









































7.7. Frequency Stability Measurement

7.7.1.TestLimit

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.

The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5GHz band (IEEE 802.11 specification).

7.7.2.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.



7.7.3.Test Setup





7.7.4.Test Result

Test Engineer	Kevin Ker	Temperature	-30 ~ 50°C
Test Time	2018/06/27	Relative Humidity	48 ~ 55%RH
Test Mode	5180MHz (Carrier Mode)	Test Site	SR2

Voltage	Power	Temp	Frequency Tolerance
(%)	(VAC)	(°C)	(ppm)
		- 30	-3.45
		- 20	-3.65
		- 10	-3.81
		0	-4.02
100%	120	+ 10	-4.19
		+ 20 (Ref)	-4.81
		+ 30	-4.92
		+ 40	-4.97
		+ 50	-5.07
115%	138	+ 20	-4.67
85%	102	+ 20	-4.92

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



7.8. Radiated Spurious Emission Measurement

7.8.1.Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title

47CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209						
FrequencyField StrengthMeasured Distance						
[MHz]	[uV/m]	[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 Procedure Used

ANSI C63.10 Section 6.3 (General Requirements)

ANSI C63.10 Section 6.4 (Standard test method below 30MHz)

ANSI C63.10 Section 6.5 (Standard test method above 30MHz to 1GHz)

ANSI C63.10 Section 6.6 (Standard test method above 1GHz)

7.8.3.Test Setting

Table 1 - RBW as a function of frequency

Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz



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 = as specified in Table 1
- 4. Detector = CISPR quasi-peak
- 5. Sweep time = auto couple
- 6. Trace was allowed to stabilize

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

Average Measurements above 1GHz (Method VB)

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW = 1MHz
- 3. VBW; If the EUT is configured to transmit with duty cycle \ge 98%, set VBW = 10 Hz.
- If the EUT duty cycle is < 98%, set VBW \geq 1/T. T is the minimum transmission duration.
- 4. Detector = Peak
- 5. Sweep time = auto
- 6. Trace mode = max hold
- 7. Trace was allowed to stabilize



7.8.4.Test Setup

9kHz ~30MHz Test Setup:





Spectrum Analyzer

题記

1GHz ~18GHz Test Setup:



1~4 m

Antenna

(Antenna Tower)

Pre-Amplifier



EUT

(Polystyrene)

(Turntable)

1.5 m C



7.8.5.Test Result

For APIN0514 - Omni Antenna (AP-ANT-20W)

Product	ACCESS POINT	Temperature	26°C		
Test Engineer	Kevin Ker	Relative Humidity	57 %		
Test Site	AC1	Test Date	2018/06/24		
Test Mode:	802.11a - Ant 0 + 1 + 2 + 3	Test Channel:	36		
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average		
	limit. So the margin was calculate	ed using the average limi	t for emissions fall		
	within the restricted bands.				
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show				
	in the report.				

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7426.0	36.5	12.7	49.2	54.0	-4.8	Peak	Horizontal
	8148.5	37.7	12.1	49.8	54.0	-4.2	Peak	Horizontal
*	8811.5	36.0	14.0	50.0	68.2	-18.2	Peak	Horizontal
*	10163.0	36.1	16.0	52.1	68.2	-16.1	Peak	Horizontal
	7596.0	33.9	12.7	46.6	54.0	-7.4	Peak	Vertical
	8242.0	35.8	11.9	47.7	54.0	-6.3	Peak	Vertical
*	8709.5	34.1	13.8	47.9	68.2	-20.3	Peak	Vertical
*	9823.0	34.2	15.6	49.8	68.2	-18.4	Peak	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)



Product	ACCESS POINT	Temperature	26°C			
Test Engineer	Kevin Ker	Relative Humidity	57 %			
Test Site	AC1	Test Date	2018/06/24			
Test Mode:	802.11a - Ant 0 + 1 + 2 + 3	Test Channel:	44			
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average			
	limit. So the margin was calculated using the average limit for emissions fall					
	within the restricted bands.					
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show					
	in the report.					

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7570.5	35.6	12.8	48.4	54.0	-5.6	Peak	Horizontal
	8148.5	38.2	12.1	50.3	54.0	-3.7	Peak	Horizontal
*	8828.5	35.3	14.0	49.3	68.2	-18.9	Peak	Horizontal
*	9814.5	35.9	15.4	51.3	68.2	-16.9	Peak	Horizontal
	7536.5	34.8	12.8	47.6	54.0	-6.4	Peak	Vertical
	8344.0	35.9	12.0	47.9	54.0	-6.1	Peak	Vertical
*	8845.5	33.7	14.0	47.7	68.2	-20.5	Peak	Vertical
*	9814.5	34.2	15.4	49.6	68.2	-18.6	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C			
Test Engineer	Kevin Ker	Relative Humidity	57 %			
Test Site	AC1	Test Date	2018/06/24			
Test Mode:	802.11a - Ant 0 + 1 + 2 + 3	Test Channel:	48			
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average			
	limit. So the margin was calculated using the average limit for emissions fall					
	within the restricted bands.					
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show					
	in the report.					

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7502.5	34.3	12.8	47.1	54.0	-6.9	Peak	Horizontal
	8293.0	35.1	11.9	47.0	54.0	-7.0	Peak	Horizontal
*	8692.5	33.6	13.7	47.3	68.2	-20.9	Peak	Horizontal
*	9857.0	33.2	16.2	49.4	68.2	-18.8	Peak	Horizontal
	7494.0	36.0	12.8	48.8	54.0	-5.2	Peak	Vertical
	8310.0	36.3	11.9	48.2	54.0	-5.8	Peak	Vertical
*	8692.5	33.1	13.7	46.8	68.2	-21.4	Peak	Vertical
*	9721.0	34.1	14.7	48.8	68.2	-19.4	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C			
Test Engineer	Kevin Ker	Relative Humidity	57 %			
Test Site	AC1	Test Date	2018/06/24			
Test Mode:	802.11a - Ant 0 + 1 + 2 + 3	Test Channel:	149			
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average			
	limit. So the margin was calculated using the average limit for emissions fall					
	within the restricted bands.					
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show					
	in the report.					

