RF EXPOSURE EVALUATION REPORT

FCC ID	: S9GR560
Equipment	: R560 Access Point
Brand Name	: RUCKUS
Model Name	: R560
Marketing Name	: Ruckus R560
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 Part2.1091 and it complies with applicable limit.

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.

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

Approved by: Cona Huang / Deputy Manager

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History of this test report

Report No.	Version	Description	Issued Date
FA220302001	Rev. 01	Initial issue of report	Sep. 16, 2022

1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	R560 Access Point
Brand Name	RUCKUS
Model Name	R560
Marketing Name	Ruckus R560
FCC ID	S9GR560
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2400 MHz ~ 2483.5 MHz WLAN 5.2GHz Band: 5150 MHz ~ 5250 MHz WLAN 5.3GHz Band: 5250 MHz ~ 5350 MHz WLAN 5.5GHz Band: 5470 MHz ~ 5725 MHz WLAN 5.8GHz Band: 5725 MHz ~ 5855 MHz WLAN 6E: 5925 MHz ~ 6425 MHz, 6425 MHz ~ 6525 MHz, 6525 MHz ~ 6875 MHz, 6875 MHz ~ 7125 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz ZigBee: 2405 MHz ~ 2475 MHz
Mode	WLAN: 802.11a/b/g/n/ac/ax HT20/HT40/VHT20/VHT40/VHT80/VHT160/HE20/HE40/HE80/HE160 Bluetooth LE ZigBee: BPSK
EUT Stage	Identical Prototype

Reviewed by: Jason Wang

Report Producer: Daisy Peng

2. Maximum RF average output power among production units

<Bluetooth LE>

Mod.	Data Rate	Freq. (MHz)	Tune-Up (dBm)
BLE	1Mbps	2402	18.50
BLE	1Mbps	2440	20.00
BLE	1Mbps	2478	18.00
BLE	1Mbps	2480	12.00

<ZigBee>

Mod.	Data Rate	Freq. (MHz)	Tune-Up (dBm)
ZigBee	250K	2405	20.00
ZigBee	250K	2435	20.00
ZigBee	250K	2475	20.00
ZigBee	250K	2480	7.00

<2.4GHz non-TXBF>

2.4GHz Band			
Mod.	Data Rate	Freq. (MHz)	Tune-Up (dBm)
			MIMO
11b	1Mbps	2412	26.50
11b	1Mbps	2437	26.00
11b	1Mbps	2462	26.00
11g	6Mbps	2412	25.00
11g	6Mbps	2437	25.00
11g	6Mbps	2457	24.00
11g	6Mbps	2462	22.00
HT20	MCS0	2412	24.50
HT20	MCS0	2437	25.00
HT20	MCS0	2457	23.50
HT20	MCS0	2462	21.50
HT40	MCS0	2422	24.50
HT40	MCS0	2437	23.00
HT40	MCS0	2452	21.00
VHT20	MCS0	2412	24.50
VHT20	MCS0	2437	25.00
VHT20	MCS0	2457	23.50
VHT20	MCS0	2462	21.50
VHT40	MCS0	2422	24.50
VHT40	MCS0	2437	23.00
VHT40	MCS0	2452	21.00
HE20	MCS0	2412	24.50
HE20	MCS0	2437	25.00
HE20	MCS0	2457	23.50
HE20	MCS0	2462	22.00
HE40	MCS0	2422	24.50
HE40	MCS0	2437	23.00
HE40	MCS0	2452	21.00

<5GHz non-TXBF>

FCC UNII-1 MIMO 2Tx			
Mod.	Data Rate	Freq. (MHz)	Tune-Up (dBm)
			MIMO
11a	6Mbps	5180	24.00
11a	6Mbps	5220	26.00
11a	6Mbps	5240	26.00
HT20	MCS0	5180	23.50
HT20	MCS0	5220	26.00
HT20	MCS0	5240	25.50
HT40	MCS0	5190	23.00
HT40	MCS0	5230	26.00
VHT20	MCS0	5180	23.00
VHT20	MCS0	5220	25.50
VHT20	MCS0	5240	25.00
VHT40	MCS0	5190	23.00
VHT40	MCS0	5230	26.00
VHT80	MCS0	5210	20.50
HE20	MCS0	5180	23.50
HE20	MCS0	5220	26.00
HE20	MCS0	5240	25.50
HE40	MCS0	5190	23.00
HE40	MCS0	5230	26.00
HE80	MCS0	5210	20.50

