FCC TEST REPORT

For

EMV Android Validator

Model Number: FX925F PM, FX925F WM

FCC ID: 2AGQIFX925F

Report Number : WT198005845

Test Laboratory	:	Shenzhen Academy of Metrology and Quality Inspection
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TEST REPORT DECLARATION

Applicant	:	FAMOCO SAS
Address	:	59 avenue Victor Hugo Paris, France
Manufacturer	:	FAMOCO SAS
Address	:	59 avenue Victor Hugo Paris, France
EUT Description	:	EMV Android Validator
Model No	:	FX925F PM, FX925F WM
Trade mark	:	FAMOCO
FCC ID	:	2AGQIFX925F

Test Standards:

FCC Part 2.1091 (2018)

The EUT described above is tested by Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory to determine the maximum emissions from the EUT. Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory is assumed full responsibility for the accuracy of the test results.

The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

Project Engineer:	(Zhou Li 周立)	Date:	Nov 08, 2019
Checked by:	(Lin Yi Xiang 林奕翔)	Date:	Nov 08, 2019
Approved by:	(Lin Bin 林斌)	Date:	Nov 08, 2019

TABLE OF CONTENTS

1. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	Test Results
RF Exposure	Pass

Remark: “N/A” means “Not applicable.”

2. GENERAL INFORMATION

2.1. Report information

This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that SMQ approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that SMQ in any way guarantees the later performance of the product/equipment.

The sample/s mentioned in this report is/are supplied by Applicant, SMQ therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

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2.2. Laboratory Accreditation and Relationship to Customer

The testing report were performed by the Shenzhen Academy of Metrology and The testing report were performed by the Shenzhen Academy of Metrology and quality Inspection EMC Laboratory (Guangdong EMC compliance testing center), in their facilities located at NETC Building, No.4 Tongfa Rd., Xili, Nanshan, Shenzhen, China.

At the time of testing, Laboratory is accredited by the following organizations:

China National Accreditation Service for Conformity Assessment (CNAS) accredits the Laboratory for conformance to FCC standards, EMC international standards and EN standards. The Registration Number is CNAS L0579.

The Laboratory is Accredited Testing Laboratory of FCC with Designation number CN1165 and Site registration number 582918.

The Laboratory is registered to perform emission tests with Innovation, Science and Economic Development (ISED), and the registration number is 11177A.

3. PRODUCT DESCRIPTION

3.1. EUT Description

Table 2 Specification of the Equipment under Test

Product Type:	EMV Android Validator
Hardware Version:	FX925F,1
Software Version :	MOLY.LR12A.R2.MP.V44.1
FCC ID:	2AGQIFX925F
Frequency:	GSM850: TX 824MHz~849MHz RX 869MHz~894MHz PCS1900: TX 1850MHZ~1910MHz RX 1930MHz~1990MHz WCDMA 850: TX 824MHz~849MHz RX 869MHz~894MHz WCDMA 1900: TX 1850MHZ~1910MHz RX 1930MHz~1990MHz LTE Band 2: TX 1850MHZ~1910MHz RX 1930MHz~1990MHz LTE Band 4: TX: 1710MHz~1755MHz RX 2110MHz~2155MHz LTE Band 5: TX 824MHz~849MHz RX 869MHz~894MHz LTE Band 7: TX 2500MHz~2570MHz RX 2620MHz~2690MHz LTE Band 12: TX 698 ~ 716 MHz RX 728 ~ 746MHz LTE Band 13: TX 777 ~ 787 MHz RX 746 ~ 756MHz

	LTE Band 17: TX 704 ~ 716 MHz RX 734 ~ 746MHz LTE Band 38: TX: 2572.5MHz~2610MHz RX 2572.5MHz~2610MHz LTE Band 41: TX: 2498.5MHz~2680MHz RX 2498.5MHz~2680MHz
Type(s) of Modulation:	DSSS (DBPSK, DQPSK, CCK) for 802.11b OFDM (BPSK, QPSK, 16QAM, 64QAM) for 802.11a/g/n OFDM (BPSK, QPSK, 16QAM, 64QAM，256QAM) for 802.11ac Bluetooth：GFSK, pi/4-DQPSK, 8DPSK GSM850/PCS1900 :GMSK 8PSK WCDMA:QPSK LTE:QPSK, 16QAM
Antenna Type:	2G/3G/4G : Fixed External antenna 2.4G WiFi PIFA antenna 1.5dBi 5G WiFi PIFA antenna 1.3dBi 698MHz~800MHz: -0.4dBi 824MHz~849MHz: -1.0dBi 1710MHz~1780MHz: 0.45dBi 1850MHZ~1910MHz: 0.46dBi 2500MHz~2570MHz: 1.17dBi
Operating voltage:	DC 12V

Remark: FX925 PM compared with FX925 WM, only have different model number and appearance. All of the models' circuit theory, electrical design and the Critical Components are the same. The differences do not affect the RF performance. Unless otherwise specified, the model FX925 PM was chosen as representative model to perform all the tests.