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7536.5	35.0	12.8	47.8	54.0	-6.2	Peak	Horizontal
	8199.5	36.3	12.0	48.3	54.0	-5.7	Peak	Horizontal
*	8794.5	33.9	13.9	47.8	68.2	-20.4	Peak	Horizontal
*	9814.5	33.8	15.4	49.2	68.2	-19.0	Peak	Horizontal
	7434.5	34.8	12.7	47.5	54.0	-6.5	Peak	Vertical
	8199.5	35.7	12.0	47.7	54.0	-6.3	Peak	Vertical
*	8658.5	33.0	13.6	46.6	68.2	-21.6	Peak	Vertical
*	9636.0	34.6	14.4	49.0	68.2	-19.2	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C					
Test Engineer	Kevin Ker	Relative Humidity	57 %					
Test Site	AC1	Test Date	2018/06/24					
Test Mode:	802.11a - Ant 0 + 1 + 2 + 3	Test Channel:	157					
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average					
	limit. So the margin was calculate	ed using the average limi	t for emissions fall					
	within the restricted bands.	within the restricted bands.						
	2. Other frequency was 20dB below	v limit line within 1-18GH	z, there is not show					
	in the report.							

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7400.5	34.5	12.6	47.1	54.0	-6.9	Peak	Horizontal
	8310.0	34.9	11.9	46.8	54.0	-7.2	Peak	Horizontal
*	8658.5	32.9	13.6	46.5	68.2	-21.7	Peak	Horizontal
*	9772.0	33.5	14.9	48.4	68.2	-19.8	Peak	Horizontal
	7570.5	36.1	12.8	48.9	54.0	-5.1	Peak	Vertical
	8335.5	36.0	11.9	47.9	54.0	-6.1	Peak	Vertical
*	8692.5	33.1	13.7	46.8	68.2	-21.4	Peak	Vertical
*	9772.0	33.5	14.9	48.4	68.2	-19.8	Peak	Vertical
*	8692.5 9772.0	33.1 33.5	13.7 14.9	46.8 48.4	68.2 68.2	-21.4 -19.8	Peak Peak	Vertica Vertica

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C
Test Engineer	Kevin Ker	Relative Humidity	57 %
Test Site	AC1	Test Date	2018/06/24
Test Mode:	802.11a - Ant 0 + 1 + 2 + 3	Test Channel:	165
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average
	limit. So the margin was calculate	ed using the average limi	t for emissions fall
	within the restricted bands.		
	2. Other frequency was 20dB below	v limit line within 1-18GH	z, there is not show
	in the report.		

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7570.5	36.2	12.8	49.0	54.0	-5.0	Peak	Horizontal
	8276.0	35.2	11.9	47.1	54.0	-6.9	Peak	Horizontal
*	8616.0	32.2	13.5	45.7	68.2	-22.5	Peak	Horizontal
*	9678.5	33.0	14.6	47.6	68.2	-20.6	Peak	Horizontal
	7434.5	34.6	12.7	47.3	54.0	-6.7	Peak	Vertical
	8310.0	36.1	11.9	48.0	54.0	-6.0	Peak	Vertical
*	8692.5	32.9	13.7	46.6	68.2	-21.6	Peak	Vertical
*	9636.0	33.9	14.4	48.3	68.2	-19.9	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C
Test Engineer	Kevin Ker	Relative Humidity	57 %
Test Site	AC1	Test Date	2018/06/24
Test Mode:	802.11ac-VHT20 - Ant 0 + 1 + 2 + 3	Test Channel:	36
Remark:	1. Average measurement was not p	performed if peak level lo	wer than average
	limit. So the margin was calculate	ed using the average limi	t for emissions fall
	within the restricted bands.		
	2. Other frequency was 20dB below	v limit line within 1-18GH	z, there is not show
	in the report.		

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7604.5	33.6	12.7	46.3	54.0	-7.7	Peak	Horizontal
	8242.0	36.4	11.9	48.3	54.0	-5.7	Peak	Horizontal
*	8769.0	33.3	13.9	47.2	68.2	-21.0	Peak	Horizontal
*	9721.0	33.7	14.7	48.4	68.2	-19.8	Peak	Horizontal
	7366.5	33.6	12.5	46.1	54.0	-7.9	Peak	Vertical
	8199.5	35.1	12.0	47.1	54.0	-6.9	Peak	Vertical
*	8735.0	33.8	13.9	47.7	68.2	-20.5	Peak	Vertical
*	9721.0	34.0	14.7	48.7	68.2	-19.5	Peak	Vertical
Note 1	: "*" is not in r	estricted ban	d, its limit i	s -27dBm/Mł	Iz. At a distanc	e of 3 me	ters, the f	ield strength

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C
Test Engineer	Kevin Ker	Relative Humidity	57 %
Test Site	AC1	Test Date	2018/06/24
Test Mode:	802.11ac-VHT20 - Ant 0 + 1 + 2 + 3	Test Channel:	44
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average
	limit. So the margin was calculate	ed using the average limi	t for emissions fall
	within the restricted bands.		
	2. Other frequency was 20dB below	v limit line within 1-18GH	z, there is not show
	in the report.		

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7366.5	34.9	12.5	47.4	54.0	-6.6	Peak	Horizontal
	8284.5	35.8	11.9	47.7	54.0	-6.3	Peak	Horizontal
*	8658.5	33.0	13.6	46.6	68.2	-21.6	Peak	Horizontal
*	9721.0	34.0	14.7	48.7	68.2	-19.5	Peak	Horizontal
	7536.5	33.7	12.8	46.5	54.0	-7.5	Peak	Vertical
	8131.5	35.6	12.2	47.8	54.0	-6.2	Peak	Vertical
*	8658.5	32.9	13.6	46.5	68.2	-21.7	Peak	Vertical
*	9636.0	33.7	14.4	48.1	68.2	-20.1	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C
Test Engineer	Kevin Ker	Relative Humidity	57 %
Test Site	AC1	Test Date	2018/06/24
Test Mode:	802.11ac-VHT20 - Ant 0 + 1 + 2 + 3	Test Channel:	48
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average
	limit. So the margin was calculate	ed using the average limi	t for emissions fall
	within the restricted bands.		
	2. Other frequency was 20dB below	v limit line within 1-18GH	z, there is not show
	in the report.		

