

FCC SAR Exclusion Report

Report No. : SFBERD-WTW-P23010334

Applicant : Xiaomi Communications Co., Ltd.

Address : #019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

Product : Stylus for Tablet

Brand : Xiaomi

FCC ID : 2AFZZPIPA

Model No. : 23031MPADC

FCC Rule Part : CFR §2.1093

Standards : IEEE Std 1528:2013, KDB 865664 D01 v01r04, KDB 865664 D02 v01r02,
KDB 447498 D04 Interim General RF Exposure Guidance v01

Sample Received Date : Jan. 12, 2023

Date of Evaluation : Feb. 22, 2023

Lab Address : No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan


Test Location : No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City, Taiwan

CERTIFICATION: The above equipment have been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch – Lin Kou Laboratories**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's SAR characteristics under the conditions specified in this report. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product certification, approval, or endorsement by TAF or any government agencies.

Prepared By :


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FCC Accredited No.: TW0003

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Release Control Record

Issue No.	Reason for Change	Date Issued
SFBERD-WTW-P23010334	Initial release	Apr. 18, 2023

1. Summary of Maximum SAR Value

Mode	Highest Reported SAR _{10g} (W/kg)
Bluetooth	Not Required
Low Power Transmitter	Not Required

Note:

1. The SAR limit (**Head & Body: SAR_{1g} 1.6 W/kg**) for general population / uncontrolled exposure is specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992.

References Guidance : IEEE C95.1:1992

2. Description of Equipment Under Test

EUT Type	Stylus for Tablet
Brand Name	Xiaomi
FCC ID	2AFZZPIPA
Model Name	23031MPADC
Tx Frequency Bands (Unit: MHz)	Bluetooth : 2402 ~ 2480 Low Power Transmitter : 0.145
Uplink Modulations	Bluetooth : GFSK Low Power Transmitter : ASK
Maximum Tune-up Conducted Power (Unit: dBm)	Please refer to section 3.1 of this report
Antenna Type	Chip Antenna (Peak Antenna Gain : 2.1 dBi)
EUT Stage	Engineering Sample

Note:

1. The above EUT information is declared by manufacturer and for more detailed features description please refers to the manufacturer's specifications or User's Manual.

List of Accessory:

Battery	Brand Name	UTL
	Model Name	U56260
	Power Rating	3.7 VDC, 40mAh, 0.148Wh, 203Wh/L
	Type	Li-ion

3. SAR Measurement Evaluation

3.1 Maximum Output Power

The maximum conducted power (Unit: dBm) including tune-up tolerance is shown as below.

Bluetooth			
Mode	Channel	Frequency	Ant. 0 Max Tune-up
LE	0	2402	4.5
	19	2440	4.5
	39	2480	4.5

Low Power Transmitter		
Channel	Frequency	Ant. 0 Max Tune-up
1	0.145	-19.5

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3.2 SAR Testing Exclusions

According to KDB 447498 D04 Interim General RF Exposure Guidance v01, the SAR test exclusion condition is based on source-based time-averaged maximum conducted output power, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions. The SAR exclusion threshold is determined by the following formula.

1. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequency from 0.3 GHz to 6 GHz (inclusive).

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

Where

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

and

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

d = the separation distance (cm);

Frequency (MHz)	Antenna Gain (dBi)	Tune-up Power		Min. Distance to human Hand		
		Target Power (dBm)	ERP (dBm)	Ant. to Surface (mm)	Power Threshold (dBm)	Require SAR Testing?
2480	2.1	4.5	4.45	5	8.32	No

Note:

1. When the device output power is less than the power threshold shown in above table, the SAR testing exclusion is applied.
2. Units for d are cm and units for f are GHz.
3. The Power Threshold is scaling x2.5 factor for extremity exposure condition.
4. The maximum time-averaged power of Low Power Transmitter is no more than 1 mW in KDB 447498 D04 chapter 2.1.2_1-mW Test Exemption.

Summary:

Since the SAR testing for all device orientations apply SAR test exclusion per KDB 447498 D04 Interim General RF Exposure Guidance v01, SAR testing for this device is not required.

4. Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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The road map of all our labs can be found in our web site also.

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