FCC UNII-2a MIMO 2Tx			
Mod.	Data Rate	Freq. (MHz)	Tune-Up (dBm)
			MIMO
11a	6Mbps	5260	22.50
11a	6Mbps	5300	22.50
11a	6Mbps	5320	23.00
HT20	MCS0	5260	23.00
HT20	MCS0	5300	23.00
HT20	MCS0	5320	23.00
HT40	MCS0	5270	24.00
HT40	MCS0	5310	22.50
VHT20	MCS0	5260	23.00
VHT20	MCS0	5300	23.00
VHT20	MCS0	5320	23.00
VHT40	MCS0	5270	24.00
VHT40	MCS0	5310	22.50
VHT80	MCS0	5290	20.50
HE20	MCS0	5260	23.00
HE20	MCS0	5300	23.50
HE20	MCS0	5320	23.00
HE40	MCS0	5270	24.00
HE40	MCS0	5310	22.50
HE80	MCS0	5290	20.50

FCC UNII-2c MIMO 2Tx			
Mod.	Data Rate	Freq. (MHz)	Tune-Up (dBm)
			MIMO
11a	6Mbps	5500	22.50
11a	6Mbps	5580	23.00
11a	6Mbps	5700	23.00
HT20	MCS0	5500	23.00
HT20	MCS0	5580	24.00
HT20	MCS0	5700	23.00
HT40	MCS0	5510	24.00
HT40	MCS0	5550	24.00
HT40	MCS0	5670	24.00
VHT20	MCS0	5500	23.00
VHT20	MCS0	5580	23.50
VHT20	MCS0	5700	23.00
VHT40	MCS0	5510	24.00
VHT40	MCS0	5550	24.00
VHT40	MCS0	5670	24.00
VHT80	MCS0	5530	22.50
VHT80	MCS0	5610	22.00
11a	6Mbps	5720	23.00
HT20	MCS0	5720	23.00
HT40	MCS0	5710	24.00
VHT20	MCS0	5720	23.00
VHT40	MCS0	5710	24.00
VHT80	MCS0	5690	24.00
HE20	MCS0	5500	23.00
HE20	MCS0	5580	24.00
HE20	MCS0	5700	23.00
HE40	MCS0	5510	24.00
HE40	MCS0	5550	24.00
HE40	MCS0	5670	24.00
HE80	MCS0	5530	22.50
HE80	MCS0	5610	22.00
HE20	MCS0	5720	23.00
HE40	MCS0	5710	24.00
HE80	MCS0	5690	24.00

FCC UNII-3 MIMO 2Tx			
Mod.	Data Rate	Freq. (MHz)	Tune-Up (dBm)
			MIMO
11a	6Mbps	5745	26.00
11a	6Mbps	5785	25.50
11a	6Mbps	5825	25.50
HT20	MCS0	5745	26.00
HT20	MCS0	5785	25.00
HT20	MCS0	5825	25.50
HT40	MCS0	5755	27.00
HT40	MCS0	5795	26.50
VHT20	MCS0	5745	26.00
VHT20	MCS0	5785	25.50
VHT20	MCS0	5825	25.50
VHT40	MCS0	5755	27.00
VHT40	MCS0	5795	26.50
VHT80	MCS0	5775	25.50
HE20	MCS0	5745	26.00
HE20	MCS0	5785	25.50
HE20	MCS0	5825	25.50
HE40	MCS0	5755	27.00
HE40	MCS0	5795	26.50
HE80	MCS0	5775	25.00

<6GHz non-TXBF>

FCC UNII-5 MIMO antenna				
Mod.	Data Rate	Freq. (MHz)	Tune-up (dBm)	
			Ant 4	Ant 2
11a	6Mbps	5955	12.50	12.50
11a	6Mbps	6175	12.50	12.50
11a	6Mbps	6415	12.50	12.50
HT20	MCS0	5955	12.00	13.00
HT20	MCS0	6175	13.00	13.00
HT20	MCS0	6415	13.00	13.00
HT40	MCS0	5965	15.50	15.50
HT40	MCS0	6165	16.00	16.00
HT40	MCS0	6405	15.50	15.50
VHT20	MCS0	5955	13.00	13.00
VHT20	MCS0	6175	13.00	13.00
VHT20	MCS0	6415	13.00	13.00
VHT40	MCS0	5965	15.50	15.50
VHT40	MCS0	6165	16.00	16.00
VHT40	MCS0	6405	16.00	16.00
VHT80	MCS0	5985	18.50	18.50
VHT80	MCS0	6145	18.50	18.50
VHT80	MCS0	6385	18.50	18.50
VHT160	MCS0	6025	22.00	22.00
VHT160	MCS0	6185	22.00	22.00
VHT160	MCS0	6345	22.00	22.00
HE20	MCS0	5955	13.50	13.50
HE20	MCS0	6175	13.50	13.50
HE20	MCS0	6415	13.50	13.50
HE40	MCS0	5965	16.00	16.00
HE40	MCS0	6165	16.00	16.00
HE40	MCS0	6405	16.00	16.00
HE80	MCS0	5985	19.00	19.00
HE80	MCS0	6145	19.00	19.00
HE80	MCS0	6385	19.00	19.00
HE160	MCS0	6025	22.00	22.00
HE160	MCS0	6185	22.00	22.00
HE160	MCS0	6345	22.00	22.00

