Certificate Number: 5055.02

MPE REPORT

Report No.: SRTC2021-9004(F)-21071202(I)

Product Name: 2.4Ghz WIFI+Bluetooth dual-mode module

Product Model: MHCWBT1P-IB

Applicant: Xiaomi Communications Co.,Ltd.

Manufacturer: Xiaomi Communications Co.,Ltd.

Specification: FCC Part §2.1091, §2.1093, §1.1307(b), §1.1310 (2019)

FCC ID: 2AFZZ

The State Radio_monitoring_center Testing Center (SRTC)

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CONTENTS

1 GENERAL INFORMATION

1.1 Notes of the test report

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1.2 Information about the testing laboratory

Company:	The State Radio_monitoring_center Testing Center (SRTC)
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1.3 Applicant's details

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Tel:	18327086899
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1.4 Manufacturer's details

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City:	Beijing
Country or Region:	China
Contacted person:	zhuhuafang
Tel:	18327086899
Email:	zhuhuafang@xiaomi.com

2 DESCRIPTION OF THE DEVICE UNDER TEST

2.1 Final Equipment Build Status

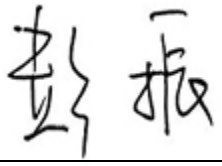
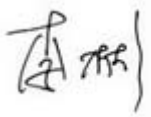
Frequency Bands	BT/BLE: 2.402GHz~2.480GHz WIFI2.4GHz: 2.412GHz~2.462GHz
Mode	BT:GFSK/π/4DQPSK/8DPSK BLE: GFSK (LE 1Mbps) WIFI2.4GHz: 802.11b/g/n HT20/n HT40
Power Supply	DC Adapter
Hardware Version	v1.1
Software Version	v1.0
IMEI or Sample	#1

3 REFERENCE SPECIFICATION

Specification	Version	Title
2.1091	2019	Radio frequency radiation exposure evaluation: mobile devices.
2.1093	2019	Radio frequency radiation exposure evaluation: portable devices.
1.1307(b)	2019	Actions that may have a significant environmental effect, for which Environmental Assessments (EAs) must be prepared.
1.1310	2019	Radio frequency radiation exposure limits.
KDB447498	October 23, 2015	RF exposure procedures and equipment authorization policies for mobile and portable devices

4 RESULT SUMMARY

No.	Test case	FCC reference
1	MPE Calculation	FCC Part §2.1091, FCC Part §2.1093, FCC Part §1.1307(b) FCC Part §1.1310 KDB 447498

This Test Report Is Issued by: Mr. Peng Zhen 	Checked by: Mr. Li Bin 
Tested by: Mr. Du Wei 	Issued date: 20210805

5 TEST RESULTS

5.1 Average Power Output Test Result

Bluetooth

Mode	Frequency(MHz)	Maximum Average power(dBm)
GFSK	2402	2.5
π4DQPSK	2402	2.0
8DPSK	2402	1.5

BLE

Mode	Frequency(MHz)	Maximum Average power(dBm)
GFSK(LE 1Mbps)	2402	0.5

WiFi 2.4GHz

Mode	Frequency(MHz)	Maximum Average power(dBm)
802.11b	2437	13.5
802.11g	2437	11.5
802.11n HT20	2437	11.0
802.11n HT40	2437	10.5

5.2 Calculation result

FCC LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

(A) Limits for Occupational/Controlled Exposure ☐

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm2)	Averaging Time |E|2, |H|2 or S (minutes)
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 ☑

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm2)	Averaging Time |E|2, |H|2 or S (minutes)
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 *Plane-wave equivalent power density

Calculation procedure:

According to §2.1091, §2.1093, §1.1307(b) and §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

The $S = PG / (4\pi R^2)$

Where S = power density in mW/cm^2

P = transmit power in mW

G = numeric gain of transmit antenna

R = distance (cm)

The calculations in the table below use the highest gain of antenna for client EUT. These calculations represent worst case in terms of the exposure levels.

Band	Freq. (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Average EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)	Power Density / Limit
BT	2402	2.52	2.5	5.02	3.18	0.006	1	0.006
BLE	2402	2.52	0.5	3.02	2.00	0.004	1	0.004
WiFi 2.4GHz (802.11b)	2437	2.52	13.5	16.02	39.99	0.079	1	0.079

---End of Test Report---