



Shenzhen Huaxia Testing Technology Co., Ltd

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

Telephone: +86-755-26648640

Fax: +86-755-26648637

Website: www.cqa-cert.com

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RF Exposure Evaluation Report

Report No. : CQASZ20190800709E-02
Applicant: ZAGG Inc.
Address of Applicant: 910 West Legacy Center Way, Midvale, UT, United States, 84047, USA
Equipment Under Test (EUT):
EUT Name: Braven Flye Rush
Model No.: BIEFSTWS44
Brand Name: BRAVEN
FCC ID: QTG-BAICR
Standards: 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2019-08-14
Date of Test: 2019-08-14 to 2019-08-20
Date of Issue: 2019-08-20
Test Result : PASS*

*In the configuration tested, the EUT complied with the standards specified above

Tested By:

Tom Chen.

(Tom chen)

Reviewed By:

Sheek, Luo

(Sheek Luo)

Approved By:

Jack Ai

(Jack Ai)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20190800709E-02	Rev.01	Initial report	2019-08-20

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3 General Information

3.1 Client Information

Applicant:	ZAGG Inc.
Address of Applicant:	910 West Legacy Center Way, Midvale, UT, United States, 84047, USA
Manufacturer:	ZAGG Inc.
Address of Manufacturer:	910 West Legacy Center Way, Midvale, UT, United States, 84047, USA

3.2 General Description of EUT

Product Name:	Braven Flye Rush
Model No.:	BIEFSTWS44
Trade Mark:	BRAVEN
Hardware Version:	V23
Software Version:	V0B
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V5.0
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Transfer Rate:	1Mbps/2Mbps/3Mbps
Number of Channel:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
Product Type:	☐ Mobile ☒ Portable ☐ Fix Location
Test Software of EUT:	Blue test3 (manufacturer declare)
Antenna Type:	Integral antenna
Antenna Gain:	-1.52dBi
Rating:	CASE:3.7V,500mAh 1.85Wh EARBUD:60mAh 0.24Wh Input:5V $\overline{\text{---}}$ 250mA Charging Case Input:5V $\overline{\text{---}}$ 80mA Earbud

Note: 1. Only one model number: BIEFSTWS44, but it comes in three colors (black, white, blue), only white EUT was tested.

2. Since the left and right earbud have identical RF parameter, we tested only the left ear.

Battery information:

Object / part No.	Factory	Model	Technical data
Battery 1 in Earbud	Shenzhen VDL Electronics Co., LTD.	VDL 601115	60mAh, 3.7V, 0.222Wh
Battery 2 in Charging Case	GOLDEN CEL BATTERY CO., LTD.	CEL 702334	500mAh, 3.7V, 1.85Wh

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

4.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$\left[\frac{(\text{max. power of channel, including tune-up tolerance, mW})}{(\text{min. test separation distance, mm})} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

$f(\text{GHz})$ is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation¹⁷

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

4.1.3 EUT RF Exposure

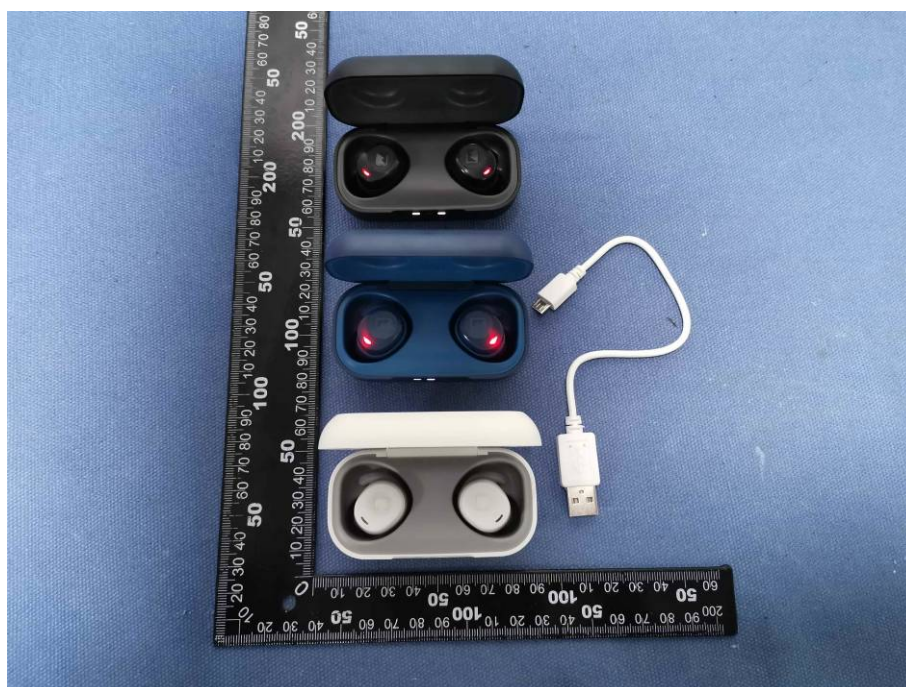
Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	3.710	3.0±1	4.0	2.512
Middle(2441MHz)	3.580	3.0±1	4.0	2.512
Highest(2480MHz)	3.920	3.0±1	4.0	2.512
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	5.230	4.5±1	5.5	3.548
Middle(2441MHz)	5.160	4.5±1	5.5	3.548
Highest(2480MHz)	5.620	5.0±1	6.0	3.981
8DPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	5.610	5.0±1	6.0	3.981
Middle(2441MHz)	5.560	5.0±1	6.0	3.981
Highest(2480MHz)	6.050	5.5±1	6.5	4.467

