RF EXPOSURE EVALUATION REPORT

FCC ID	:	Q3K-5XACULCHG
Equipment	:	5 GHz Outdoor PtP/PtMP High Gain Radio Unit
Brand Name	:	RADWIN 2000, RADWIN 5000
Model Name	:	Alpha INT, SU-Air INT, SU-Pro INT
Applicant	:	Radwin Ltd. Habarzel 27 Tel Aviv ISRAEL
Manufacturer	:	Radwin Ltd. Habarzel 27 Tel Aviv ISRAEL
Standard	:	47 CFR Part 1.1310

We, SPORTON INTERNATIONAL INC., have evaluated the device in accordance with 47 CFR Part 1.1310. The device complies with the required 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 variant report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERTIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Cona Huang

Approved by: Cona Huang / Deputy Manager

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

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History of this test report

Report No.	Version	Description	Issued Date
FA8O3134	Rev. 01	Initial issue of report	Dec. 06, 2018

1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	5 GHz Outdoor PtP/PtMP High Gain Radio Unit
Brand Name	RADWIN 2000, RADWIN 5000
Model Name	Alpha INT, SU-Air INT, SU-Pro INT
FCC ID	Q3K-5XACULCHG
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5175 MHz ~ 5245 MHz WLAN 5.8GHz Band: 5730 MHz ~ 5845 MHz
Mode	WLAN 2.4GHz: 802.11n HT20/HT40 WLAN 5GHz: 10MHz/20MHz/40MHz/80MHz
EUT Stage	Identical Prototype

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

2. Maximum RF average output power among production units

Band / Channel / Frequency (MHz)			IEEE 802.11 Average Power (dBm)	
			HT20	HT40
2.4GHz WLAN (DTS)	Ch 1	2412	18.5	
	Ch 3	2422		15.5
	Ch 6	2437	19.5	17.5
	Ch 9	2452		17
	Ch 11	2462	17.5	

Band / Channel / Frequency (MHz)		Average Power (dBm)			
	Ch.BW	10MHz	20MHz	40MHz	80MHz
5.2GHz Hz (U-NII-1)	5175	22			
	5180		20.5		
	5190			13	
	5210	22	22.5	19.5	11
	5230			21.5	
	5240		22.5		
	5245	22			

Band / Channel / Frequency (MHz)		Average Power (dBm)			
	Ch.BW	10MHz	20MHz	40MHz	80MHz
5.8GHz (U-NII-3)	5730	24			
	5735		25.5		
	5745			25.5	
	5765				21
	5785	23.5	25.5	25.5	23.5
	5810				23.5
	5830			27	
	5840		24.5		
	5845	21.5			

3. RF Exposure Limit Introduction

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)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(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 General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(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 70 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

4. Radio Frequency Radiation Exposure Evaluation

4.1. Standalone Power Density Calculation

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 70cm (mW/cm^2)	Limit (mW/cm^2)
2.4GHz WLAN	2412.0	3.00	19.50	22.500	0.178	177.828	0.003	1.000
5.2GHz WLAN	5175.0	22.00	22.50	44.500	28.184	28183.829	0.458	1.000
5.8GHz WLAN	5730.0	22.00	25.50	47.500	56.234	56234.133	0.914	1.000

Conclusion:

According to 47 CFR §1.1310, the RF exposure analysis concludes that the RF Exposure is FCC compliant.