



# FCC RADIO EXPOSURE TEST REPORT

**FCC ID** : 2AMP5K60C2  
**Equipment** : 60 GHz Outdoor Distribution System  
**Brand Name** : Kwikbit  
**Model Name** : K60c+  
**Applicant** : Kwikbit Inc.  
7801 E. Bush Lake Rd Suite 300 Minneapolis  
Minnesota United States 55439  
**Manufacturer** : Kwikbit Inc.  
7801 E. Bush Lake Rd Suite 300 Minneapolis  
Minnesota United States 55439  
**Standard** : 47 CFR Part 2.1091

The product was received on Oct. 27, 2020, and testing was started from Oct. 30, 2020 and completed on Jan. 28, 2021. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in 47 CFR Part 2.1091 and shown compliance with the applicable technical standards.

The test 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: Sam Chen

**SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory**  
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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### History of this test report

Report No.	Version	Description	Issued Date
FA001614	01	Initial issue of report	Feb. 08, 2021



### Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
2	-	Exposure evaluation	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: **Sam Chen**

Report Producer: **Wendy Pan**



# 1 General Description

## 1.1 EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
60G	57-71GHz	58.32 GHz 60.48 GHz 62.64 GHz	$\pi/2$ -BPSK, $\pi/2$ -QPSK

## 1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	WNC	XEAG-V01	Integrated beamforming antenna	I-PEX	24.9

Note: The above information was declared by manufacturer.

## 1.3 Accessories

Accessories			
Equipment Name	Brand Name	Model Name	Rating
PoE	RISUNIC	RP019-4800250USG	Input: 100-240V ~ 50/60Hz, 0.5A Max Output: 48V, 0.25A

## 1.4 Testing Location

Testing Location		
<input type="checkbox"/>	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL : 886-3-327-3456 FAX : 886-3-327-0973
<input checked="" type="checkbox"/>	JHUBEI	ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302, Taiwan (R.O.C.) TEL : 886-3-656-9065 FAX : 886-3-656-9085

Test site Designation No. TW0006 with FCC.

Test site registered number IC 4086D with Industry Canada.



## 2 Maximum Permissible Exposure

### 2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-3.0	614	1.63	*(100)	<6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	<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

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	<30
30-300	27.5	0.073	0.2	<30
300-1500	-	-	f/1500	<30
1500-100,000	-	-	1.0	<30

Note: f = frequency in MHz ; \*Plane-wave equivalent power density

### 2.2 MPE Calculation Method

The MPE was calculated at 30 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

**E** = Electric field (V/m)

**P** = RF output power (W)

**G** = EUT Antenna numeric gain (numeric)

**d** = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$



### 2.3 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

Worst-case Integrated Band Power of Unwanted Emission (30MHz ~ 40GHz)						
Start (MHz)	Stop (MHz)	Limit (dBuV/m at 3m)	Limit (mW EIRP)	RBW (MHz)	Num Intervals	Integrated Band Power (mW)
30	88	40	3.01995E-06	0.1	580	0.002
88	216	43.5	6.76083E-06	0.1	1280	0.009
216	960	46	1.20226E-05	0.1	7440	0.089
960	1000	54	7.58578E-05	0.1	400	0.030
1000	40000	54	7.58578E-05	1	39000	2.958
<b>Total</b>						3.089

Total Integrated Band Power of All Emission (30MHz ~ 200GHz)				
Test Frequency (GHz)	30MHz ~ 40GHz Integrated Band Power (mW)	40 ~ 200GHz EIRP (dBm)	40 ~ 200GHz EIRP (mW)	30MHz ~200GHz Total Integrated Band Power (mW)
58.32	3.089	39.59	9090.23	9093.322
60.48		39.46	8834.13	8837.214
62.64		37.80	6020.65	6023.740

Maximum Permissible Exposure of Fundamental Emissions							
Separation Distance (cm)	30						
Maximum EIPR Power of Test Frequency (GHz)	Ant. Gain (dBi)	Average EIRP Power (dBm)	Tolerance (dB)	Tune-up Average EIRP Power (dBm)	Tune-up Average EIRP Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )
58.32	24.9	39.59	0.50	40.09	10199.41	0.902	1.00



Maximum Permissible Exposure of Fundamental + Unwanted Emissions								
Separation Distance (cm)		30						
Maximum EIPR Power of Test Frequency (GHz)	Ant. Gain (dBi)	Average EIRP Power (dBm)	Average EIRP Power (mW)	Tolerance (dB)	Tune-up Average EIRP Power (dBm)	Tune-up Average EIRP Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )
58.32	24.9	39.59	9093.32	0.50	44.42	10202.88	0.903	1.00

Note: The above antenna gain was declared by manufacturer.

————THE END————