



TEST REPORT

REPORT NUMBER: I23W00025-MPE-FCC

ON

Type of Equipment: Cash Drawer Driver Trigger
Type of Designation: NC030
Manufacturer: Shanghai Sunmi Technology Co.,Ltd.
Brand Name: SUNMI
FCC ID: 2AH25NC030

ACCORDING TO

FCC CFR 47 Part 2.1091-2022

Chongqing Academy of Information and Communication Technology

Month date, year

Jul. 26, 2023

Signature

Xiang Luoyong

Director

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of Chongqing Academy of Information and Communications Technology.



Revision Version

Report Number	Revision	Date
I23W00025-MPE-FCC	00	2023-07-26



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Chongqing Academy of Information and Communication Technology

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Tel: 0086-23-88069965 FAX: 0086-23-88608777



1. Test Laboratory

1.1. Testing Location

Company Name:	Chongqing Academy of Information and Communications Technology
Designation Number:	CN1239
Address:	Building C, Technology Innovation Center, No.8, Yuma Road, Chayuan New Area, Nan'an District, Chongqing, People's Republic of China
Postal Code:	401336
Telephone:	0086-23-88069965
Fax:	0086-23-88608777

1.2. Testing Environment

Normal Temperature:	21.3°C
Relative Humidity:	65.0%

1.3. Project Data

Testing Start Date:	2023-07-26
Testing End Date:	2023-07-26

1.4. Signature

2023-07-26

Liu Qiuping
(Prepared this test report)

Date

2023-07-26

Yu Chun
(Reviewed this test report)

Date

2023-07-26

Xiang Luoyong
Director of the laboratory
(Approved this test report)

Date

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2. Client Information

2.1. Applicant Information

Company Name:	Shanghai Sunmi Technology Co.,Ltd.
Address /Post:	Room 505, No.388 Song Hu Road, Yang Pu District, Shanghai, China
Country:	CHINA
Telephone:	18826519551
Fax:	--
Email:	chenxuanfei@sunmi.com
Contact Person:	chenxuanfei

2.2. Manufacturer Information

Company Name:	Shanghai Sunmi Technology Co.,Ltd.
Address /Post:	Room 505, No.388 Song Hu Road, Yang Pu District, Shanghai, China
Country:	CHINA
Telephone:	18826519551
Fax:	--
Email:	chenxuanfei@sunmi.com
Contact Person:	chenxuanfei

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

EUT Description:	Cash Drawer Driver Trigger
Model name:	NC030
Brand name:	SUNMI
Frequency Band:	BLE
Type of modulation	GFSK
Note: Photographs of EUT are shown in ANNEX A of this test report.	

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
S1	MV01E35S00014	MAX_CashBox_BT_MB_V2.0	NA	2023-05-31

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE used during the test

EUT ID*	SN	Description
NA	NA	NA

*AE ID: is used to identify the test sample in the lab internally.

4. Reference Documents

4.1. Applicable Standards

The MPE report was carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Part 2.1091-2022.

FCC CFR 47 Part 2.1091-2022: Radio frequency radiation exposure evaluation: mobile devices

4.2. Test Limits

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 limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device.

MPE for the upper tier (people in controlled environments)

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 Exposure				
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
1500-100000	--	--	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
1500-100000	--	--	1.0	30

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

For the DUT, the limits for the general public when an RF safety program is unavailable.

5. Test Results

5.1. Tune Up Power and Antenna Gain

Frequency Band	Highest Averaged Tune Up Power(dBm)	Highest Frame-Averaged Tune Up Power (dBm)	Antenna Gain(dBi)
BLE	8.00	8.00	3.10

Notes:
 1) Disclaimers: The highest tune up power and antenna gain in the above table are provided by the customer

5.2. Calculation Information

For conservative evaluation consideration, only maximum power of each frequency band based on the tighter limits respectively are used to calculate the boundary power density.

Based on the FCC KDB 447498 D01 and 47 CFR §2.1091, the DUT is evaluated as a mobile device.

$$S = \frac{PG}{4\pi d^2}$$

Where

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

5.3. Results

Frequency range	Limit(mW/cm ²)	Results(mW/cm ²)	Verdict
BLE (2402MHz-2480MHz)	1.00	0.003	PASS



5.4. Result of BLE

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 2402 MHz~2480 MHz; The maximum conducted is 8.00 dBm. The maximum gain is 3.10 dBi. Therefore, maximum limit for general public RF exposure: 1 mW/cm².

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.003 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 1.00 mW/cm² limit for uncontrolled exposure.



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ANNEX A: EUT photograph

See the document “Cash Drawer Driver Trigger Photos”.

*****END OF REPORT*****

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