Radio Test Report

Report No.:CTA231205004H02

Issued for

Innovative Concepts and Design LLC

458 Florida Grove Road, Perth Amboy, New Jersey, 08861
USA

Product Name: Speaker

Brand Name: gemini

Model Name: GD-L215 PRO

Series Model(s): GD-215 PRO

FCC ID: 2AE6G-GD215PRO

Test Standards: FCC 47CFR §2.1091

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the ShenZhen CTA Test Services Co., Ltd.



Page 2 of 10 Report No.: CTA231205004H02

TEST REPORT

	CIT	GTIN	
	Applicant's Name	nnovative Concepts and Design LLC	
	Address 4	58 Florida Grove Road, Perth Amboy, N	New Jersey, 08861 USA
	Manufacturer's Name In	nnovative Concepts and Design LLC	
	Address 48	58 Florida Grove Road, Perth Amboy, N	New Jersey, 08861 USA
	Product Description		
	Product Name S	peaker	
C	Brand go	emini	
	Model Number G	D-L215 PRO	
	Series Model(s) G	D-215 PRO	
	Standards: F	CC 47CFR §2.1091 47498 D04 Interim General RF Exposu	re Guidance v01
	The test results presented in this r	report relate only to the object tested. To the written approval of the ShenZhen (his report shall not be
	Date of Test	:	
	Date of receipt of test item	: 10 Oct. 2023	
	Date (s) of performance of tests	: 10 Oct. 2023 ~ 01 Dec. 2023	
	Date of Issue	: 01 Dec. 2023	
	Test Result	: Pass	

CON CIA	Pass	
Testing Engineer :	Zoey Cow	
TATESTING	(Zoey Cao)	
Technical Manager :	Anny Wen	
	(Amy Wen)	CTA TESTING
Authorized Signatory:	Eric Wang	
	(Eric Wang)	

Page 3 of 10

Report No.: CTA231205004H02

TABLE OF CONTENTS

	1. GENERAL INFORMATION	TATES	5
	1.1 GENERAL DESCRIPTION OF THE EUT		5
	1.2 TEST FACTORY		10.00
	2. FCC 47CFR §2.1091 REQUIREMENT		7
	2.1 TEST STANDARDS		7
CIL	2.2 LIMIT		7
	2.3 TEST RESULT		10

		Page 4 of 10	Repo	ort No.: CTA231205004H0	
	ESTING	<u>Revision Hi</u>	<u>story</u>		
Rev.	Issue Date	Report No.	Effect Page	Contents	
00	01 Dec. 2023	CTA231205004H02	ALL	Initial Issue	

CALL

Report No.: CTA231205004H02 Page 5 of 10

1. GENERAL INFORMATION

Product Description Product Description Product Description Product Description Product Description Product Description Antenna gain: 3.3dBi Antenna Designation: Input: AC110V, 3.15A Output: +15V,-15V, 0.5A Hardware Version Product Description Advantage Speaker Deficit 2402 – 2480 MHz FFC FFC Antenna gain: 3.3dBi FFC Rating GD-L215-PRE-20230908.PCB	Product Name	Speaker	Speaker				
Series Model(s) GD-215 PRO Model Difference GD-L215 PRO have light effect, GD-215 PRO don't have effect Product Description The EUT is Speaker Operation Frequency: 2402 – 2480 MHz Modulation Type: GFSK(1Mbps), π/4-DQPSK(2Mbps) Antenna gain: 3.3dBi Antenna Designation: FPC Rating Input: AC110V, 3.15A Output: +15V,-15V, 0.5A Hardware Version GD-L215-PRE-20230908.PCB	Brand	gemini	gemini				
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Hardware Version GD-L215-PRE-20230908.PCB			FPC				
E TEST	Rating						
Software Version GD-115BT[GEMINI GD SERIES][2009041106]	Hardware Version	GD-L215-PRE-202					
	Software Version	GD-115BT[GEMIN	GD-115BT[GEMINI GD SERIES][2009041106]				

Page 6 of 10 Report No.: CTA231205004H02

1.2 TEST FACTORY

Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, CTATEST

Shenzhen, China

FCC test Firm Registration Number: 517856

IC test Firm Registration Number: 27890

IC CAB ID: CN0127 A2LA Certificate No.: 6534.01

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Page 7 of 10 Report No.: CTA231205004H02

2. FCC 47CFR §2.1091 REQUIREMENT

2.1 TEST STANDARDS

Follow the maximum permissible exposure (MPE) limits specified in 447498 D04 Interim General Radio Frequency Exposure Guidelines v01. The gain of the antenna used in the product was extracted from the supplied antenna data sheet and the maximum total power input to the antenna was also measured. Calculate the distance from the product to the MPE limit by the formula.

