

RF Exposure Evaluation Report

Report Reference No...... : **MTEB25030006-H**

FCC ID..... : **2BMS3-CHECHIRPBOX**

Compiled by

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Date of issue..... : **Mar.03,2025**

Representative Laboratory Name.: **Shenzhen Most Technology Service Co., Ltd.**

Address..... : No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park,
Nanshan, Shenzhen, Guangdong, China.

Applicant's name..... : **chechirp LCC**

Address..... : 8 The Green.Suite B.Dover.Delaware.19901

Test specification/ Standard..... : **47 CFR Part 1.1307;47 CFR Part 1.1310**
KDB447498D01 General RF Exposure Guidance v06

TRF Originator..... : Shenzhen Most Technology Service Co., Ltd.

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Test item description..... : Chechirp box

Trade Mark..... : chechirp

Model/Type reference..... : Chechirp box

Listed Models : N/A

Modulation Type..... : b: DSSS ,CCK ; g/n: BPSK,QPSK,QAM
GFSK, $\pi/4$ DQPSK, 8DPSK

Operation Frequency..... : From 2412MHz~2462MHz
2402MHz to 2480MHz

Hardware Version..... V1.0

Software Version..... V1.5.8

Rating..... : DC 3.7V by Battery
DC 5V by USB Port

Result..... : **PASS**

TEST REPORT

Equipment under Test : Chechirp box

Model /Type : Chechirp box

Listed Models : N/A

Remark : N/A

Applicant : chechirp LCC

Address : 8 The Green.Suite B.Dover.Delaware.19901

Manufacturer : chechirp LCC

Address : 8 The Green.Suite B.Dover.Delaware.19901

Test Result:	PASS
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The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

1. Revision History

Revision	Issue Date	Revisions	Revised By
00	2025.03.03	Initial Issue	Alisa Luo

2. SAR Evaluation

2.1 RF Exposure Compliance Requirement

2.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

2.1.2 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: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$ Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

P_d is 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.

2.1.3 EUT RF Exposure**WIFI 2.4G**

802.11b			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2412MHz)	12.96	12.96 ± 1	13.96
Middle(2437MHz)	10.61	10.61 ± 1	11.61
Highest(2462MHz)	12.57	12.57 ± 1	13.57

802.11g			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2412MHz)	11.36	11.36 ± 1	12.36
Middle(2437MHz)	11.10	11.10 ± 1	12.1
Highest(2462MHz)	11.07	11.07 ± 1	12.07

802.11n(H20)			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2412MHz)	10.46	10.46 ± 1	11.46
Middle(2437MHz)	9.66	9.66 ± 1	10.66
Highest(2462MHz)	10.12	10.12 ± 1	11.12

802.11n(H40)			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2422MHz)	10.37	10.37 ± 1	11.37
Middle(2437MHz)	9.84	9.84 ± 1	10.84
Highest(2452MHz)	10.09	10.09 ± 1	11.09

WIFI 2.4G

Worst case: 802.11b						
Channel	Maximum tune-up Power (dBm)	Maximum tune-up Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
Lowest(2412MHz)	13.96	24.89	2.62	0.0091	1.0	Pass

Note: 1) Refer to report MTEB25030006-R1 for EUT test Max Conducted average Output Power value.

Note: 2) $P_d = (P_{out} * G) / (4 * \pi * R^2) = (24.89 * 1.83) / (4 * 3.1416 * 20^2) = 0.0091$

BT classic

GFSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	3.010	3.010 ± 1	4.01
Middle(2441MHz)	2.708	2.708 ± 1	3.708
Highest(2480MHz)	1.477	1.477 ± 1	2.477

$\pi/4$ DQPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	0.438	0.438 ± 1	1.438
Middle(2441MHz)	-0.141	-0.141 ± 1	0.859
Highest(2480MHz)	0.742	0.742 ± 1	1.742

8DPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	0.773	0.773 ± 1	1.773
Middle(2441MHz)	-0.352	-0.352 ± 1	0.648
Highest(2480MHz)	0.963	0.963 ± 1	1.963

Worst case: GFSK						
Channel	Maximum tune-up Power (dBm)	Maximum tune-up Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
Lowest(2402MHz)	4.01	2.52	2.62	0.00092	1.0	Pass

Note: 1) Refer to report MTEB25030006-R for EUT test Max Conducted average Output Power value.

Note: 2) $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2) = (2.52 \cdot 1.83) / (4 \cdot 3.1416 \cdot 20^2) = 0.00092$

Note: 3) EUT's Bluetooth module is more than 20cm away from the human body.

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