

NCC RADIO TEST REPORT

Equipment : Wireless Access Point
Brand Name : Ruckus
Model Name : R550
Applicant : Ruckus Wireless Inc.
350 W. Java Dr., Sunnyvale CA 94089 USA
Manufacturer : Ruckus Wireless Inc.
350 W. Java Dr., Sunnyvale CA 94089 USA
Standard : NCC LP0002 (2018-01-10)

The product was received on Jan. 22, 2020 and testing was started from Jan. 27, 2020 and completed on Feb. 29, 2020. We, Sporton International (USA) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures NCC LP0002 (2018-01-10) and has been in compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by A2LA or any agency of government.

The test results in this partial report apply exclusively to the tested model / sample. Without written approval of Sporton International (USA) Inc., the test report shall not be reproduced except in full.



Approved by: Ken Chen

Sporton International (USA) Inc.
1175 Montague Expressway, Milpitas, CA 95035



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History of this test report

Report No.	Version	Description	Issued Date
TR200117001H	01	Initial issue of report	Apr. 16, 2020

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
2.1	LP0002 2.2 5.20.2	Maximum Power Density	Pass	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Wii Chang

Report Producer: Dara Chiu



1 General Description

1.1 Product Feature of Equipment Under Test

Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n/ax, Wi-Fi 5GHz 802.11a/n/ac/ax and Zigbee.

Product Specification subjective to this standard	
Antenna Type	WLAN <Ant. 1>: Internal Antenna <Ant. 2>: Internal Antenna Bluetooth: Metal Antenna Zigbee: Metal Antenna

1.2 Modification of EUT

No modifications are made to the EUT during all test items.

1.3 Testing Location

Test Site	Sporton International (USA) Inc.
Test Site Location	1175 Montague Expressway, Milpitas, CA 95035 TEL : 408 9043300
Test Site No.	Sporton Site No.
	TH01-CA

1.4 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ NCC LP0002 (2018-01-10)
- ♦ FCC Part 15 Subpart C §15.247
- ♦ FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05r02
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ ANSI C63.10-2013

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

2 Test Result

2.1 Maximum Power Density

2.1.1 RF Exposure Limit Introduction

According to NCC LP0002, the criteria listed in Table shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §5.20.2.1 and §5.20.2.2.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f ²)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna

2.1.2 Standalone Power Density Calculation

<For WLAN 2.4GHz>

Maximum Power Density				
Max. Power	Gain	EIRP	20 cm PSD	Limit
25.74	4.02	29.76	0.1883	1
dBm	dBi	dBm	mW/cm ²	mW/cm ²

<For WLAN 2.4GHz Band-edge Unmodulated>

Maximum Power Density				
Max. Power	Gain	EIRP	20 cm PSD	Limit
20.45	4.02	24.47	0.0557	1
dBm	dBi	dBm	mW/cm ²	mW/cm ²

<For WLAN 2.4GHz Middle Unmodulated>

Maximum Power Density				
Max. Power	Gain	EIRP	20 cm PSD	Limit
20.96	4.02	24.98	0.0627	1
dBm	dBi	dBm	mW/cm ²	mW/cm ²

<For WLAN 5GHz Band 1>

Maximum Power Density				
Max. Power	Gain	EIRP	20 cm PSD	Limit
24.3	4.79	29.09	0.1614	1
dBm	dBi	dBm	mW/cm ²	mW/cm ²

<For WLAN 5GHz Band 1 Band-edge Unmodulated>

Maximum Power Density				
Max. Power	Gain	EIRP	20 cm PSD	Limit
21.22	4.79	26.01	0.0794	1
dBm	dBi	dBm	mW/cm ²	mW/cm ²

<For WLAN 5GHz Band 1 Middle Unmodulated>

Maximum Power Density				
Max. Power	Gain	EIRP	20 cm PSD	Limit
21.58	4.79	26.37	0.0863	1
dBm	dBi	dBm	mW/cm ²	mW/cm ²

<For WLAN 5GHz Band 2 and Band 3>

Maximum Power Density				
Max. Power	Gain	EIRP	20 cm PSD	Limit
23.92	4.79	28.71	0.1479	1
dBm	dBi	dBm	mW/cm ²	mW/cm ²

<For WLAN 5GHz Band 2 and Band 3 Band-edge Unmodulated>

Maximum Power Density				
Max. Power	Gain	EIRP	20 cm PSD	Limit
23.6	4.79	28.39	0.1374	1
dBm	dBi	dBm	mW/cm ²	mW/cm ²

<For WLAN 5GHz Band 2 and Band 3 Middle Unmodulated>

Maximum Power Density				
Max. Power	Gain	EIRP	20 cm PSD	Limit
23.54	4.79	28.33	0.1355	1
dBm	dBi	dBm	mW/cm ²	mW/cm ²

<For WLAN 5GHz Band 4>

Maximum Power Density				
Max. Power	Gain	EIRP	20 cm PSD	Limit
24.52	2.5	27.02	0.1002	1
dBm	dBi	dBm	mW/cm ²	mW/cm ²

<For WLAN 5GHz Band 4 Band-edge Unmodulated>

Maximum Power Density				
Max. Power	Gain	EIRP	20 cm PSD	Limit
25.04	2.5	27.54	0.113	1
dBm	dBi	dBm	mW/cm ²	mW/cm ²

<For WLAN 5GHz Band 4 Middle Unmodulated>

Maximum Power Density				
Max. Power	Gain	EIRP	20 cm PSD	Limit
23.89	2.5	26.39	0.0867	1
dBm	dBi	dBm	mW/cm ²	mW/cm ²



3 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	Testo	608-H1	45142595	N/A	Aug. 07, 2019	Jan. 27, 2020 ~ Feb. 29, 2020	Aug. 06, 2020	Conducted (TH01-CA)
Power Sensor	DARE	RPR3006W	RPR6W-1 901027	50MHz~18GHz	Jun. 27, 2019	Jan. 28, 2020 ~ Feb. 29, 2020	Jun. 26, 2020	Conducted (TH01-CA))
Spectrum Analyzer	Rohde & Schwarz	FSV 40	100895	10Hz~40GHz	Aug. 29, 2019	Jan. 28, 2020 ~ Feb. 29, 2020	Aug. 28, 2020	Conducted (TH01-CA)
Switch Box & RF Cable	EM	EMSW18	SW107090 2	N/A	N/A	Jan. 28, 2020 ~ Feb. 29, 2020	N/A	Conducted (TH01-CA)