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7570.5	34.5	12.8	47.3	54.0	-6.7	Peak	Horizontal
	8463.0	33.4	12.6	46.0	54.0	-8.0	Peak	Horizontal
*	8769.0	32.6	13.9	46.5	68.2	-21.7	Peak	Horizontal
*	9678.5	34.4	14.6	49.0	68.2	-19.2	Peak	Horizontal
	7604.5	33.9	12.7	46.6	54.0	-7.4	Peak	Vertical
	8386.5	33.8	12.1	45.9	54.0	-8.1	Peak	Vertical
*	8769.0	33.7	13.9	47.6	68.2	-20.6	Peak	Vertical
*	9721.0	33.9	14.7	48.6	68.2	-19.6	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C
Test Engineer	Kevin Ker	Relative Humidity	57 %
Test Site	AC1	Test Date	2018/06/24
Test Mode:	802.11ac-VHT20 - Ant 0 + 1 + 2 + 3	Test Channel:	149
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average
	limit. So the margin was calculate	ed using the average limi	t for emissions fall
	within the restricted bands.		
	2. Other frequency was 20dB below	v limit line within 1-18GH	z, there is not show
	in the report.		

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7468.5	33.9	12.8	46.7	54.0	-7.3	Peak	Horizontal
	8199.5	34.4	12.0	46.4	54.0	-7.6	Peak	Horizontal
*	8735.0	31.9	13.9	45.8	68.2	-22.4	Peak	Horizontal
*	9678.5	34.1	14.6	48.7	68.2	-19.5	Peak	Horizontal
	7570.5	33.9	12.8	46.7	54.0	-7.3	Peak	Vertical
	8276.0	34.1	11.9	46.0	54.0	-8.0	Peak	Vertical
*	8854.0	33.1	14.0	47.1	68.2	-21.1	Peak	Vertical
*	9636.0	33.2	14.4	47.6	68.2	-20.6	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C				
Test Engineer	Kevin Ker	Relative Humidity	57 %				
Test Site	AC1	Test Date	2018/06/24				
Test Mode:	802.11ac-VHT20 - Ant 0 + 1 + 2 + 3	Test Channel:	157				
Remark:	1. Average measurement was not p	1. Average measurement was not performed if peak level lower than average					
	limit. So the margin was calculate	ed using the average limi	t for emissions fall				
	within the restricted bands.						
	2. Other frequency was 20dB below	v limit line within 1-18GH	z, there is not show				
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7502.5	33.8	12.8	46.6	54.0	-7.4	Peak	Horizontal
	8199.5	35.4	12.0	47.4	54.0	-6.6	Peak	Horizontal
*	8735.0	33.8	13.9	47.7	68.2	-20.5	Peak	Horizontal
*	9678.5	33.9	14.6	48.5	68.2	-19.7	Peak	Horizontal
	7536.5	34.6	12.8	47.4	54.0	-6.6	Peak	Vertical
	8174.0	34.3	12.0	46.3	54.0	-7.7	Peak	Vertical
*	8769.0	31.6	13.9	45.5	68.2	-22.7	Peak	Vertical
*	9993.0	34.1	15.4	49.5	68.2	-18.7	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C					
Test Engineer	Kevin Ker	Relative Humidity	57 %					
Test Site	AC1	Test Date	2018/06/24					
Test Mode:	802.11ac-VHT20 - Ant 0 + 1 + 2 + 3	Test Channel:	165					
Remark:	1. Average measurement was not p	1. Average measurement was not performed if peak level lower than average						
	limit. So the margin was calculate	ed using the average limi	t for emissions fall					
	within the restricted bands.							
	2. Other frequency was 20dB below	. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.							

