

Report No.: FA200130001



RF EXPOSURE EVALUATION REPORT

FCC ID : S9GR850

Equipment : Wireless Access Point

Brand Name : RUCKUS

Model Name : R850

Marketing Name : Ruckus Access Point
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 : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part 2.1091 and it complies with applicable limit.

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

The results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

Approved by: Cona Huang / Deputy Manager

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

TEL: 886-3-327-3456 Page: 1 of 7
FAX: 886-3-328-4978 Issued Date: Apr. 22, 2020

SPORTON LAB. RF EXPOSURE EVALUATION REPORT

Table of Contents

Report No. : FA200130001

1.	DESC	CRIPTION OF EQUIPMENT UNDER TEST (EUT)	4
		MUM RF AVERAGE OUTPUT POWER AMONG PRODUCTION UNITS	
3.	RF E	XPOSURE LIMIT INTRODUCTION	6
4.	RADI	O FREQUENCY RADIATION EXPOSURE EVALUATION	7
	4.1.	Standalone Power Density Calculation	7
	42	Collocated Power Density Calculation	7

TEL: 886-3-327-3456 Page: 2 of 7
FAX: 886-3-328-4978 Issued Date: Apr. 22, 2020

History of this test report

Report No. : FA200130001

Report No.	Version	Description	Issued Date
FA200130001	Rev. 01	Initial issue of report	Apr. 22, 2020

TEL: 886-3-327-3456 Page: 3 of 7
FAX: 886-3-328-4978 Issued Date: Apr. 22, 2020

1. <u>Description of Equipment Under Test (EUT)</u>

Product Feature & Specification				
EUT Type	Wireless Access Point			
Brand Name	RUCKUS			
Model Name	R850			
Marketing Name	Ruckus Access Point			
FCC ID	S9GR850			
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz Zigbee: 2405 MHz ~ 2475 MHz			
Mode	WLAN: 802.11a/b/g/ax HE20 / HE40 / HE80 Bluetooth LE Zigbee: BPSK			
EUT Stage	Identical Prototype			

Report No. : FA200130001

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Reviewed by: Jason Wang Report Producer: Daisy Peng

TEL: 886-3-327-3456 Page : 4 of 7 FAX: 886-3-328-4978 Issued Date : Apr. 22, 2020

2. Maximum RF average output power among production units

	Maximum Average Power (dBm)	
Band / Mode	LE	
	GFSK	
Bluetooth	17.85	

Report No. : FA200130001

Band / Mode	Maximum Average Power (dBm)	
Zigbee	18.60	

Band / Frequency (MHz)	Maximum Average Power (dBm)
2.4GHz WLAN	28.09

Band / Frequency (MHz)	Maximum Average Power (dBm)	
Daliu / Flequelicy (Minz)	4TX	
5.2GHz WLAN	28.72	
5.8GHz WLAN	27.79	

Pand / Eraguanay (MHz)	Maximum Average Power (dBm)	
Band / Frequency (MHz)	8TX	
5.2GHz WLAN	26.54	
5.8GHz WLAN	26.62	

TEL: 886-3-327-3456 Page: 5 of 7
FAX: 886-3-328-4978 Issued Date: Apr. 22, 2020

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
800 B.	(A) Limits for O	ccupational/Controlled Expos	sures	W: 122
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/	f 4.89/1	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
	(B) Limits for Gene	ral Population/Uncontrolled I	Exposure	
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/	f 2.19/1	*(180/f2)	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

TEL: 886-3-327-3456 FAX: 886-3-328-4978

Form version: 1900618

Page: 6 of 7

Report No.: FA200130001

Issued Date: Apr. 22, 2020

PORTON LAB. RF EXPOSURE EVALUATION REPORT

4. Radio Frequency Radiation Exposure Evaluation

4.1. Standalone Power Density Calculation

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)	Power Density / Limit
2.4GHz WLAN	0.00	28.09	28.090	0.644	644.169	0.128	1.000	0.128
5GHz WLAN	1.50	28.72	30.220	1.052	1051.962	0.209	1.000	0.209
Bluetooth	0.55	17.85	18.400	0.069	69.183	0.014	1.000	0.014
Zigbee	0.55	18.60	19.150	0.082	82.224	0.016	0.937	0.017

Report No.: FA200130001

4.2. Collocated Power Density Calculation

2.4GHz WLAN Power Density / Limit	5GHz WLAN Power Density / Limi	Zigbee Power Density / Limit	Σ (Power Density / Limit) of 2.4GHz WLAN + 5GHz WLAN + 2igbee
0.128	0.209	0.017	0.354

Note:

- 1. Σ (Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for 2.4GHz WLAN + 5GHz WLAN + Zigbee.
- 2. Considering the 2.4GHz WLAN collocation with the Zigbee and 5GHz WLAN transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 3 collocated transmitters is compliant

2.4GHz WLAN	5GHz WLAN	Bluetooth	Σ (Power Density / Limit) of 2.4GHz WLAN + 5GHz WLAN + Bluetooth
Power Density / Limit	Power Density / Limi	Power Density / Limit	
0.128	0.209	0.014	0.351

Note:

- 3. Σ (Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for 2.4GHz WLAN + 5GHz WLAN + Bluetooth.
- 4. Considering the 2.4GHz WLAN collocation with the 5GHz WLAN and Bluetooth transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 3 collocated transmitters is compliant

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.

TEL: 886-3-327-3456 Page: 7 of 7
FAX: 886-3-328-4978 Issued Date: Apr. 22, 2020