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# **RF Exposure Evaluation Report**

**Report No.:** CQASZ20240801785E-02

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:** Surround Speaker

Model No.: U2621, U2523, U2521

Test Model No.: U2621

Brand Name: ULTIMEA

 FCC ID:
 2A900-U2621D

 Standards:
 47 CFR Part 1.1307

47 CFR Part 1.1310

447498 D04 Interim General RF Exposure Guidance v01

**Date of Receipt:** 2024-08-22

**Date of Test:** 2024-08-22 to 2024-09-05

**Date of Issue:** 2024-09-14

Test Result: PASS\*

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

Tested By:

(Lewis Zhou)

Reviewed By:

(Timo Lei)

Approved By:

(Alex Wang)



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.



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# 1 Version

# **Revision History Of Report**

Report No.	Version	Description	Issue Date	
CQASZ20240801785E-02	Rev.01	Initial report	2024-09-14	





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# 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:	Zhong Shan City Richsound Electronic Industrial Ltd.
Address of Factory:	No.16, East Shagang Road, Gangkou, Zhongshan, Guangdong, China

# 3.2 General Description of EUT

Product Name:	Surround Speaker		
Model No.:	U2621, U2523, U2521		
Test Model No.:	U2621		
Trade Mark:	ULTIMEA		
Software Version:	0.1		
Hardware Version:	0.2		
EUT Power Supply:	MODEL NO.:FX24U-140100C1		
	INPUT:100-240V~50/60Hz 0.6A		
	OUTPUT:DC14V 1.0A		

# 3.3 General Description of BLE

Operation Frequency:	2402MHz~2480MHz		
Bluetooth Version:	Bluetooth Spec 5.4		
Modulation Type:	GFSK		
Number of Channel:	40		
Transfer Rate:	1Mbps/2Mbps		
Sample Type:	⊠ Mobile ☐ Portable		
Antenna Type:	PCB antenna		
Antenna Gain:	1.19 dBi		
Cable loss:	1.0 dB		

#### Note:

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



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### 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  $\lambda/2\pi$ . 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)].

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

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  $\lambda$  /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.



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### 4.1.3 EUT RF Exposure

#### **For BLE**

Output Power Into Antenna & RF Exposure Evaluation Distance:

#### **Measurement Data**

Measurement Data							
GFSK mode(1Mbps)							
Test channel	EIRP	ERP	Tune up tolerance	Maximum tune-up Power			
	(dBm)	(dBm)	(dBm)	(dBm)	(mW)		
Lowest(2402MHz)	2.27	0.12	0.5±1	1.5	1.41		
Middle(2440MHz)	1.7	-0.45	0±1	1	1.26		
Highest(2480MHz)	2.17	0.02	0.5±1	1.5	1.41		
	GFSK mode(2Mbps)						
Test channel	EIRP	ERP	Tune up tolerance	Maximum tune-up Power			
	(dBm)	(dBm)	(dBm)	(dBm)	(mW)		
Lowest(2402MHz)	2.15	0	0.5±1	1.5	1.41		
Middle(2440MHz)	1.67	-0.48	0±1	1	1.26		
Highest(2480MHz)	2.36	0.21	0.5±1	1.5	1.41		

The ERP of this product is less than 3060mW

Note: 1) Refer to report No. CQASZ20240801785E-01 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 \*\*\*