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7536.5	33.6	12.8	46.4	54.0	-7.6	Peak	Horizontal
	8242.0	34.9	11.9	46.8	54.0	-7.2	Peak	Horizontal
*	8769.0	32.6	13.9	46.5	68.2	-21.7	Peak	Horizontal
*	10120.5	33.8	15.8	49.6	68.2	-18.6	Peak	Horizontal
	7570.5	34.0	12.8	46.8	54.0	-7.2	Peak	Vertical
	8242.0	35.3	11.9	47.2	54.0	-6.8	Peak	Vertical
*	8692.5	33.2	13.7	46.9	68.2	-21.3	Peak	Vertical
*	9678.5	33.4	14.6	48.0	68.2	-20.2	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C				
Test Engineer	Kevin Ker	Relative Humidity	57 %				
Test Site	AC1	Test Date	2018/06/24				
Test Mode:	802.11ac-VHT40 - Ant 0 + 1 + 2 + 3	Test Channel:	38				
Remark:	1. Average measurement was not p	1. Average measurement was not performed if peak level lower than average					
	limit. So the margin was calculate	ed using the average limi	t for emissions fall				
	within the restricted bands.						
	2. Other frequency was 20dB below	v limit line within 1-18GH	z, there is not show				
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7570.5	34.0	12.8	46.8	54.0	-7.2	Peak	Horizontal
	8199.5	35.0	12.0	47.0	54.0	-7.0	Peak	Horizontal
*	8616.0	33.7	13.5	47.2	68.2	-21.0	Peak	Horizontal
*	9636.0	34.2	14.4	48.6	68.2	-19.6	Peak	Horizontal
	7426.0	34.8	12.7	47.5	54.0	-6.5	Peak	Vertical
	8352.5	34.5	12.0	46.5	54.0	-7.5	Peak	Vertical
*	8692.5	32.4	13.7	46.1	68.2	-22.1	Peak	Vertical
*	10035.5	33.8	15.5	49.3	68.2	-18.9	Peak	Vertical
Note 1	: "*" is not in r	estricted ban	d, its limit i	s -27dBm/Mł	Iz. At a distanc	e of 3 me	eters, the f	ield 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 ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C				
Test Engineer	Kevin Ker	Relative Humidity	57 %				
Test Site	AC1	Test Date	2018/06/24				
Test Mode:	802.11ac-VHT40 - Ant 0 + 1 + 2 + 3	Test Channel:	46				
Remark:	1. Average measurement was not p	1. Average measurement was not performed if peak level lower than average					
	limit. So the margin was calculate	ed using the average limi	t for emissions fall				
	within the restricted bands.						
	2. Other frequency was 20dB below	v limit line within 1-18GH	z, there is not show				
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7587.5	32.8	12.7	45.5	54.0	-8.5	Peak	Horizontal
	8199.5	35.6	12.0	47.6	54.0	-6.4	Peak	Horizontal
*	8811.5	32.0	14.0	46.0	68.2	-22.2	Peak	Horizontal
*	9857.0	34.9	16.2	51.1	68.2	-17.1	Peak	Horizontal
	7366.5	35.2	12.5	47.7	54.0	-6.3	Peak	Vertical
	8352.5	33.8	12.0	45.8	54.0	-8.2	Peak	Vertical
*	8658.5	31.8	13.6	45.4	68.2	-22.8	Peak	Vertical
*	9593.5	32.6	14.4	47.0	68.2	-21.2	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C				
Test Engineer	Kevin Ker	Relative Humidity	57 %				
Test Site	AC1	Test Date	2018/06/24				
Test Mode:	802.11ac-VHT40 - Ant 0 + 1 + 2 + 3	Test Channel:	151				
Remark:	1. Average measurement was not p	1. Average measurement was not performed if peak level lower than average					
	limit. So the margin was calculate	ed using the average limi	t for emissions fall				
	within the restricted bands.						
	2. Other frequency was 20dB below	v limit line within 1-18GH	z, there is not show				
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7443.0	34.6	12.7	47.3	54.0	-6.7	Peak	Horizontal
	8242.0	36.1	11.9	48.0	54.0	-6.0	Peak	Horizontal
*	8616.0	33.5	13.5	47.0	68.2	-21.2	Peak	Horizontal
*	9636.0	33.5	14.4	47.9	68.2	-20.3	Peak	Horizontal
	7434.5	34.1	12.7	46.8	54.0	-7.2	Peak	Vertical
	8276.0	34.8	11.9	46.7	54.0	-7.3	Peak	Vertical
*	8811.5	32.7	14.0	46.7	68.2	-21.5	Peak	Vertical
*	9678.5	33.7	14.6	48.3	68.2	-19.9	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C				
Test Engineer	Kevin Ker	Relative Humidity	57 %				
Test Site	AC1	Test Date	2018/06/24				
Test Mode:	802.11ac-VHT40 - Ant 0 + 1 + 2 + 3	Test Channel:	159				
Remark:	1. Average measurement was not p	1. Average measurement was not performed if peak level lower than average					
	limit. So the margin was calculate	ed using the average limi	t for emissions fall				
	within the restricted bands.						
	2. Other frequency was 20dB below	v limit line within 1-18GH	z, there is not show				
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7400.5	34.4	12.6	47.0	54.0	-7.0	Peak	Horizontal
	8199.5	35.7	12.0	47.7	54.0	-6.3	Peak	Horizontal
*	8735.0	32.8	13.9	46.7	68.2	-21.5	Peak	Horizontal
*	9772.0	34.3	14.9	49.2	68.2	-19.0	Peak	Horizontal
	7604.5	34.9	12.7	47.6	54.0	-6.4	Peak	Vertical
	8165.5	35.4	12.1	47.5	54.0	-6.5	Peak	Vertical
*	8692.5	34.0	13.7	47.7	68.2	-20.5	Peak	Vertical
*	9721.0	34.5	14.7	49.2	68.2	-19.0	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C					
Test Engineer	Kevin Ker	Relative Humidity	57 %					
Test Site	AC1	Test Date	2018/06/24					
Test Mode:	802.11ac-VHT80 - Ant 0 + 1 + 2 + 3	Test Channel:	42					
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average					
	limit. So the margin was calculate	ed using the average limi	t for emissions fall					
	within the restricted bands.							
	2. Other frequency was 20dB below	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.							

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7502.5	35.0	12.8	47.8	54.0	-6.2	Peak	Horizontal
	8242.0	35.2	11.9	47.1	54.0	-6.9	Peak	Horizontal
*	8692.5	33.3	13.7	47.0	68.2	-21.2	Peak	Horizontal
*	9721.0	34.8	14.7	49.5	68.2	-18.7	Peak	Horizontal
	7570.5	34.0	12.8	46.8	54.0	-7.2	Peak	Vertical
	8276.0	34.6	11.9	46.5	54.0	-7.5	Peak	Vertical
*	8692.5	32.6	13.7	46.3	68.2	-21.9	Peak	Vertical
*	9814.5	33.7	15.4	49.1	68.2	-19.1	Peak	Vertical
	. "*" :		al :4 a line:4 :				4 a 4 b a 4	مالية مربعة مراجا م

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C					
Test Engineer	Kevin Ker	Relative Humidity	57 %					
Test Site	AC1	Test Date	2018/06/24					
Test Mode:	802.11ac-VHT80 - Ant 0 + 1 + 2 + 3	Test Channel:	155					
Remark:	1. Average measurement was not p	1. Average measurement was not performed if peak level lower than average						
	limit. So the margin was calculate	ed using the average limi	t for emissions fall					
	within the restricted bands.	within the restricted bands.						
	2. Other frequency was 20dB below	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.							

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7468.5	34.5	12.8	47.3	54.0	-6.7	Peak	Horizontal
	8352.5	35.2	12.0	47.2	54.0	-6.8	Peak	Horizontal
*	8735.0	32.9	13.9	46.8	68.2	-21.4	Peak	Horizontal
*	9593.5	34.3	14.4	48.7	68.2	-19.5	Peak	Horizontal
	7332.5	34.0	12.4	46.4	54.0	-7.6	Peak	Vertical
	8165.5	35.7	12.1	47.8	54.0	-6.2	Peak	Vertical
*	8871.0	33.9	14.0	47.9	68.2	-20.3	Peak	Vertical
*	9687.0	35.3	14.6	49.9	68.2	-18.3	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C					
Test Engineer	Kevin Ker	Relative Humidity	57 %					
Test Site	AC1	Test Date	2018/06/24					
Test Mode:	802.11ax-HE20 - Ant 0 + 1 + 2 + 3	Test Channel:	36					
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average					
	limit. So the margin was calculate	ed using the average limi	t for emissions fall					
	within the restricted bands.	within the restricted bands.						
	2. Other frequency was 20dB below	v limit line within 1-18GH	z, there is not show					
	in the report.							

