

RF EXPOSURE EVALUATION REPORT

FCC ID : SWX-GBE
Equipment : GigaBeam
Model Name : GBE
Applicant : Ubiquiti Networks, Inc.
685 Third Avenue, 27th Floor
New York, New York 10017
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.



Approved by: Ken Chen



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History of this test report

Report No.	Version	Description	Issued Date
FA970225	Rev. 01	Initial issue of report	Jul. 23, 2019

**1. Description of Equipment Under Test (EUT)**

Product Feature & Specification	
EUT Type	GigaBeam
Model Name	GBE
FCC ID	SWX-GBE
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 60G: GigaBEam
Mode	WLAN: 802.11a/b/g/n/ac HT20 / HT40 / VHT20 / VHT40 / VHT80
HW Version	113-007114-02-00
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: Wan Liu

2. Maximum RF average output power among production units

Mode	Maximum Average power(dBm)
2.4GHz WLAN	6.85
5GHz WLAN	25.70

Mode	EIRP(dBm)
60G	39



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/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 33 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

Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 33cm (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit
2412.0	2.00	6.85	8.850	0.008	7.674	0.001	1.000	0.001
5180.0	10.00	25.70	35.700	3.715	3715.352	0.272	1.000	0.272
58320.0			39.000	7.943	7943.282	0.581	1.000	0.581

Note:

1. For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band
2. The value EIRP of 60G is referred from Sporton FCC radio test report, report number: FR190701001D (FDD ID: SWX-GBE).

WLAN Power Density / Limit	60G Power Density / Limit	Σ (Power Density / Limit) of WLAN+60G
0.272	0.581	0.853

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 WLAN + 60G.
2. Considering all the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 2 collocated transmitters is compliant

Conclusion:

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