

SAR TEST EXCLUSION EVALUATION REPORT

Product Name: True Wireless Earbuds
Trade Mark: heyday
Model No./HVIN: TWS10
Add. Model No.: N/A
Report Number: 24050611177RFC-2
Test Standards: FCC 47 CFR Part 2.1093
FCC ID: 2AO23-TWS10
Test Result: PASS
Date of Issue: June 11, 2024

Prepared for:

Chug, Inc.

7157 Shady Oak Rd, Eden Prairie MN 55344, United States

Prepared by:

Shenzhen UnionTrust Quality and Technology Co., Ltd.
**Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng science and
technology park, Longhua district, Shenzhen, China**
TEL: +86-755-2823 0888
FAX: +86-755-2823 0886

Prepared by:

David Chen

David Chen
Senior Project Engineer

Reviewed by:

Robben chen

Robben Chen
Assistant Manager

Approved by:



Billy Li
Technical Director

Date:

June 11, 2024

Version

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1. GENERAL INFORMATION

1.1 CLIENT INFORMATION

Applicant:	Chug, Inc.
Address of Applicant:	7157 Shady Oak Rd, Eden Prairie MN 55344, United States
Manufacturer:	Hunan XuanTong Technology Co., Ltd.
Address of Manufacturer:	B2 Building, Standard Factory, Caojiapeng Four Phases, Baofeng Street, Shimen County, Changde City, Hunan Province, China.

1.2 EUT INFORMATION

Product Name:	True Wireless Earbuds	
Model No. /HVIN:	TWS10	
Add. Model No.:	N/A	
Trade Mark:	heyday	
DUT Stage:	Production Unit	
EUT Supports Function: (Provided by the customer)	2.4 GHz ISM Band:	Bluetooth 5.4
Software Version:	0.1.1 (Provided by the customer)	
Hardware Version:	Earphone: V1.0 (Provided by the customer)	
Note: The circuit diagram of the left ear and the right ear of the product are the same, but the PCB Layout is different.		

1.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD

For BT_EDR	
Frequency Band:	2400 MHz to 2483.5 MHz
Frequency Range:	2402 MHz to 2480 MHz
Bluetooth Version:	Bluetooth BR + EDR 5.4
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Type of Modulation:	GFSK, $\pi/4$ DQPSK, 8DPSK
Number of Channels:	79
Channel Separation:	1 MHz
Antenna Type:	Ceramic Antenna
Antenna Gain: (Provided by the customer)	2.7 dBi
Maximum Conducted Peak Power:	3.289 dBm

1.4 OTHER INFORMATION

Test channels for BT_EDR				
Mode	Tx/Rx Frequency	Test RF Channel Lists		
		Lowest(L)	Middle(M)	Highest(H)
GFSK (DH1, DH3, DH5)	2402 MHz to 2480 MHz	Channel 0	Channel 39	Channel 78
		2402 MHz	2441 MHz	2480 MHz
$\pi/4$ DQPSK (DH1, DH3, DH5)	2402 MHz to 2480 MHz	Channel 0	Channel 39	Channel 78
		2402 MHz	2441 MHz	2480 MHz
8DPSK (DH1, DH3, DH5)	2402 MHz to 2480 MHz	Channel 0	Channel 39	Channel 78
		2402 MHz	2441 MHz	2480 MHz

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng science and technology park, Longhua district, Shenzhen, China

Tel: +86-755-28230888

Fax: +86-755-28230886

E-mail: info@uttlab.com

<http://www.uttlab.com>

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1.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product, according to the specifications of the manufacturers. It must comply with the requirements of the following standards:

FCC 47 CFR Part 2.1093

All test items have been performed and recorded as per the above standards

1.6 DEVIATION FROM STANDARDS

None.

1.7 ABNORMALITIES FROM STANDARD CONDITIONS

None.

1.8 OTHER INFORMATION REQUESTED BY THE CUSTOMER

None.

2. EQUIPMENT LIST

Please refer to the RF test report.

3. SAR TEST EXCLUSION EVALUATION

3.1 REFERENCE DOCUMENTS FOR EVALUATION

No.	Identity	Document Title
1	FCC 47 CFR Part 2.1093	Radiofrequency radiation exposure evaluation: portable devices.
2	KDB 447498 D04	Interim General RF Exposure Guidance v01

3.2 EXEMPTION LIMITS FOR ROUTINE EVALUATION – SAR EVALUATION

3.2.1 SAR Test Exclusion Threshold

3.2.1.1 KDB 447498 D04

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table.

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)										
	5	10	15	20	25	30	35	40	45	50	
300	39	65	88	110	129	148	166	184	201	217	
450	22	44	67	89	112	135	158	180	203	226	
835	9	25	44	66	90	116	145	175	207	240	
1900	3	12	26	44	66	92	122	157	195	236	
2450	3	10	22	38	59	83	111	143	179	219	
3600	2	8	18	32	49	71	96	125	158	195	
5800	1	6	14	25	40	58	80	106	136	169	

3.2.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

3.3 MPE CALCULATION RESULTS

Note: For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

3.3.1 For BT

For BR+EDR function, operating at 2402MHz to 2480 MHz for GFSK, $\pi/4$ DQPSK, 8DPSK

3.3.1.1 Antenna Type:

Chain 0: Ceramic Antenna

3.3.1.2 Antenna Gain:

Chain 0: 2402MHz to 2480 MHz: 2.7dBi

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3.3.1.3 Results for FCC 47 CFR Part 2.1093

Operating Mode	Frequency	Tune-up Power (conducted average)	Tolerance	Antenna Gain	Calculated maximum EIRP		Separation Distance	SAR Test Exclusion Threshold
	(MHz)	(dBm)	(dBm)	(dBi)	(dBm)	(mW)	(mm)	(mW)
BR+EDR	2402-2480	0	1.5	2.7	4.2	2.630	5	3

So the transmitter complies with the RF exposure requirements and the SAR is not required.



APPENDIX 1 PHOTOS OF TEST SETUP

N/A

APPENDIX 2 PHOTOS OF EUT CONSTRUCTIONAL DETAILS

Refer to Appendix 2 for EUT external and internal Photos.

*** End of Report ***

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