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7502.5	34.8	12.8	47.6	54.0	-6.4	Peak	Horizontal
	8310.0	35.1	11.9	47.0	54.0	-7.0	Peak	Horizontal
*	8769.0	32.7	13.9	46.6	68.2	-21.6	Peak	Horizontal
*	9814.5	33.6	15.4	49.0	68.2	-19.2	Peak	Horizontal
	7536.5	35.5	12.8	48.3	54.0	-5.7	Peak	Vertical
	8352.5	35.7	12.0	47.7	54.0	-6.3	Peak	Vertical
*	8811.5	33.8	14.0	47.8	68.2	-20.4	Peak	Vertical
*	9678.5	34.0	14.6	48.6	68.2	-19.6	Peak	Vertical
Note 1	: "*" is not in r	estricted ban	d, its limit i	s -27dBm/MI	Iz. At a distanc	e of 3 me	eters, the f	ield 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 ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C					
Test Engineer	Kevin Ker	Relative Humidity	57 %					
Test Site	AC1	Test Date	2018/06/24					
Test Mode:	802.11ax-HE20 - Ant 0 + 1 + 2 + 3	Test Channel:	44					
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average					
	limit. So the margin was calculate	ed using the average limi	t for emissions fall					
	within the restricted bands.							
	2. Other frequency was 20dB below	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.							

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7468.5	35.1	12.8	47.9	54.0	-6.1	Peak	Horizontal
	8199.5	35.2	12.0	47.2	54.0	-6.8	Peak	Horizontal
*	8854.0	33.5	14.0	47.5	68.2	-20.7	Peak	Horizontal
*	9636.0	34.8	14.4	49.2	68.2	-19.0	Peak	Horizontal
	7366.5	34.6	12.5	47.1	54.0	-6.9	Peak	Vertical
	8165.5	37.0	12.1	49.1	54.0	-4.9	Peak	Vertical
*	8692.5	33.0	13.7	46.7	68.2	-21.5	Peak	Vertical
*	9857.0	33.3	16.2	49.5	68.2	-18.7	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C					
Test Engineer	Kevin Ker	Relative Humidity	57 %					
Test Site	AC1	Test Date	2018/06/24					
Test Mode:	802.11ax-HE20 - Ant 0 + 1 + 2 + 3	Test Channel:	48					
Remark:	1. Average measurement was not p	1. Average measurement was not performed if peak level lower than average						
	limit. So the margin was calculate	ed using the average limi	t for emissions fall					
	within the restricted bands.	within the restricted bands.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show							
	in the report.							

	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7468.5	34.7	12.8	47.5	54.0	-6.5	Peak	Horizontal
	8352.5	35.0	12.0	47.0	54.0	-7.0	Peak	Horizontal
*	8692.5	33.7	13.7	47.4	68.2	-20.8	Peak	Horizontal
*	9772.0	34.7	14.9	49.6	68.2	-18.6	Peak	Horizontal
	7579.0	35.2	12.7	47.9	54.0	-6.1	Peak	Vertical
	8352.5	35.0	12.0	47.0	54.0	-7.0	Peak	Vertical
*	8692.5	34.0	13.7	47.7	68.2	-20.5	Peak	Vertical
*	9678.5	34.5	14.6	49.1	68.2	-19.1	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C
Test Engineer	Kevin Ker	Relative Humidity	57 %
Test Site	AC1	Test Date	2018/06/24
Test Mode:	802.11ax-HE20 - Ant 0 + 1 + 2 + 3	Test Channel:	149
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average
	limit. So the margin was calculate	ed using the average limi	t for emissions fall
	within the restricted bands.		
	2. Other frequency was 20dB below	v limit line within 1-18GH	z, there is not show
	in the report.		

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7502.5	35.4	12.8	48.2	54.0	-5.8	Peak	Horizontal
	8165.5	35.6	12.1	47.7	54.0	-6.3	Peak	Horizontal
*	8709.5	35.0	13.8	48.8	68.2	-19.4	Peak	Horizontal
*	9857.0	35.2	16.2	51.4	68.2	-16.8	Peak	Horizontal
	7502.5	34.7	12.8	47.5	54.0	-6.5	Peak	Vertical
	8352.5	35.1	12.0	47.1	54.0	-6.9	Peak	Vertical
*	8811.5	33.7	14.0	47.7	68.2	-20.5	Peak	Vertical
*	9840.0	34.4	16.0	50.4	68.2	-17.8	Peak	Vertical
	1	1	1	1		1		1

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C					
Test Engineer	Kevin Ker	Relative Humidity	57 %					
Test Site	AC1	Test Date	2018/06/24					
Test Mode:	802.11ax-HE20 - Ant 0 + 1 + 2 + 3	Test Channel:	157					
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average					
	limit. So the margin was calculate	ed using the average limi	t for emissions fall					
	within the restricted bands.	within the restricted bands.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not sho							
	in the report.							

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7604.5	33.9	12.7	46.6	54.0	-7.4	Peak	Horizontal
	8199.5	36.2	12.0	48.2	54.0	-5.8	Peak	Horizontal
*	8701.0	34.2	13.8	48.0	68.2	-20.2	Peak	Horizontal
*	9933.5	36.0	15.3	51.3	68.2	-16.9	Peak	Horizontal
	7468.5	35.7	12.8	48.5	54.0	-5.5	Peak	Vertical
	8191.0	37.1	12.0	49.1	54.0	-4.9	Peak	Vertical
*	8692.5	35.9	13.7	49.6	68.2	-18.6	Peak	Vertical
*	10010.0	36.0	15.4	51.4	68.2	-16.8	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C					
Test Engineer	Kevin Ker	Relative Humidity	57 %					
Test Site	AC1	Test Date	2018/06/24					
Test Mode:	802.11ax-HE20 - Ant 0 + 1 + 2 + 3	Test Channel:	165					
Remark:	1. Average measurement was not p	performed if peak level lo	wer than average					
	limit. So the margin was calculate	ed using the average limi	t for emissions fall					
	within the restricted bands.	within the restricted bands.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show							
	in the report.							