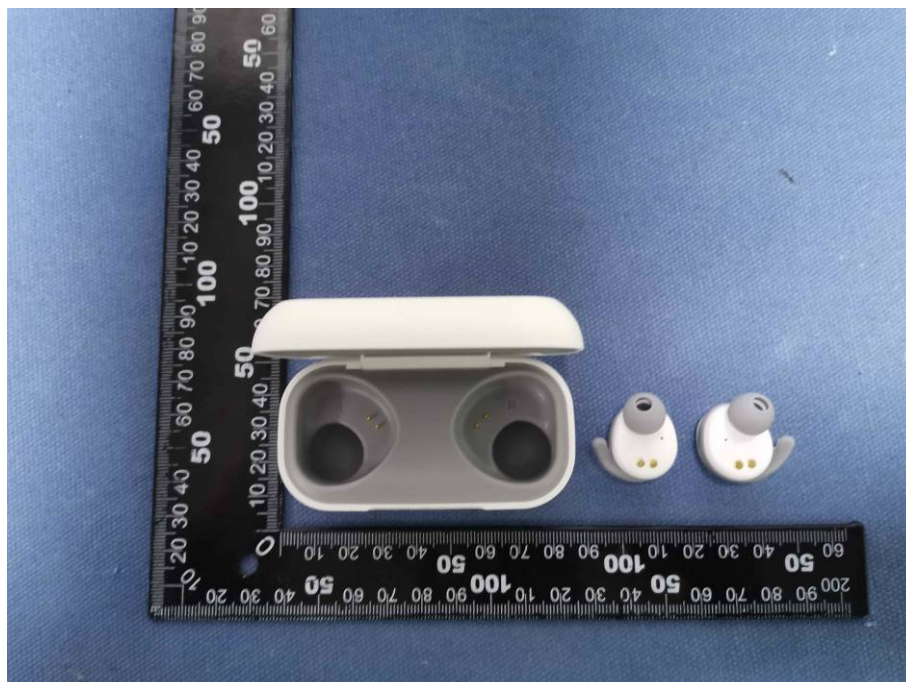
Worst case: 8DPSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	5.610	5.0±1	6.0	3.981	1.234	3.0
Middle (2441MHz)	5.560	5.0±1	6.0	3.981	1.244	
Highest (2480MHz)	6.050	5.5±1	6.5	4.467	1.407	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

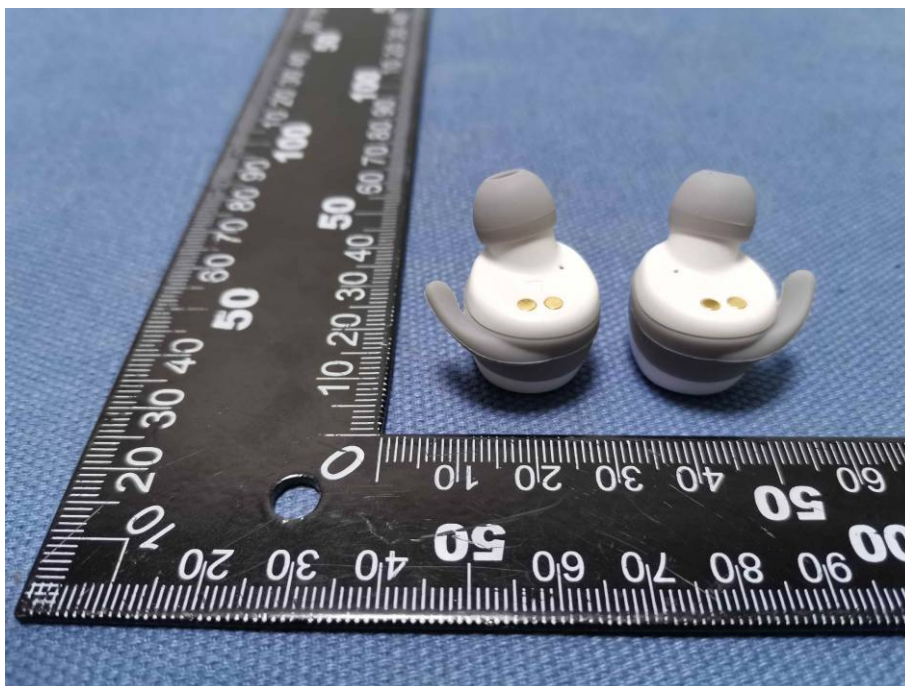
Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20190800709E-01

