

# FCC SAR Exclusion Report

Report No. : SABERD-WTW-P21060039

Applicant : Xiaomi Communications Co., Ltd.

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

Product : Xiaomi Smart Pen

Brand : Xiaomi

FCC ID : 2AFZZK81PC

Model No. : M2107K81PC

Standards : FCC 47 CFR Part 2 (2.1093), IEEE C95.1:1992, IEEE Std 1528:2013  
KDB 865664 D01 v01r04, KDB 865664 D02 v01r02  
FCC-19-126  
KDB 447498 D01 v06

Sample Received Date : Jun. 02, 2021

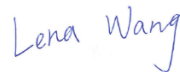
Date of Evaluation : Jul. 28, 2021

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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Approved By :



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## Table of Contents

Release Control Record .....	3
1. Summary of Maximum SAR Value .....	4
2. Description of Equipment Under Test .....	5
3. SAR Measurement Evaluation.....	6
3.1 Maximum Target Conducted Power .....	6
3.2 SAR Testing Exclusions .....	6
4. Information on the Testing Laboratories.....	7
 Appendix A. Maximum Target Conducted Power	



### Release Control Record

Issue No.	Reason for Change	Date Issued
SABERD-WTW-P21060039	Initial release	Jul. 29, 2021

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### 1. Summary of Maximum SAR Value

Equipment Class	Mode	Highest Reported SAR <sub>1g</sub> (W/kg)
DTS	Bluetooth	Not Required

**Note:**

1. The SAR limit (**Head & Body: SAR<sub>1g</sub> 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.

## 2. Description of Equipment Under Test

<b>EUT Type</b>	Xiaomi Smart Pen
<b>Brand Name</b>	Xiaomi
<b>FCC ID</b>	2AFZZK81PC
<b>Model Name</b>	M2107K81PC
<b>Tx Frequency Bands (Unit: MHz)</b>	Bluetooth : 2402 ~ 2480
<b>Uplink Modulations</b>	Bluetooth : GFSK
<b>Maximum Tune-up Conducted Power (Unit: dBm)</b>	Please refer to section 3.1 of this report
<b>Antenna Type</b>	Chip Antenna
<b>EUT Stage</b>	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.

### 3. SAR Measurement Evaluation

#### 3.1 Maximum Target Conducted Power

Refer to Appendix A.

#### 3.2 SAR Testing Exclusions

According to FCC-19-126, 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 frequencies 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);

When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Mode	Frequency (GHz)	Max. Tune-up Power (dBm)	Max. Tune-up Power (mW)	Loop Surface		
				Ant. to Surface (mm)	Exclusion (dBm)	Require SAR Testing?
BT	2.48	-4	0.4	5	4.34	No

**Note:**

1. When separation distance <= 50 mm and the calculated result shown in above table is <= 3.0, the SAR testing exclusion is applied.
2. When separation distance > 50 mm and the device output power is less than the calculated result (power threshold, mW) shown in above table, the SAR testing exclusion is applied.

**Summary:**

Since the SAR testing for all device orientations apply SAR test exclusion per KDB 447498, 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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