华夏准测

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RF Exposure Evaluation Report

Report No.:	CQASZ20240701276E-03
Applicant:	Ultimea Technology (Shenzhen) Limited
Address of Applicant:	20th Floor, Building 4, Tianan Cloud Park, Bantian St., Longgang District, Shenzhen, China
Equipment Under Test (EUT):	
EUT Name:	Aura A30 5.1 Channel Virtual Surround Soundbar
Model No.:	U2501
Test Model No.:	U2501
Brand Name:	ULTIMEA
FCC ID:	2A9OO-U2501S
Standards:	47 CFR Part 1.1307 47 CFR Part 1.1310 447498 D04 Interim General RF Exposure Guidance v01
Date of Receipt:	2024-07-03
Date of Test:	2024-07-03 to 2024-07-22
Date of Issue:	2024-07-30
Test Result:	**PASS***

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

Tested By: lewis zhou

(Lewis Zhou)

Reviewed By: Timo Lei

(Timo Lei)

Approved By: Alex

(Alex Wang)

SHENZHEN HUAXIA TESTING TECHNOLOGY CO., LTD
CQA 华夏准测
★APPROVED★

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20240701276E-03	Rev.01	Initial report	2024-07-30

2 Contents

3 General Information

3.1 Client Information

Applicant:	Ultimea Technology (Shenzhen) Limited
Address of Applicant:	20th Floor, Building 4, Tianan Cloud Park, Bantian St., Longgang District, Shenzhen, China
Manufacturer:	Ultimea Technology (Shenzhen) Limited
Address of Manufacturer:	20th Floor, Building 4, Tianan Cloud Park, Bantian St., Longgang District, Shenzhen, China
Factory:	SHENZHEN FENDA TECHNOLOGY CO., LTD.
Address of Factory:	Fenda Hi-Tech Park, Zhoushi Road, Shiyan Town, Baoan District, Shenzhen City, Guangdong, China

3.2 General Description of EUT

Product Name:	Aura A30 5.1 Channel Virtual Surround Soundbar
Model No.:	U2501
Test Model No.:	U2501
Trade Mark:	ULTIMEA
Software Version:	v2.5
Hardware Version:	U2X01-MD
EUT Power Supply:	Main speaker Adapter: Model:SMS-00240250-S38 Input:100-240V~50/60Hz 1.5A Output:24V 2.5A 60W
	Main speaker Adapter: Model:FX48U-240250C Input:100-240V~50/60Hz 1.0A Output:24V 2.5A 60W

3.3 General Description of BT Classic

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	Bluetooth Spec 5.3
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, π/4DQPSK, 8DPSK
Number of Channel:	79
Transfer Rate:	1Mbps/2Mbps/3Mbps
Hopping Channel Type:	Adaptive Frequency Hopping systems
Sample Type:	☒ Mobile ☐ Portable
Antenna Type:	PCB antenna
Antenna Gain:	1.95dBi
Cable loss:	1.0 dB

3.4 General Description of BLE

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	Bluetooth Spec 5.3
Modulation Type:	GFSK
Number of Channel:	40
Transfer Rate:	1Mbps
Sample Type:	☒ Mobile ☐ Portable
Antenna Type:	PCB antenna
Antenna Gain:	1.95dBi
Cable loss:	1.0 dB

Note：

The above parameters will directly affect the test results. The information is provided by the applicant.

4 MPE Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

The table applies to any RF source (i.e., single fixed, mobile, and portable transmitters) and specifies power and distance criteria for each of the five frequency ranges used for the MPE limits. These criteria apply at separation distances from any part of the radiating structure of at least λ/2π. The thresholds are based on the general population MPE limits with a single perfect reflection, outside of the reactive near-field, and in the main beam of the radiator.For mobile devices that are not exempt per Table B.1 [Table 1 of § 1.1307(b)(1)(i)(C)] at distances from 20 cm to 40 cm and in 0.3 GHz to 6 GHz, evaluation of compliance with the exposure limits in § 1.1310 is necessary if the ERP of the device is greater than ERP20cm inFormula (B.1) [repeated from § 2.1091(c)(1) and § 1.1307(b)(1)(i)(B)].

$$P_{\mathrm{th}}\ (\mathrm{mW}) = ERP_{20\ \mathrm{cm}}\ (\mathrm{mW}) = \begin{cases} 2040f & 0.3\ \mathrm{GHz} \le f < 1.5\ \mathrm{GHz} \\ 3060 & 1.5\ \mathrm{GHz} \le f \le 6\ \mathrm{GHz} \end{cases}$$

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i.e., without consideration of ERP only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of λ/4 or if the antenna gain is less than that of a half-wave Dipole.

SAR-based exemptions are constant at separation distances between 20 cm and 40 cm to avoid discontinuities in the threshold when transitioning between SAR-based and MPE-based exemption criteria at 40 cm, considering the importance of reflections.

4.1.2 Test Procedure

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

4.1.3 EUT RF Exposure

1) For BT Classic

Output Power Into Antenna & RF Exposure Evaluation Distance:

Measurement Data

Test channel	EIRP (dBm)	ERP (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)	Maximum tune-up Power (mW)
GFSK mode					
Lowest(2402MHz)	6.53	4.38	4.5±1	5.5	3.55
Middle(2441MHz)	5.32	3.17	3.0±1	4.0	2.51
Highest(2480MHz)	5.00	2.85	3.0±1	4.0	2.51
π/4DQPSK mode					
Lowest(2402MHz)	6.68	4.53	4.5±1	5.5	3.55
Middle(2441MHz)	5.34	3.19	3.0±1	4.0	2.51
Highest(2480MHz)	4.98	2.83	3.0±1	4.0	2.51
8DPSK mode					
Lowest(2402MHz)	6.48	4.33	4.5±1	5.5	3.55
Middle(2441MHz)	5.28	3.13	3.5±1	4.5	2.82
Highest(2480MHz)	5	2.85	3.0±1	4.0	2.51

The ERP of this product is less than 3060mW

Note: 1) Refer to report No. CQASZ20240701276E-01 for EUT test Max Conducted Peak Output Power value.

2) EUT's module is more than 20cm away from the human body.

2) For BLE

Output Power Into Antenna & RF Exposure Evaluation Distance:

Measurement Data

GFSK mode(1Mbps)					
Test channel	EIRP (dBm)	ERP (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)	Maximum tune-up Power (mW)
Lowest(2402MHz)	3.49	1.34	1.5±1	2.5	1.78
Middle(2440MHz)	1.99	-0.16	0±1	1.0	1.26
Highest(2480MHz)	2.12	-0.03	0±1	1.0	1.26

The ERP of this product is less than 3060mW

Note: 1) Refer to report No. CQASZ20240701276E-02 for EUT test Max Conducted Peak Output Power value.

2) EUT's module is more than 20cm away from the human body.

*** END OF REPORT ***