5 Photographs - EUT Constructional Details



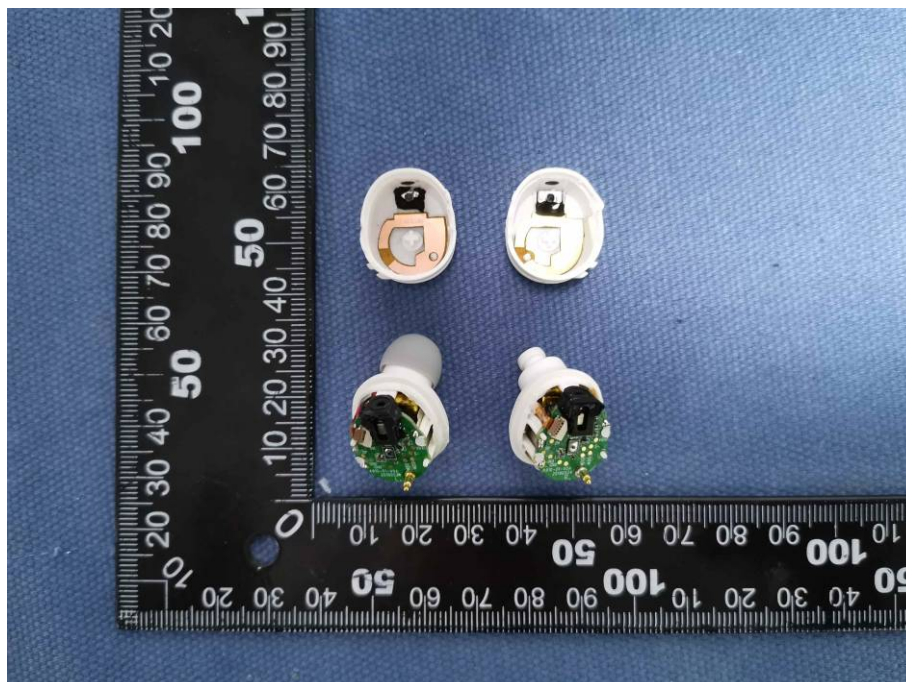
Only one model number: BIEFSTWS44, but it comes in three colors (black, white, blue)

