

EMF TEST REPORT

Test Report No. : OT-25D-RWD-022
Reception No. : 2512004113
Applicant : CHIPSEN Inc.
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Manufacturer : CHIPSEN Inc.
Address : B225,B226,501 ho, M-CLUSTER, 17, Deogan-ro 104beon-gil, Gwangmyeongsi, Gyeonggi-do, 14353, South Korea
Type of Equipment : Wireless Communication Module
FCC ID. : 2APB6-BOT-CMA200
Model Name : BoT-CMA200
Multiple Model Name : N/A
Serial number : N/A
Total page of Report : 7 pages (including this page)
Date of Incoming : November 28, 2025
Date of issue : December 15, 2025

SUMMARY

The equipment complies with the regulation; **CFR §2.1093**

This test report only contains the result of a single test of the sample supplied for the examination.

It is not a generally valid assessment of the features of the respective products of the mass-production.

This test report is not associated with the accreditation granted by the Korean Laboratory Accreditation Scheme (KOLAS).



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CONTENTS

	Page
1. VERIFICATION OF COMPLIANCE	4
2. GENERAL INFORMATION.....	5
2.1 PRODUCT DESCRIPTION.....	5
2.2 ALTERNATIVE TYPE(S)/MODEL(S); ALSO COVERED BY THIS TEST REPORT.	5
3. EUT MODIFICATIONS.....	5
4. MAXIMUM PERMISSIBLE EXPOSURE	6
4.1 RF EXPOSURE CALCULATION	6
4.2 EUT DESCRIPTION.....	6
4.3 CALCULATED MPE SAFE DISTANCE FOR BLUETOOTH.....	7

Revision History

Rev. No.	Issue Report No.	Issued Date	Revisions	Section Affected
0	OT-25D-RWD-022	December 15, 2025	Initial Release	All

1. VERIFICATION OF COMPLIANCE

Applicant : CHIPSEN Inc.

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FCC ID : 2APB6-BOT-CMA200

Model Name : BoT-CMA200

Brand Name : -

Serial Number : N/A

Date : December 15, 2025

E.U.T. DESCRIPTION	Modular Transmitter, Wireless Communication Module
THIS REPORT CONCERNS	Original Grant
MEASUREMENT PROCEDURES	KDB 447498 D01 General RF Exposure Guidance v06
TYPE OF EQUIPMENT TESTED	Pre-Production
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	Certification
Modifications on the Equipment to Achieve Compliance	None

- . The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

2. GENERAL INFORMATION

2.1 Product Description

The CHIPSEN Inc., Model BoT-CMA200 (referred to as the EUT in this report) is a Wireless Communication Module.

The product specification described herein was obtained from product data sheet or user's manual.

DEVICE TYPE	Wireless Communication Module		
Temperature Range	-40 °C ~ +85 °C		
OPERATING FREQUENCY	2 402 MHz ~ 2 480 MHz		
MODULATION TYPE	GFSK for 1Mbps, $\pi/4$ -DQPSK for 2Mbps, 8-DPSK for 3Mbps		
RF OUTPUT POWER	Bluetooth	1 Mbps	17.95 dBm
		2 Mbps	12.38 dBm
		3 Mbps	12.85 dBm
NUMBER OF CHANNEL	79 Channels		
ANTENNA TYPE	Dipole Antenna		
ANTENNA GAIN	1.50 dBi		
ANTENNA TRANSMIT TYPE	1T1R		
List of each Osc. or crystal Freq.(Freq. $\geq$ 1 MHz)	40 MHz		
Rated Supply Voltage	DC 3.3 V		

2.2 Alternative type(s)/model(s); also covered by this test report.

-. None

3. EUT MODIFICATIONS

-. None

4. MAXIMUM PERMISSIBLE EXPOSURE

4.1 RF Exposure Calculation

According to the FCC rule 1.1310 table 1B, the limit for the maximum permissible RF exposure for an uncontrolled environment are $f/1500$ mW/cm² for the frequency range between 300 MHz and 1 500 MHz and 1.0 mW/cm² for the frequency range between 1 500 MHz and 100 000 MHz.

The electric field generated for a 1 mW/cm² exposure is calculated as follows:

$$E = \sqrt{(30 * P * G) / d}, \text{ and } S = E^2 / Z = E^2 / 377, \text{ because } 1 \text{ mW/cm}^2 = 10 \text{ W/m}^2$$

Where

S = Power density in mW/cm², Z = Impedance of free space, 377 Ω

E = Electric field strength in V/m, G = Numeric antenna gain, and d = distance in meter

Combining equations and rearranging the terms to express the distance as a function of the remaining variable

$$d = \sqrt{(30 * P * G) / (377 * 10 S)}$$

Changing to units of mW and cm, using $P \text{ (mW)} = P \text{ (W)} / 1\,000$, $d \text{ (cm)} = 0.01 * d \text{ (m)}$

$$d = 0.282 * \sqrt{(P * G) / S}$$

Where

d = distance in cm, P = Power in mW, G = Numeric antenna gain, and S = Power density in mW/cm²

4.2 EUT Description

Kind of EUT	Wireless Communication Module
Device Category	☐ Portable (< 20 cm separation) ☐ Mobile (> 20 cm separation) ☒ Others
Exposure Evaluation Applied	☒ MPE ☐ SAR ☐ N/A

4.3 Calculated MPE Safe Distance for Bluetooth

According to above equation, the following result was obtained.

Operating Freq. Band (MHz)	Operating Mode	Target Power W/tolerance (dBm)	Max tune up power		Antenna Gain		Safe Distance (cm)	Power Density (mW/cm ²) @ 20 cm Separation	Limit (mW/cm ²)
			(dBm)	(mW)	Log	Linear			
2 402 ~ 2 480	1 Mbps	17.95 ± 1.0	18.95	78.52	1.50	1.413	2.970	0.022 1	1
	2 Mbps	12.38 ± 1.0	13.38	21.78			1.564	0.006 1	1
	3 Mbps	12.85 ± 1.0	13.85	24.27			1.651	0.006 8	1

According to above table, for 2 402 ~ 2480 MHz Band(1 Mbps), safe distance,

$$D = 0.282 * \sqrt{(78.52 * 1.413)/1.00} = 2.97 \text{ cm.}$$

For getting power density at 20 cm separation in above table, following formula was used.

$$S = P * G / (4\pi * R^2) = 78.52 * 1.413 / (4 * \pi * 20^2) = 0.022 \text{ 1}$$

Where:

S = Power Density,

P = Power input to the external antenna (Output power from the EUT antenna port (dBm) – cable loss (dB)),

G = Gain of Transmit Antenna (linear gain), R = Distance from Transmitting Antenna