SAR TEST EXCLUSION EVALUATION REPORT

Product Name:	active noise-canceling headphones
Trade Mark:	heyday
Model No. / HVIN:	ANC1
Add. Model No. / HVIN:	N/A
Report Number:	200630017RFC-3
Test Standards:	FCC 47 CFR Part 2.1093
FCC ID:	2AO23-ANC1
Test Result:	PASS
Date of Issue:	August 7, 2020

Prepared for:

Chug,Inc.

7157 Shady Oak Road Eden Prairie,Washington Minnesota United States

Prepared by:

Shenzhen UnionTrust Quality and Technology Co., Ltd.
16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China
TEL: +86-755-2823 0888
FAX: +86-755-2823 0886

Prepared by: Kieron Luo
Kieron Luo
Project Engineer

Reviewed by:
Kevin Liang
Assistant Manager

Approved by:
Billy Li
Technical Director

Date: August 7, 2020

Version

Version No.	Date	Description
V1.0	August 7, 2020	Original

CONTENTS

1. GENERAL INFORMATION

1.1 CLIENT INFORMATION

Applicant:	Chug,Inc..
Address of Applicant:	7157 Shady Oak Road Eden Prairie,Washington Minnesota United States
Manufacturer:	Cresyn Hanoi Co., Ltd.
Address of Manufacturer:	Dong Tho Industrial complex / Dong Tho Hamlet, Yen Phong District, Bac Ninh, Vietnam, Bac Ninh, Bac Ninh, Vietnam

1.2 EUT INFORMATION

Product Name:	active noise-canceling headphones	
Model No. / HVIN:	ANC1	
Add. Model No. / HVIN:	N/A	
Trade Mark:	heyday	
DUT Stage:	Production Unit	
EUT Supports Function:	2.4 GHz ISM Band	Bluetooth 5.0
Software Version:	V 1.0	
Hardware Version:	V 1.0	
Sample Received Date:	July 7, 2020	
Sample Tested Date:	July 8, 2020 to July 14, 2020	
Note: Interchangeable if PCBA conditions are the same.		

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
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Type of Modulation:	GFSK, π/4DQPSK, 8DPSK
Number of Channels:	79
Channel Separation:	1 MHz
Antenna Type:	PIFA Antenna
Antenna Gain:	-1.2 dBi
Maximum Peak Power:	5.45 dBm

For BT_LE	
Frequency Band:	2400 MHz to 2483.5 MHz
Frequency Range:	2402 MHz to 2480 MHz
Bluetooth Version:	Bluetooth LE
Type of Modulation:	GFSK
Number of Channels:	40
Channel Separation:	2 MHz
Antenna Type:	PIFA Antenna
Antenna Gain:	-1.2 dBi
Maximum Peak Power:	-2.06 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
π/4DQPSK (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

Test channels for BT_LE				
Type of Modulation	**Tx/Rx Frequency**	**Test RF Channel Lists**		
		Lowest(L)	**Middle(M)**	**Highest(H)**
GFSK	2402 MHz to 2480 MHz	Channel 0	Channel 19	Channel 39
		2402 MHz	2440 MHz	2480 MHz

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 D01 General RF Exposure Guidance v06	RF EXPOSURE PROCEDURES AND EQUIPMENT AUTHORIZATION POLICIES FOR MOBILE AND PORTABLE DEVICES

3.2 EXEMPTION LIMITS FOR ROUTINE EVALUATION – SAR EVALUATION

3.2.1 SAR Test Exclusion Threshold

3.2.1.1 KDB 447498 D01 v06

Appendix A

***SAR Test Exclusion Thresholds* for 100 MHz – 6 GHz and ≤ 50 mm**

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table. The equation and threshold in 4.3.1 must be applied to determine SAR test exclusion.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	*SAR Test Exclusion Threshold* (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	

MHz	30	35	40	45	50	mm
150	232	271	310	349	387	*SAR Test Exclusion Threshold* (mW)
300	164	192	219	246	274	
450	134	157	179	201	224	
835	98	115	131	148	164	
900	95	111	126	142	158	
1500	73	86	98	110	122	
1900	65	76	87	98	109	
2450	57	67	77	86	96	
3600	47	55	63	71	79	
5200	39	46	53	59	66	
5400	39	45	52	58	65	
5800	37	44	50	56	62	

Note: 10-g Extremity SAR Test Exclusion Power Thresholds are 2.5 times higher than the 1-g *SAR Test Exclusion Thresholds* indicated above. These thresholds do not apply, by extrapolation or other means, to occupational exposure limits.

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 BT_BR & EDR and BLE function, operating at 2402MHz to 2480 MHz for GFSK, π/4 DQPSK, 8DPSK

3.3.1.1 Antenna Type:

PIFA Antenna

3.3.1.2 Antenna Gain:

2402MHz to 2480 MHz: -1.2 dBi

3.3.1.3 Minimum contact distance:

The minimum contact distance is 5mm.

3.3.1.4 Results for FCC 47 CFR Part 2.1093

Operating Mode	Frequency	Tune-up Power (Average)	Tolerance	Maximum Tune-up Power		Separation Distance	SAR Test Exclusion Threshold
	(MHz)	(dBm)	(dBm)	(dBm)	(mW)	(mm)	(mW)
EDR	2402-2480	5.8	2	7.8	6.03	5	10
BLE	2402-2480	-2.0	2	0	1	5	10

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

APPENDIX 1 PHOTOS OF TEST SETUP

N/A

APPENDIX 1 PHOTOS OF EUT CONSTRUCTIONAL DETAILS

Refer to Appendix 2 for EUT external and internal Photos.

*** End of Report ***