2.2 LIMIT

For single RF sources (i.e., any single fixed RF source, mobile device, or portable device, as defined in paragraph (b)(2) of this section): A single RF source is exempt if:

- (A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of Part 1.1307. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);
- (B) Or the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold Pth (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). Pth is given by:

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

Where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\ cm}\sqrt{f}}\right)$$
 and f is in GHz;

and

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

d = the separation distance (cm);

Page 8 of 10 Report No.: CTA231205004H02

(C) Or using below table and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP 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 (1.64 linear value).

	RF Source frequency (MHz)	Threshold ERP(watts)	
	0.3-1.34	1,920 R ² .	
	1.34-30	3,450 R ² /f ² .	TING
	30-300	3.83 R ² .	ESI"
	300-1,500	0.0128 R ² f.	
	1,500-100,000	19.2R ² .	
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Page 9 of 10 Report No.: CTA231205004H02

For multiple RF sources: Multiple RF sources are exempt if:

(A) The available maximum time-averaged power of each source is no more than 1 mW and there is a separation distance of two centimeters between any portion of a radiating structure operating and the nearest portion of any other radiating structure in the same device, except if the sum of multiple sources is less than 1 mW during the time-averaging period, in which case they may be treated as a single source (separation is not required). This exemption may not be used in conjunction with other exemption criteria other than those is paragraph (b)(3)(i)(A) of Part 1.1307. Medical implant devices may only use this exemption and that in paragraph (b)(3)(i)(A).

(B) in the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation.

$$\sum_{i=1}^{a} \frac{P_i}{P_{th,i}} + \sum_{j=1}^{b} \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^{c} \frac{Evaluated_k}{Exposure\ Limit_k} \le 1$$

Where:

a = number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(B) of Part 1.1307 for Pth, including existing exempt transmitters and those being added. b = number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(C) of Part 1.1307 for Threshold ERP, including existing exempt transmitters and those being added.

c = number of existing fixed, mobile, or portable RF sources with known evaluation for the specified minimum distance including existing evaluated transmitters.

Pi = the available maximum time-averaged power or the ERP, whichever is greater, for fixed, mobile, or portable RF source i at a distance between 0.5 cm and 40 cm (inclusive).

Pth,i = the exemption threshold power (Pth) according to paragraph (b)(3)(i)(B) of this section for fixed, mobile, or portable RF source i.

ERPj = the ERP of fixed, mobile, or portable RF source j.

ERPth,j = exemption threshold ERP for fixed, mobile, or portable RF source j, at a distance of at least $\lambda/2\pi$ according to the applicable formula of paragraph (b)(3)(i)(C) of Part 1.1307.

Evaluatedk = the maximum reported SAR or MPE of fixed, mobile, or portable RF source k either in the device or at the transmitter site from an existing evaluation at the location of exposure.

Exposure Limitk = either the general population/uncontrolled maximum permissible exposure (MPE) or specific absorption rate (SAR) limit for each fixed, mobile, or portable RF source k, as applicable from § 1.1310.

Page 10 of 10

Report No.: CTA231205004H02

2.3 TEST RESULT

Turn up

EST RESULT		
)	CTATES	ING
Mode	Detector	Turn up Power
ВТ	AV	0±1dBm

CTATE	RF Function	Frequency (GHz)	Separation distance (cm)	Max AVG Power (dBm)	Max Turn Up Power (dBm)	ANT Gain (dBi)	Max EIRP (dBm)	Max EIRP (W)	Limit (W)	Result
	BT	2.48	20	-0.5	1	3.3	4.3	0.003	0.7680	Pass
		CTA CTA				TESTING				

Note: 1. The Maxinum power is less than the limit, complies with the exemption requirements.

2. ERP=EIRP-2.15 CTATESTING

*****END OF THE REPORT***