



TEST REPORT

No. I18D00189-SAR01

For

Client : Shanghai Sunmi Technology Co.,Ltd.

Production : POS System

Brand Name : SUNMI

Model Name : L1321/L1323

FCC ID: 2AH25T2MININFC

Hardware Version: V1.03

Software Version: MST2MINI_EQ000_2EE0.123BBE2.95307

62_180824_100_V01_T15

Issued date: 2018-12-26

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 ECIT Shanghai.

Test Laboratory:

ECIT Shanghai, East China Institute of Telecommunications

Add: 7F, G Area, No.668, Beijing East Road, Huangpu District, Shanghai, P. R. China

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Revision Version

Report Number	Revision	Date	Memo
I18D00189-SAR01	00	2018-12-24	Initial creation of test report
I18D00189-SAR01	01	2018-12-25	Second creation of test report
I18D00189-SAR01	02	2018-12-26	Third creation of test report

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1. Test Laboratory

1.1. Testing Location

Company Name:	ECIT Shanghai, East China Institute of Telecommunications
Address:	7-8F, G Area, No. 668, Beijing East Road, Huangpu District, Shanghai, P. R. China
Postal Code:	200001
Telephone:	(+86)-021-63843300
Fax:	(+86)-021-63843301
FCC Registration NO.:	489729

1.2. Project Data

Project Leader:	Zhou Yan
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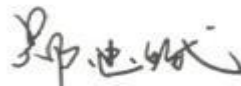
1.3. Signature



Yan Hang
(Prepared this test report)



Fu Erliang
(Reviewed this test report)



Zheng Zhongbin
(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name: Shanghai Sunmi Technology Co.,Ltd.
Address /Post: Room 505, KIC Plaza, No.388 Song Hu Road, Yang Pu District,
Shanghai, China
Telephone: 8618721763396

2.2. Manufacturer Information

Company Name: Shanghai Sunmi Technology Co.,Ltd.
Address /Post: Room 505, KIC Plaza, No.388 Song Hu Road, Yang Pu District,
Shanghai, China
Telephone: 8618721763396

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

3.1. About EUT

EUT Description	POS System
Model name	L1321/L1323
GSM Frequency Band	GSM850/1900
WCDMA Frequency Band	Band 2/5
CDMA Frequency Band	BC0
LTE TDD Frequency Band	Band 38/41
Wifi Frequency Band	802.11 b/g/n
BT Frequency Band	4.0
Antenna Type	External Antenna

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version:	Date of receipt
N01	N/A	V1.03	MST2MINI_E Q000_2EE0.1 23BBE2.9530 762_180824_ 100_V01_T15	2018.09.07

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

3.3. Internal Identification of AE used during the test

AE ID*	Description	Model	SN	Manufacturer
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*AE ID: is used to identify the test sample in the lab internally.

4. Reference Documents For FCC

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.

FCC CFR 47, Part 2, FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

Section 1.1310 Radiofrequency radiation exposure limits

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 0.2m normally can be maintained between the user and the device.

Limits for Occupational / Controlled Exposure

Frequency Range [MHz]	Electric Field Strength [V/m]	Magnetic Field Strength [A/m]	Power Density (S) [mW/cm ²]	Averaging Times E ² , H ² or S [minutes]
0.3 – 3.0	614	1.63	(100)*	6
3.0 – 30	1824/f	4.89/f	(900/f)*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	--	--	F/300	6
1500 - 100000	--	--	5	6

Limits for General Population / Uncontrolled Exposure

Frequency Range [MHz]	Electric Field Strength [V/m]	Magnetic Field Strength [A/m]	Power Density (S) [mW/cm ²]	Averaging Times 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 - 100000	--	--	1.0	30

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

For the DUT, the limits for General Population / Uncontrolled Exposure are applicable.

5. Test Results

5.1. RF Power Output

Frequency range	Max power(dBm)	Highest Frame-Averaged Output Power (dBm)	Antenna Gain (dBi)
GSM850	34	24.97	-0.91
GPRS 850	34	24.97	-0.91
EDGE 850	27	17.97	-0.91
GSM1900	30	20.97	1.68
GPRS 1900	30	20.97	1.68
EDGE 1900	26	16.97	1.68
WCDMA Band2	23	23	2.10
WCDMA Band5	24	24	-0.91
CDMA BC0	25	25	-0.91
LTE Band 38	23	23	2.95
LTE Band 41	23	23	2.95
WiFi	16	16	1.2
Bluetooth	2	2	1.2

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.

$$\text{Given } S = \frac{P \times G}{4\pi d^2} \quad \text{Equation 1}$$

Where

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

5.3. Power density calculations

Band	Frequency (MHz)	Highest Output Power (dBm)	Antenna Gain (dBi)	Numeric antenna gain	Power density at 20cm	Limit mW/cm ²
GSM850	824	24.97	-0.91	0.811	0.051	0.549
GSM1900	1850	20.97	1.68	1.472	0.037	1.0
WCDMA Band2	1852	23	2.10	1.622	0.064	1.0
WCDMA Band5	826	24	-0.91	0.811	0.041	0.55
CDMA BC0	824	25	-0.91	0.811	0.051	0.549
LTE Band38	2570	25	2.95	1.972	0.078	1.0
LTE Band41	2555	23	2.95	1.972	0.078	1.0
WiFi	2412	16	1.2	1.318	0.010	1.0
Bluetooth	2402	2	1.2	1.318	0.001	1.0

Note: For conservativeness, the lowest uplink frequency of each band is used to determine the MPE limit of that band

5.4. Calculations

The product is under the MPE limits. All is pass.

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