	Engineer: Lewis Huang
Probe: ENV216_101683_Filter On	Polarity: Neutral
EUT: WIRELESS-N NETWORK MINI PCI ADAPTER	Power: AC 120V/60Hz
Note: Mode 3	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		*	0.190	44.124	34.097	-19.912	64.037	10.028	QP
2			0.190	32.354	22.326	-21.683	54.037	10.028	AV
3			0.258	40.180	30.173	-21.315	61.496	10.007	QP
4			0.258	27.646	17.639	-23.849	51.496	10.007	AV
5			0.294	34.013	23.980	-26.397	60.411	10.033	QP
6			0.294	18.842	8.808	-31.569	50.411	10.033	AV
7			0.370	35.932	25.842	-22.569	58.501	10.090	QP
8			0.370	25.081	14.991	-23.419	48.501	10.090	AV
9			0.430	36.596	26.461	-20.657	57.253	10.135	QP
10			0.430	25.299	15.163	-21.954	47.253	10.135	AV
11			1.730	25.482	15.600	-30.518	56.000	9.882	QP
12			1.730	19.889	10.007	-26.111	46.000	9.882	AV

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

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

8. CONCLUSION

The data collected relate only the item(s) tested and show that the **WIRELESS-N NETWORK MINI PCI ADAPTER FCC ID: TK4WLM200NX** is in compliance with Part 15E of the FCC Rules.

The End