FCC UNII-6 MIMO antenna				
Mod.	Data Rate	Freq. (MHz)	Tune-up (dBm)	
			Ant 4	Ant 2
11a	6Mbps	6435	13.00	13.00
11a	6Mbps	6475	13.00	13.00
11a	6Mbps	6515	13.00	13.00
HT20	MCS0	6435	13.00	13.00
HT20	MCS0	6475	13.00	13.00
HT20	MCS0	6515	13.00	13.00
HT40	MCS0	6445	16.50	16.50
HT40	MCS0	6485	16.50	16.50
VHT20	MCS0	6435	13.00	13.00
VHT20	MCS0	6475	13.00	13.00
VHT20	MCS0	6515	13.00	13.00
VHT40	MCS0	6445	16.50	16.50
VHT40	MCS0	6485	16.50	16.50
VHT80	MCS0	6465	19.50	19.50
HT40	MCS0	6525	15.50	15.50
VHT40	MCS0	6525	15.50	15.50
VHT80	MCS0	6545	18.50	18.50
VHT160	MCS0	6505	22.50	22.50

FCC UNII-7 MIMO antenna				
Mod.	Data Rate	Freq. (MHz)	Tune-up (dBm)	
			Ant 4	Ant 2
11a	6Mbps	6535	12.50	12.50
11a	6Mbps	6695	12.50	12.50
11a	6Mbps	6855	13.00	13.00
HT20	MCS0	6535	11.00	11.00
HT20	MCS0	6695	12.00	12.00
HT20	MCS0	6855	12.50	12.50
HT40	MCS0	6565	15.00	15.00
HT40	MCS0	6685	16.00	16.00
HT40	MCS0	6845	16.00	16.00
VHT20	MCS0	6535	12.00	12.00
VHT20	MCS0	6695	12.50	12.50
VHT20	MCS0	6855	12.50	12.50
VHT40	MCS0	6565	15.50	15.50
VHT40	MCS0	6685	16.00	16.00
VHT40	MCS0	6845	16.00	16.00
VHT80	MCS0	6625	19.00	19.00
VHT80	MCS0	6705	18.50	18.50
VHT80	MCS0	6785	18.50	18.50
VHT160	MCS0	6665	22.00	22.00
11a	6Mbps	6875	12.50	12.50
HT20	MCS0	6875	12.00	12.00
HT40	MCS0	6885	16.50	16.50
VHT20	MCS0	6875	12.00	12.00
VHT40	MCS0	6885	16.50	16.50
VHT80	MCS0	6865	18.00	18.00
VHT160	MCS0	6825	21.50	21.50

FCC UNII-8 MIMO antenna				
Mod.	Data Rate	Freq. (MHz)	Tune-up (dBm)	
			Ant 4	Ant 2
11a	6Mbps	6895	12.50	12.50
11a	6Mbps	6995	13.00	13.00
11a	6Mbps	7095	13.50	13.50
11a	6Mbps	7115	14.50	14.50
HT20	MCS0	6895	12.50	12.50
HT20	MCS0	6995	13.00	13.00
HT20	MCS0	7095	14.00	14.00
HT20	MCS0	7115	13.50	13.50
HT40	MCS0	6925	16.00	16.00
HT40	MCS0	7005	16.50	16.50
HT40	MCS0	7085	18.00	18.00
VHT20	MCS0	6895	12.50	12.50
VHT20	MCS0	6995	12.50	12.50
VHT20	MCS0	7095	14.00	14.00
VHT20	MCS0	7115	13.50	13.50
VHT40	MCS0	6925	16.00	16.00
VHT40	MCS0	7005	16.00	16.00
VHT40	MCS0	7085	17.50	17.50
VHT80	MCS0	6945	18.50	18.50
VHT80	MCS0	7025	19.00	19.00
VHT160	MCS0	6985	22.00	22.00

3. Determination of exemption

Per 1.1307(b)(3), (i) For single RF sources (i.e., any single fixed RF source, mobile device, or portable device, as defined in paragraph (b)(2) of this section): A single RF source is exempt if:

