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Report Template Version: V04
Report Template Revision Date: 2018-07-06

RF Exposure Evaluation Report

Report No. :	CQASZ20210901513E-02
Applicant:	Dongguan Platinum Audio Systems Co., Ltd.
Address of Applicant:	6/F, Section 1 Building, No. 2 East Industry Road, Songshan Lake Sci.&Tech. Industry Park, Dongguan, Guangdong 523808, P.R. China
Equipment Under Test (EUT):	
Product:	COMBO AMPLIFIER
Model No.:	NANOBASS X4
Test Model No.	NANOBASS X4
Brand Name:	AIRPULSE, PHIL JONES BASS, pβ
FCC ID:	2ALUS-PLD01
Standards:	47 CFR Part 1.1307
	47 CFR Part 1.1310
	KDB447498D01 General RF Exposure Guidance v06
Date of Receipt:	2021-09-06
Date of Test:	2021-09-06 to 2021-09-14
Date of Issue:	2021-09-16
Test Result :	**PASS***

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

Tested By: lewis zhou

(Lewis Zhou)

Reviewed By: Rock Huang

(Rock Huang)

Approved By:

(Jack ai)

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

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20210901513E-02	Rev.01	Initial report	2021-09-16

2 Contents

3 General Information

3.1 Client Information

Applicant:	Dongguan Platinum Audio Systems Co., Ltd.
Address of Applicant:	6/F, Section 1 Building, No. 2 East Industry Road, Songshan Lake Sci.&Tech. Industry Park, Dongguan, Guangdong 523808, P.R. China
Manufacturer:	Dongguan Platinum Audio Systems Co., Ltd.
Address of Manufacturer:	6/F, Section 1 Building, No. 2 East Industry Road, Songshan Lake Sci.&Tech. Industry Park, Dongguan, Guangdong 523808, P.R. China
Factory:	Dongguan Edifier Technology Co., Ltd.
Address of Factory:	No.2 Gongyedong Road, Songshan Lake Sci&Tech Industry Park, Dongguan, Guangdong 523808, PR.China

3.2 General Description of EUT

Product Name:	COMBO AMPLIFIER
All Model No.:	NANOBASS X4
Test Model No.:	NANOBASS X4
Trade Mark:	AIRPULSE, PHIL JONES BASS, pβ
EUT Supports Radios application	BT : 2402-2480MHz
Hardware Version:	V1.0
Software Version:	V1.0
Power Supply:	100-240V AC 50/60Hz 50W
Product Type:	☐ Mobile ☐ Portable ☒ Fix Location
Test Software of EUT:	FCCAssist 2.4
Antenna Type:	PCB antenna
Antenna Gain:	-0.29dBi

4 RF Exposure Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f^2)	6
30–300	61.4	0.163	1.0	6
300–1500	.....	.....	f/300	6
1500–100,000	.....	.....	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f^2)	30
30–300	27.5	0.073	0.2	30
300–1500	.....	.....	f/1500	30
1500–100,000	.....	.....	1.0	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: Pd = (Pout*G)/(4* Pi * R^2)

Where

Pd = power density in mW/cm2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

Pd id the limit of MPE, 1 mW/cm2 . If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

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 Evaluation standalone operations

1) For BT Classic (for CSR chip)

Antenna Gain: -0.29 dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 0.935 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	7.270	7.5±1	8.5	7.079
Middle(2441MHz)	7.480	7.5±1	8.5	7.079
Highest(2480MHz)	7.930	8.0±1	9.0	7.943
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	9.490	9.5±1	10.5	11.220
Middle(2441MHz)	7.420	7.5±1	8.5	7.079
Highest(2480MHz)	10.110	10.0±1	11.0	11.220
8DPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	10.070	10.0±1	11.0	12.589
Middle(2441MHz)	7.460	7.5±1	8.5	7.079
Highest(2480MHz)	7.940	8.0±1	9.0	7.943

The worst case:

Maximum tune-up Power (mW)	**Antenna Gain (dBi)**	**Power Density at R = 20 cm (mW/cm^2)**	**Result**
12.589	-0.29	0.00234	PASS

Note: 1) Refer to report No. CQASZ20210901513E-01 for EUT test Max Conducted Peak Output Power value.

2) Pd = (Pout*G)/(4* Pi * R^2)=(12.589*0.935)/(4*3.1416*20^2)=0.00234