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7460.0	35.2	12.8	48.0	54.0	-6.0	Peak	Horizontal
	8454.5	35.5	12.5	48.0	54.0	-6.0	Peak	Horizontal
*	8905.0	34.7	14.0	48.7	68.2	-19.5	Peak	Horizontal
*	9806.0	35.8	15.2	51.0	68.2	-17.2	Peak	Horizontal
	7400.5	34.6	12.6	47.2	54.0	-6.8	Peak	Vertical
	8259.0	36.9	11.9	48.8	54.0	-5.2	Peak	Vertical
*	8854.0	34.3	14.0	48.3	68.2	-19.9	Peak	Vertical
*	9636.0	34.4	14.4	48.8	68.2	-19.4	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C					
Test Engineer	Kevin Ker	Relative Humidity	57 %					
Test Site	AC1	Test Date	2018/06/24					
Test Mode:	802.11ax-HE40 - Ant 0 + 1 + 2 + 3	Test Channel:	38					
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average					
	limit. So the margin was calculate	ed using the average limi	t for emissions fall					
	within the restricted bands.	within the restricted bands.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not sh							
	in the report.							

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7528.0	36.0	12.8	48.8	54.0	-5.2	Peak	Horizontal
	8352.5	35.7	12.0	47.7	54.0	-6.3	Peak	Horizontal
*	8786.0	34.4	13.9	48.3	68.2	-19.9	Peak	Horizontal
*	9755.0	35.9	14.8	50.7	68.2	-17.5	Peak	Horizontal
	7400.5	35.3	12.6	47.9	54.0	-6.1	Peak	Vertical
	8276.0	35.6	11.9	47.5	54.0	-6.5	Peak	Vertical
*	8692.5	32.8	13.7	46.5	68.2	-21.7	Peak	Vertical
*	9721.0	34.0	14.7	48.7	68.2	-19.5	Peak	Vertical
Note 1	: "*" is not in r	estricted ban	d, its limit i	s -27dBm/MI	Iz. At a distanc	e of 3 me	eters, the f	ield 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 ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C				
Test Engineer	Kevin Ker	Relative Humidity	57 %				
Test Site	AC1	Test Date	2018/06/24				
Test Mode:	802.11ax-HE40 - Ant 0 + 1 + 2 + 3	Test Channel:	46				
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit. So the margin was calculate	ed using the average limi	t for emissions fall				
	within the restricted bands.						
	2. Other frequency was 20dB below	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show					
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7604.5	34.2	12.7	46.9	54.0	-7.1	Peak	Horizontal
	8199.5	36.0	12.0	48.0	54.0	-6.0	Peak	Horizontal
*	8658.5	34.2	13.6	47.8	68.2	-20.4	Peak	Horizontal
*	9593.5	33.8	14.4	48.2	68.2	-20.0	Peak	Horizontal
	7570.5	34.5	12.8	47.3	54.0	-6.7	Peak	Vertical
	8242.0	35.4	11.9	47.3	54.0	-6.7	Peak	Vertical
*	8735.0	33.8	13.9	47.7	68.2	-20.5	Peak	Vertical
*	9899.5	33.9	15.4	49.3	68.2	-18.9	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C			
Test Engineer	Kevin Ker	Relative Humidity	57 %			
Test Site	AC1	Test Date	2018/06/24			
Test Mode:	802.11ax-HE40 - Ant 0 + 1 + 2 + 3	Test Channel:	151			
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average			
	limit. So the margin was calculate	ed using the average limi	t for emissions fall			
	within the restricted bands.					
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show					
	in the report.					

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7502.5	34.3	12.8	47.1	54.0	-6.9	Peak	Horizontal
	8242.0	35.8	11.9	47.7	54.0	-6.3	Peak	Horizontal
*	8658.5	33.6	13.6	47.2	68.2	-21.0	Peak	Horizontal
*	9678.5	35.6	14.6	50.2	68.2	-18.0	Peak	Horizontal
	7468.5	36.0	12.8	48.8	54.0	-5.2	Peak	Vertical
	8318.5	37.0	11.9	48.9	54.0	-5.1	Peak	Vertical
*	8811.5	33.8	14.0	47.8	68.2	-20.4	Peak	Vertical
*	9814.5	34.7	15.4	50.1	68.2	-18.1	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C					
Test Engineer	Kevin Ker	Relative Humidity	57 %					
Test Site	AC1	Test Date	2018/06/24					
Test Mode:	802.11ax-HE40 - Ant 0 + 1 + 2 + 3	Test Channel:	159					
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average					
	limit. So the margin was calculate	ed using the average limi	t for emissions fall					
	within the restricted bands.	within the restricted bands.						
	2. Other frequency was 20dB below	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.							

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7536.5	34.1	12.8	46.9	54.0	-7.1	Peak	Horizontal
	8335.5	35.9	11.9	47.8	54.0	-6.2	Peak	Horizontal
*	8692.5	34.2	13.7	47.9	68.2	-20.3	Peak	Horizontal
*	9857.0	33.9	16.2	50.1	68.2	-18.1	Peak	Horizontal
	7672.5	35.3	12.5	47.8	54.0	-6.2	Peak	Vertical
	8386.5	34.6	12.1	46.7	54.0	-7.3	Peak	Vertical
*	8854.0	33.3	14.0	47.3	68.2	-20.9	Peak	Vertical
*	9678.5	34.8	14.6	49.4	68.2	-18.8	Peak	Vertical
*	9678.5	34.8	14.6	49.4	68.2	-18.8	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C		
Test Engineer	Kevin Ker	Relative Humidity	57 %		
Test Site	AC1	Test Date	2018/06/24		
Test Mode:	802.11ax-HE80 - Ant 0 + 1 + 2 + 3	Test Channel:	42		
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average		
	limit. So the margin was calculate	ed using the average limi	t for emissions fall		
	within the restricted bands.				
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not sh				
	in the report.				