(A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);

(B) Or the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold Pth (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). Pth is given by:

$$\text{Pth (mW)} = \text{ERP}_{20cm}\,(d / 20)^{x} \quad \text{for distance } d \le 20cm$$

$$\text{Pth (mW)} = \text{ERP}_{20cm} \quad \text{for distance } 20cm < d \le 40cm$$

$$x = -log10\left(\frac{60}{ERP_{20cm}\sqrt{f}}\right)$$

$$\text{ERP}_{20cm}\text{(mW)} \quad \begin{matrix} 0.3\ GHz \le f < 1.5\ GHz: & 2040\ f \\ 1.5\ GHz \le f \le 6\ GHz: & 3060 \end{matrix}$$

(C) Or using Table 1 and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least λ/2π, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of λ/4 or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	1,920 R^2.
1.34-30	3,450 R^2/f^2.
30-300	3.83 R^2.
300-1,500	0.0128 R^2f.
1,500-100,000	19.2R^2.

4. RF Exposure Evaluation

4.1. Standalone assessment

General Note:

1. Pi is mean the available maximum time-averaged power or the ERP, whichever is greater, for fixed, mobile, or portable RF source i at a distance between 0.5 cm and 40 cm
2. Pth is mean the exemption threshold power (Pth) according to the § 1.1307(b)(3)(i)(B) formula for fixed, mobile, or portable RF source i.
3. In this report was used Part1.1307(b)(3)(i)(B) perfrom RF Exposure evaluation
4. The distance of 20cm is for this device

Band	Antenna Gain (dBi)	Maximum Conducted Power (dBm)	Maximum EIRP (dBm)	Maximum ERP (dBm)	Maximum EIRP (mW)	Maximum ERP (mW)	Pi (dBm)	Pi (mW)	Part1.1307 option(b) Threshold (mW)	Part1.1307 option(b) Pi/Pth
WLAN2.4GHz Band	2.5	26.50	29.0	26.85	794.33	484.17	26.85	484.17	3060.000	0.158
WLAN5GHz Band	3.6	27.00	30.6	28.45	1148.15	699.84	28.45	699.84	3060.000	0.229
WLAN6GHz Band	4.4	22.50	26.9	24.75	489.78	298.54	24.75	298.54	3060.000	0.098
Bluetooth	1.8	20.00	21.8	19.65	151.36	92.26	20.00	100.00	3060.000	0.033
ZigBee	1.8	20.00	21.8	19.65	151.36	92.26	20.00	100.00	3060.000	0.033

4.2. Collocated assessment

General Note:

1. Either MPE-based exemption may be considered for test exemption for fixed, mobile, or portable device exposure conditions; therefore, the contributions from each exemption in conjunction with the measured SAR (*Evaluatedk* term) shall be used to determine exemption for simultaneous transmission according to Formula (C.1).
2. The sum of the ratios of the applicable terms for MPE-based and MPE shall be less than 1, to determine LTE + NR + WLAN + BT simultaneous transmission exposure compliance.

$$\sum_{i=1}^{a}\frac{P_i}{P_{\text{th},i}}+\sum_{j=1}^{b}\frac{ERP_j}{ERP_{\text{th},j}}+\sum_{k=1}^{c}\frac{Evaluated_k}{Exposure\ Limit_k}\leq 1 \qquad (C.1)$$

1. BLE + WLAN 2.4GHz + WLAN 5GHz + WLAN 6GHz

Maximum BLE Pi/Pth Ratio	Maximum WLAN 2.4GHz Pi/Pth Ratio	Maximum WLAN 5GHz Pi/Pth Ratio	Maximum WLAN 6GHz Pi/Pth Ratio	Σ (P/Pth Ratio) of BLE + WLAN 2.4GHz + WLAN 5GHz + WLAN 6GHz
0.033	0.158	0.229	0.098	0.518

2. ZigBee + WLAN 2.4GHz + WLAN 5GHz + WLAN 6GHz

Maximum ZigBee Pi/Pth Ratio	Maximum WLAN 2.4GHz Pi/Pth Ratio	Maximum WLAN 5GHz Pi/Pth Ratio	Maximum WLAN 6GHz Pi/Pth Ratio	Σ (P/Pth Ratio) of ZigBee + WLAN 2.4GHz + WLAN 5GHz + WLAN 6GHz
0.033	0.158	0.229	0.098	0.518

Conclusion:

According to 47 CFR §1.1307, the RF exposure analysis concludes that the RF Exposure is FCC compliant.