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RF Exposure Evaluation Report

Report No.: Applicant: Address of Applicant: Equipment Under Test (EU EUT Name: Model No.: Test Model No.: Brand Name: FCC ID: Standards:	CQASZ20231202363E-02 WICKED AUDIO, INC 875 WEST 325 NORTH, LINDON, Utah 84042 United States T): Wicked Hum 500x 23BF09, WI-BTAPP500, WI-BTAPP501, WI-BTAPP502 WI-BTAPP500 N/A 2AFM7WI-BTAPP50X 47 CFR Part 1.1307
	47 CFR Part 2.1093 KDB447498 D04 Interim General RF Exposure Guidance v01
Date of Receipt:	2023-12-21
Date of Test:	2023-12-21 to 2024-01-04
Date of Issue:	2024-03-18
Test Result:	PASS*

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

Tested By:	lewis zhou
	(Lewis Zhou)
Reviewed By: _	Alex
-	(Alex Wang)
Approved By: _	Janos (Jack Ai)



The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date	
CQASZ20231202363E-02	Rev.01	Initial report	2024-03-18	



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3 General Information

3.1 Client Information

Applicant:	WICKED AUDIO, INC
Address of Applicant:	875 WEST 325 NORTH, LINDON, Utah 84042 United States
Manufacturer:	Topway EM Enterprise Ltd.
Address of Manufacturer:	8F., Block B, Building 6, Baoneng Science and technology park, Qingxiang RD., Qinghu Industrial Park, Longhua New District, Shenzhen, China 518109
Factory:	Topway EM Enterprise Ltd.
Address of Factory:	8F., Block B, Building 6, Baoneng Science and technology park, Qingxiang RD., Qinghu Industrial Park, Longhua New District, Shenzhen, China 518109

3.2 General Description of EUT

Product Name:	Wicked Hum 500x				
Model No.:	23BF09, WI-BTAPP500, WI-BTAPP501, WI-BTAPP502				
Test Model No.:	WI-BTAPP500				
Trade Mark:	N/A				
Software Version:	V1.0				
Hardware Version:	V0.1				
Power Supply:	Li-ion battery: DC 3.7V 300mAh, Charge by DC 5V for adapter				

3.3 General Description of BT

Operation Frequency:	2402MHz~2480MHz			
Modulation Type:	GFSK, π/4DQPSK			
Transfer Rate:	1Mbps/2Mbps			
Number of Channel:	79			
Product Type:	□ Mobile			
Antenna Type:	Monopole antenna			
Antenna Gain:	-3.51dBi			



4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Standard Requirement

447498 D04 Interim General RF Exposure Guidance v01

3.2. SAR Test Reduction Guidance

SAR test reduction procedures [Glossary] allow using a particular set of test data as representative of other, similar, test conditions. This may be applied for data within different test positions (e.g. body, head, extremity), wireless modes (e.g. Wi-Fi, cellular), and frequency bands. This test reduction process provides for the use of test data for one specific channel, while referencing to those data for demonstrating compliance in other required channels for each test position of an exposure condition, within the operating mode of a frequency band. This is limited specifically to when the reported 1-g or 10-g SAR for the mid-band or highest output power channel meets any of the following conditions.

4.1.2 Limits

SAR-based thresholds are derived based on frequency, power, and separation distance of the RF source. The formula defines the thresholds in general for either available maximum timeaveraged power or maximum time-averaged ERP, whichever is greater.

If the ERP of a device is not easily determined, such as for a portable device with a small form factor, the applicant may use the available maximum time-averaged power exclusively if the device antenna or radiating structure does not exceed an electrical length of λ /4.

As for devices with antennas of length greater than $\lambda/4$ where the gain is not well defined, but always less than that of a half-wave dipole (length $\lambda/2$), the available maximum time-averaged power generated by the device may be used in place of the maximum time-averaged ERP, where that value is not known.

The separation distance is the smallest distance from any part of the antenna or radiating structure for all persons, during operation at the applicable ERP. In the case of mobile or portable devices, the separation distance is from the outer housing of the device where it is closest to the antenna.

The SAR-based exemption formula of \S 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold Pth (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). Pth is given by Formula (B.2).



$$P_{\rm th} \,({\rm mW}) = \begin{cases} ERP_{20\,\rm cm} (d/20\,\rm cm)^x & d \le 20\,\rm cm \\ \\ ERP_{20\,\rm cm} & 20\,\rm cm < d \le 40\,\rm cm \end{cases}$$
(B.2)

where

$$x = -\log_{10}\left(\frac{60}{ERP_{20} \operatorname{cm}\sqrt{f}}\right)$$

and f is in GHz, d is the separation distance (cm), and ERP_{20cm} is per Formula (B.1). The example values shown in Table B.2 are for illustration only.

	Та	able B.	2—Ex	ample	Power	Thresh	holds (n	nW)	
				Dis	stance	(mm)			
13	-	10	10	20	2.5	20	2.5	10	а 10 а

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



4.1.3 EUT RF Exposure

1) For BT

Measurement Data

Channel	Conduct ed Peak Output Power (dBm)	EIRP (dBm)	ERP (dBm)	Maximum tune-up Power (mW)	Exclusion threshold (mW)
Lowest (2402MHz)	-5.13	-8.64	-10.79	0.08	
Middle (2441MHz)	-3.01	-6.52	-8.67	0.14	3.0
Highest (2480MHz)	-3.85	-7.36	-9.51	0.11	

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20231202363E-02

*** END OF REPORT ***