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7596.0	34.3	12.7	47.0	54.0	-7.0	Peak	Horizontal
	8318.5	36.1	11.9	48.0	54.0	-6.0	Peak	Horizontal
*	8769.0	34.0	13.9	47.9	68.2	-20.3	Peak	Horizontal
*	9899.5	34.3	15.4	49.7	68.2	-18.5	Peak	Horizontal
	7400.5	34.5	12.6	47.1	54.0	-6.9	Peak	Vertical
	8165.5	36.7	12.1	48.8	54.0	-5.2	Peak	Vertical
*	8658.5	34.3	13.6	47.9	68.2	-20.3	Peak	Vertical
*	9636.0	35.0	14.4	49.4	68.2	-18.8	Peak	Vertical
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Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C
Test Engineer	Kevin Ker	Relative Humidity	57 %
Test Site	AC1	Test Date	2018/06/24
Test Mode:	802.11ax-HE80 - Ant 0 + 1 + 2 + 3	Test Channel:	155
Remark:	1. Average measurement was not p	performed if peak level lo	wer than average
	limit. So the margin was calculate	ed using the average limi	t for emissions fall
	within the restricted bands.		
	2. Other frequency was 20dB below	v limit line within 1-18GH	z, there is not show
	in the report.		

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7604.5	34.4	12.7	47.1	54.0	-6.9	Peak	Horizontal
	8242.0	35.7	11.9	47.6	54.0	-6.4	Peak	Horizontal
*	8888.0	33.8	14.0	47.8	68.2	-20.4	Peak	Horizontal
*	9942.0	34.8	15.3	50.1	68.2	-18.1	Peak	Horizontal
	7434.5	34.2	12.7	46.9	54.0	-7.1	Peak	Vertical
	8276.0	35.3	11.9	47.2	54.0	-6.8	Peak	Vertical
*	8888.0	33.0	14.0	47.0	68.2	-21.2	Peak	Vertical
*	10214.0	34.0	16.3	50.3	68.2	-17.9	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



The Worst Case of Radiated Emission below 1GHz:

Site: AC1	Time: 2018/06/27 - 20:04
Limit: FCC_Part15.209_RE(3m)	Engineer: Kevin Ker
Probe: VULB 9168_20-2000MHz	Polarity: Horizontal
EUT: ACCESS POINT	Power: AC 120V/60Hz

Test Mode: There is the worst case within frequency range 30MHz~1GHz.



No	Flag	Mark	Frequency	Measure	Reading	Over Limit	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	38.730	18.146	4.516	-21.854	40.000	13.630	QP
2			49.885	17.060	2.104	-22.940	40.000	14.957	QP
3			161.435	18.952	8.934	-24.548	43.500	10.018	QP
4			332.155	21.812	6.172	-24.188	46.000	15.640	QP
5			371.440	22.200	5.826	-23.800	46.000	16.374	QP
6			418.000	22.475	5.263	-23.525	46.000	17.211	QP

Note 1: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

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

Note 2: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 40GHz), therefore no data appear in the report.



Site: AC1	Time: 2018/06/27 - 20:05
Limit: FCC_Part15.209_RE(3m)	Engineer: Kevin Ker
Probe: VULB 9168_20-2000MHz	Polarity: Vertical
EUT: ACCESS POINT	Power: AC 120V/60Hz

Test Mode: There is the worst case within frequency range 30MHz~1GHz.



No	Flag	Mark	Frequency	Measure	Reading	Over Limit	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	40.185	32.672	18.763	-7.328	40.000	13.909	QP
2			43.580	30.764	16.205	-9.236	40.000	14.559	QP
3			78.500	29.747	20.516	-10.253	40.000	9.232	QP
4			91.595	28.132	16.427	-15.368	43.500	11.705	QP
5			161.435	27.952	17.934	-15.548	43.500	10.018	QP
6			418.970	22.289	5.063	-23.711	46.000	17.226	QP

Note 1: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

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

Note 2: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 40GHz), therefore no data appear in the report.



For APIN0514 - Omni Antenna (AP-ANT-19)

Product	ACCESS POINT	Temperature	26°C
Test Engineer	Kevin Ker	Relative Humidity	57 %
Test Site	AC1	Test Date	2018/06/23
Test Mode:	802.11a - Ant 0 + 1 + 2 + 3	Test Channel:	36
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average
	limit. So the margin was calculate	ed using the average limi	t for emissions fall
	within the restricted bands.		
	2. Other frequency was 20dB below	v limit line within 1-18GH	z, there is not show
	in the report.		

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7494.0	36.6	12.8	49.4	54.0	-4.6	Peak	Horizontal
	8140.0	38.8	12.2	51.0	54.0	-3.0	Peak	Horizontal
*	9593.5	35.9	14.4	50.3	68.2	-17.9	Peak	Horizontal
*	9908.0	37.5	15.3	52.8	68.2	-15.4	Peak	Horizontal
	7604.5	37.2	12.7	49.9	54.0	-4.1	Peak	Vertical
	8276.0	37.8	11.9	49.7	54.0	-4.3	Peak	Vertical
*	9831.5	36.1	15.9	52.0	68.2	-16.2	Peak	Vertical
*	10154.5	37.5	16.0	53.5	68.2	-14.7	Peak	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 ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C			
Test Engineer	Kevin Ker	Relative Humidity	57 %			
Test Site	AC1	Test Date	2018/06/30			
Test Mode:	802.11a - Ant 0 + 1 + 2 + 3	Test Channel:	44			
Remark:	1. Average measurement was not p	performed if peak level low	wer than average			
	limit. So the margin was calculate	ed using the average limi	t for emissions fall			
	within the restricted bands.					
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show					
	in the report.					

