FCC RF EXPOSURE REPORT

Applicant	:	Guangzhou FiiO Electronics Technology Co., Ltd.
Address of Applicant	:	2/F, F Building, Hougang Industrial Zone, Shigang, Huangshi West Road, Baiyun District, Guangzhou, China
Manufacturer	:	Guangzhou FiiO Electronics Technology Co., Ltd.
Address of Manufacturer	:	2/F, F Building, Hougang Industrial Zone, Shigang, Huangshi West Road, Baiyun District, Guangzhou, China
Equipment under Test	:	Streaming media receiver
Model No.	:	F3081S, F3082S, F3083S, F3084S, F3085S, F3086S, F3087S, F3088S, F3089S, F4081S, F4082S, F4083S, F4084S, F4085S, F4086S, F4087S, F4088S, F4089S
FCC ID	:	R56-F30514
Test Standard(s)	:	KDB447498 D01 General RF Exposure Guidance v06
Report No.	:	DDT-RE24061713-2E11
Issue Date	:	2024/08/22
Issue By	:	Guangdong Dongdian Testing Service Co., Ltd.
Address of Laboratory	:	Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808

REPORT

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Test Report Declare

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Manufacturer	:	Guangzhou FiiO Electronics Technology Co., Ltd.
Address of Manufacturer	:	2/F, F Building, Hougang Industrial Zone, Shigang, Huangshi West Road, Baiyun District, Guangzhou, China

Standard Used: KDB447498 D01 General RF Exposure Guidance v06

We Declare:

The equipment described above is assessed by Guangdong Dongdian Testing Service Co., Ltd and in the configuration assessed the equipment complied with the standards specified above. The assessed results are contained in this report and Guangdong Dongdian Testing Service Co., Ltd is assumed of full responsibility for the accuracy and completeness of these assess.

After evaluation, our opinion is that the equipment In Accordance with above standard.

Report No.:	DDT-RE24061713-2E11		
Date of Receipt:	2024/06/25	**Date of Test:**	2024/06/25~2024/08/22

Prepared By:

Jacky Huang

Jacky Huang/Engineer

Approved By:

Damon Hu/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Guangdong Dongdian Testing Service Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	2024/08/22	

1. General Information

1.1. Description of equipment

EUT Name	:	Streaming media receiver
Model Number	:	F3081S, F3082S, F3083S, F3084S, F3085S, F3086S, F3087S, F3088S, F3089S, F4081S, F4082S, F4083S, F4084S, F4085S, F4086S, F4087S, F4088S, F4089S
Model Difference	:	Only the model name is different, any other is the same. The test model is F3081S.
EUT Function Description	:	Please reference user manual of this device
Power Supply	:	DC 5V powered by an external adapter
Radio Specification	:	Bluetooth (BR/EDR/LE), WLAN (2.4 GHz): IEEE 802.11b/g/n, WLAN (5 GHz): IEEE 802.11a/n/ac
Operation Frequency	:	Bluetooth (BR/EDR/LE): 2402 MHz-2480 MHz IEEE 802.11b/g/n: 2412 MHz to 2462 MHz, IEEE 802.11a/n/ac: 5180 MHz to 5240 MHz, 5260 MHz to 5320 MHz, 5500 MHz to 5720 MHz, 5745 MHz to 5825 MHz
Modulation	:	Bluetooth BR/EDR: GFSK, π/4-DQPSK, 8DPSK Bluetooth LE: GFSK IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g/a: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)

Note 1: EUT is the abbreviation of equipment under test.

Note 2: Simultaneously transmission condition: does not support Bluetooth, 2.4G WIFI, 5Gwifi any two or three wireless technologies transmit at the same time.

Note 3: Antenna information:

Antenna information		
Antenna Type		FPC
Antenna Gain (dBi)	BT	2.02
	2.4G WLAN	2.02
	5G WLAN	2.58
Note: This product does not support beamforming.		

1.2. Assess laboratory

Guangdong Dongdian Testing Service Co., Ltd.

Unit 2, Building 1, No.17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808

Tel.: +86-0769-38826678, http://www.dgddt.com, Email: ddt@dgddt.com.

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

VCCI facility registration number: C-20087, T-20088, R-20123, R-20155, G-20118

2. RF Exposure Evaluation

2.1. Requirement

Systems operating under the provisions of FCC 47 CFR 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.

In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.

Limits for General Population/Uncontrolled Exposure

(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/ cm^2)	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)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

2.2. Calculation method

$$E(V/m) = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power Density: } S(mW/cm^2) = \frac{E^2}{377}$$

E = Electric field (V/m)
P = Peak RF output power (mW)
G = EUT Antenna numeric gain (numeric)=
d = Separation distance between radiator and human body (m)
The formula can be changed to

We can change the formula to:

$$S = \frac{30 \times P \times G}{377 \times d^2} \quad \text{or, } d = \sqrt{\frac{30 \times P \times G}{377 \times S}}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2 m, as well as the gain of the used antenna, the RF power density can be obtained.

2.3. Estimation result

Mode	Output power (dBm)	tune up power (dBm)	tune up power (mW)	Antenna Gain (dBi)	Antenna Gain (linear)	MPE Values (mW/cm^2)	MPE Limit (mW/cm^2)
BT	6.04	7.00	5.01	2.02	1.59	0.002	1
BLE	6.09	7.00	5.01	2.02	1.59	0.002	1
2.4G WIFI	16.34	17.00	50.12	2.02	1.59	0.016	1
5G WIFI	11.37	12.00	15.85	2.58	1.81	0.006	1

Note:

1. The estimation distance is 20 cm
2. Does not support Bluetooth, 2.4G WIFI, 5Gwifi any two or three wireless technologies transmit at the same time.

Conclusion: MPE evaluation required since transmitter power is below FCC threshold.

END OF REPORT