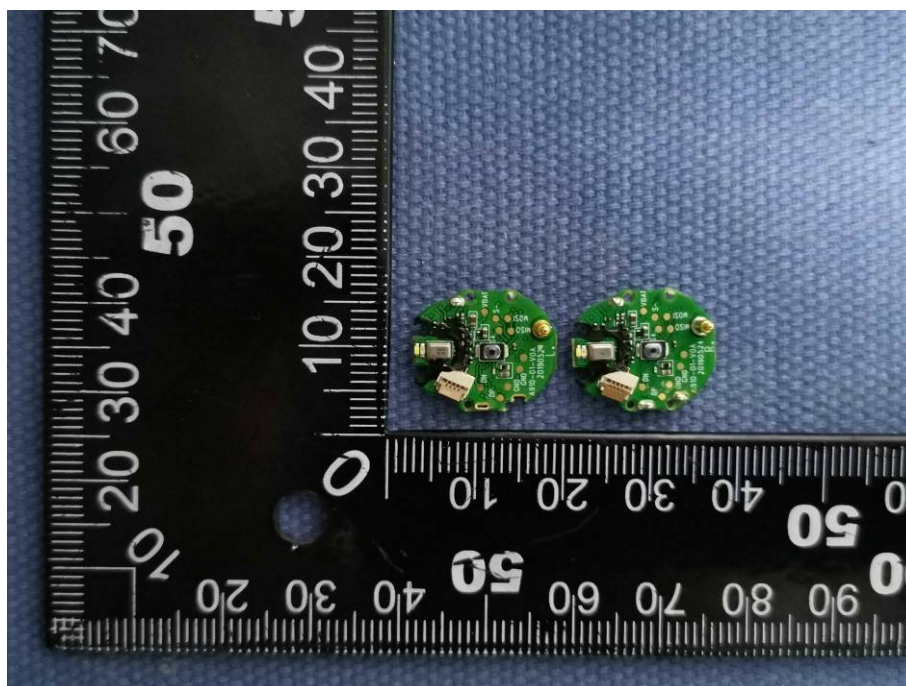
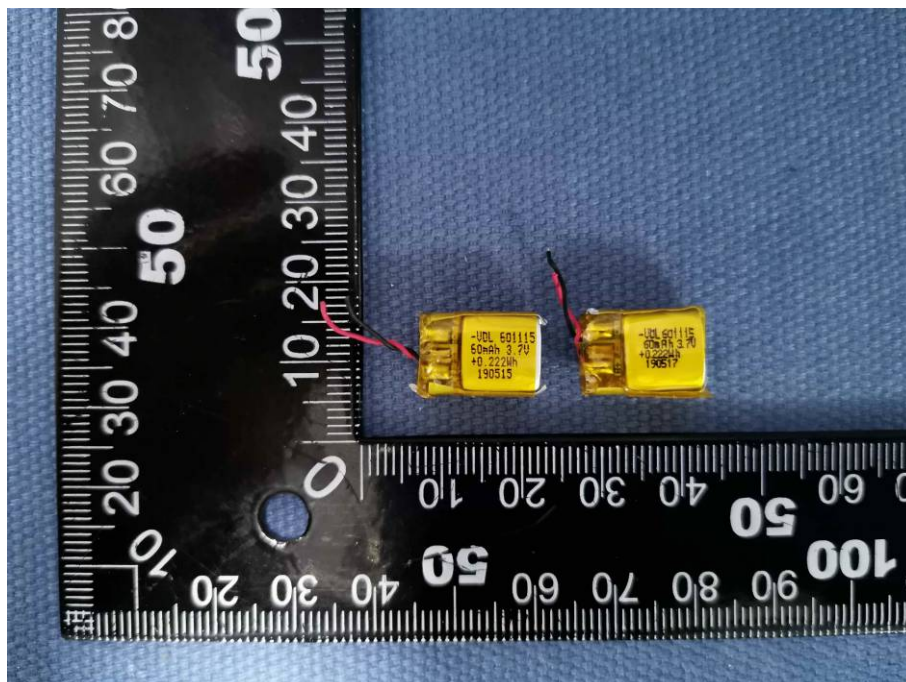


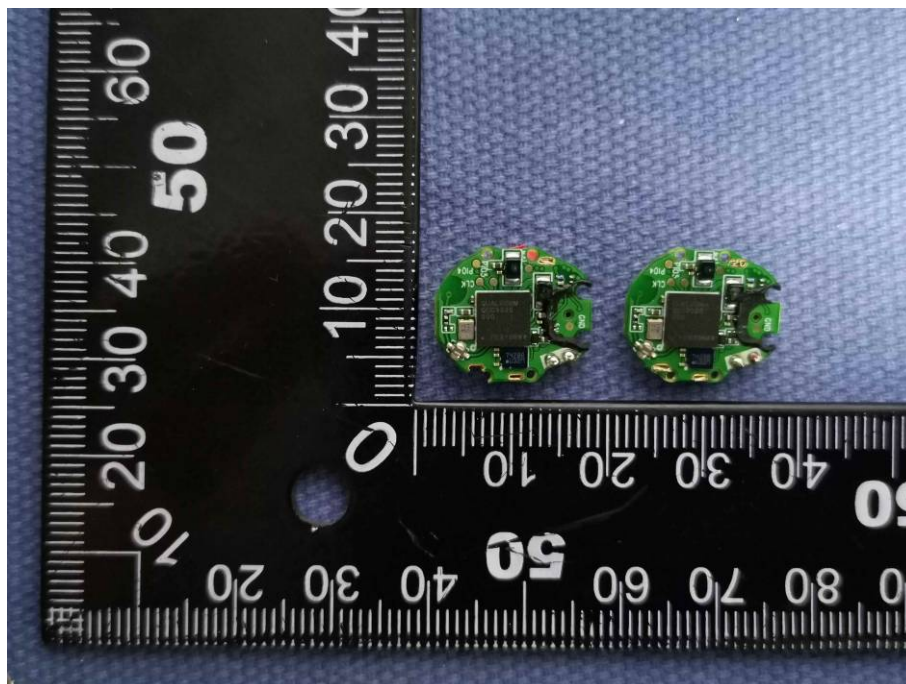












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