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7562.0	37.9	12.8	50.7	54.0	-3.3	Peak	Horizontal
	8165.5	38.5	12.1	50.6	54.0	-3.4	Peak	Horizontal
*	9857.0	35.8	16.2	52.0	68.2	-16.2	Peak	Horizontal
*	10273.5	36.4	16.5	52.9	68.2	-15.3	Peak	Horizontal
	7460.0	36.8	12.8	49.6	54.0	-4.4	Peak	Vertical
	8225.0	37.7	11.9	49.6	54.0	-4.4	Peak	Vertical
*	9908.0	37.1	15.3	52.4	68.2	-15.8	Peak	Vertical
*	10384.0	36.3	16.9	53.2	68.2	-15.0	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C				
Test Engineer	Kevin Ker	Relative Humidity	57 %				
Test Site	AC1	Test Date	2018/06/30				
Test Mode:	802.11a - Ant 0 + 1 + 2 + 3	Test Channel:	48				
Remark:	1. Average measurement was not p	performed if peak level low	wer than average				
	limit. So the margin was calculate	ed using the average limi	t for emissions fall				
	within the restricted bands.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7383.5	37.1	12.5	49.6	54.0	-4.4	Peak	Horizontal
	7647.0	36.6	12.5	49.1	54.0	-4.9	Peak	Horizontal
*	9670.0	36.5	14.5	51.0	68.2	-17.2	Peak	Horizontal
*	9959.0	36.7	15.3	52.0	68.2	-16.2	Peak	Horizontal
	7460.0	36.6	12.8	49.4	54.0	-4.6	Peak	Vertical
	7655.5	37.4	12.5	49.9	54.0	-4.1	Peak	Vertical
*	9627.5	35.4	14.4	49.8	68.2	-18.4	Peak	Vertical
*	9891.0	36.9	15.5	52.4	68.2	-15.8	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C				
Test Engineer	Kevin Ker	Relative Humidity	57 %				
Test Site	AC1	Test Date	2018/06/30				
Test Mode:	802.11a - Ant 0 + 1 + 2 + 3	Test Channel:	149				
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit. So the margin was calculate	ed using the average limi	t for emissions fall				
	within the restricted bands.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7579.0	36.3	12.7	49.0	54.0	-5.0	Peak	Horizontal
	8327.0	37.1	11.9	49.0	54.0	-5.0	Peak	Horizontal
*	9840.0	35.4	16.0	51.4	68.2	-16.8	Peak	Horizontal
*	10469.0	35.3	17.1	52.4	68.2	-15.8	Peak	Horizontal
	7434.5	36.4	12.7	49.1	54.0	-4.9	Peak	Vertical
	8352.5	36.0	12.0	48.0	54.0	-6.0	Peak	Vertical
*	9925.0	36.3	15.3	51.6	68.2	-16.6	Peak	Vertical
*	10367.0	35.1	16.8	51.9	68.2	-16.3	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C			
Test Engineer	Kevin Ker	Relative Humidity	57 %			
Test Site	AC1	Test Date	2018/06/30			
Test Mode:	802.11a - Ant 0 + 1 + 2 + 3	Test Channel:	157			
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average			
	limit. So the margin was calculated using the average limit for emissions fall					
	within the restricted bands.					
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show					
	in the report.					

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7502.5	36.8	12.8	49.6	54.0	-4.4	Peak	Horizontal
	8165.5	37.9	12.1	50.0	54.0	-4.0	Peak	Horizontal
*	9678.5	35.6	14.6	50.2	68.2	-18.0	Peak	Horizontal
*	9950.5	36.8	15.3	52.1	68.2	-16.1	Peak	Horizontal
	7468.5	36.7	12.8	49.5	54.0	-4.5	Peak	Vertical
	8242.0	37.0	11.9	48.9	54.0	-5.1	Peak	Vertical
*	9627.5	36.4	14.4	50.8	68.2	-17.4	Peak	Vertical
*	9916.5	37.2	15.3	52.5	68.2	-15.7	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C				
Test Engineer	Kevin Ker	Relative Humidity	57 %				
Test Site	AC1	Test Date	2018/06/30				
Test Mode:	802.11a - Ant 0 + 1 + 2 + 3	Test Channel:	165				
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit. So the margin was calculate	ed using the average limi	t for emissions fall				
	within the restricted bands.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7443.0	37.0	12.7	49.7	54.0	-4.3	Peak	Horizontal
	8216.5	37.5	11.9	49.4	54.0	-4.6	Peak	Horizontal
*	9644.5	37.0	14.4	51.4	68.2	-16.8	Peak	Horizontal
*	10460.5	36.2	17.1	53.3	68.2	-14.9	Peak	Horizontal
	7570.5	36.5	12.8	49.3	54.0	-4.7	Peak	Vertical
	8233.5	38.1	11.9	50.0	54.0	-4.0	Peak	Vertical
*	9755.0	36.2	14.8	51.0	68.2	-17.2	Peak	Vertical
*	10103.5	36.3	15.7	52.0	68.2	-16.2	Peak	Vertical

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)



Product	ACCESS POINT	Temperature	26°C				
Test Engineer	Kevin Ker	Relative Humidity	57 %				
Test Site	AC1	Test Date	2018/06/30				
Test Mode:	802.11ac-VHT20 - Ant 0 + 1 + 2 + 3	Test Channel:	36				
Remark:	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit. So the margin was calculated using the average limit for emissions fall						
	within the restricted bands.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	7613.0	36.5	12.6	49.1	54.0	-4.9	Peak	Horizontal
	8199.5	37.9	12.0	49.9	54.0	-4.1	Peak	Horizontal
*	9899.5	35.7	15.4	51.1	68.2	-17.1	Peak	Horizontal
*	10401.0	35.3	16.9	52.2	68.2	-16.0	Peak	Horizontal
	7426.0	35.9	12.7	48.6	54.0	-5.4	Peak	Vertical
	8497.0	37.0	12.8	49.8	54.0	-4.2	Peak	Vertical
*	9746.5	36.1	14.8	50.9	68.2	-17.3	Peak	Vertical
*	10333.0	35.4	16.7	52.1	68.2	-16.1	Peak	Vertical
			-1 10 - 11 10 - 1	- 07-ID /N/I		(0	(and a final sector

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)