4. RF EXPOSURE

4.1. LIMIT FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

This product can be classified as mobile device, so the 20cm separation distance warning is required. In this section, the power density at 20cm location is calculated to examine if it is lower than the limit.

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time (minutes)
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
1500–100,000	/	/	1.0	30

4.2. MPE Calculation Method

Power Density: Pd(Mw/cm^2)=P*G /4Pid^2

P=Peak RF output power (mW)

G=EUT Antenna numeric gain (numeric)

Pi=3.14

d=Separation distance between radiator and human body (cm)

4.3. CALCULATED RESULT

GSM850:

P=32.75 (1 Tx slot average power:32.75, all 8 slot, duty cycle:1/2 max:739.6mW)

G=-1.0dBi (numeric: 0.79)

d=20cm

1Tx slot: Pd=235*0.79/4*3.14*400=0.040<850/1500

8Tx slot: Pd=370*0.79/4*3.14*400=0.093<850/1500

PCS1900

P=30.27 (1 Tx slot average power:30.58, all 8 slot, duty cycle:1/2 max:467mW)

G=0.46dBi (numeric:1.11)

d=20cm

1Tx slot: Pd=143*1.11/4*3.14*400=0.032<1

8Tx slot: Pd=235*1.11/4*3.14*400=0.052<1

WCDMA Band V:

P=22.78 (max:218mW)

G=-1.0dBi (numeric: 0.79)

d=20cm

Pd=218*0.79/4*3.14*400=0.034<850/1500

WCDMA Band II

P=22.26 (max:168.3mW)

G=0.46dBi (numeric: 1.11)

d=20cm

Pd=168.3*1.11/4*3.14*400=0.037<1

LTE Band 2

P=23.68 (max:233mW)

G=0.46dBi (numeric: 1.11)

d=20cm

Pd=233*1.11/4*3.14*400=0.051<1

LTE Band 4

P=23.31 (max:214.3mW)

G=0.45dBi (numeric: 1.11)

d=20cm

Pd=214.3*1.11/4*3.14*400=0.047<1

LTE Band 5

P=23.70 (max:234.4mW)

G=-1.0dBi (numeric: 0.79)

d=20cm

Pd=234.4*0.79/4*3.14*400=0.037<850/1500

LTE Band 7

P=21.12 (max:129.4mW)

G=1.17dBi (numeric: 1.31)

d=20cm

Pd=129.4*1.31/4*3.14*400=0.034<1

LTE Band 12

P=23.74 (max:236.5mW)

G=-0.4dBi (numeric: 0.91)

d=20cm

Pd=236.5*0.91/4*3.14*400=0.042<707.5/1500

LTE Band 13

P=24.25 (max:266mW)

G=-0.4dBi (numeric: 0.91)

d=20cm

Pd=266*0.91/4*3.14*400=0.048<782/1500

LTE Band 17

P=23.75 (max:237mW)

G=-0.4dBi (numeric: 0.91)

d=20cm

Pd=237*0.91/4*3.14*400=0.043<710/1500

LTE Band 38

P=23.36 (max:216.8mW)

G=1.17dBi (numeric: 1.31)

d=20cm

Pd=216.8*1.31/4*3.14*400=0.057<710/1500

LTE Band 41

P=23.39 (max:218.2mW)

G=1.17dBi (numeric: 1.31)

d=20cm

Pd=218.2*1.31/4*3.14*400=0.057<710/1500

WLAN 802.11b

P=17.94dBm (max: 62.2mW)

G=1.5dBi (numeric: 1.41)

d=20cm

Pd=62.2*1.41/4*3.14*400=0.017<1

WLAN 802.11g

P=20.15dBm (max: 103.5mW)

G=1.5dBi (numeric: 1.41)

d=20cm

Pd=103.5*1.41/4*3.14*400=0.029<1

WLAN 802.11a

P=8.44dBm (max: 6.98mW)

G=1.3dBi (numeric: 1.35)

d=20cm

Pd=6.98*1.35/4*3.14*400=0.002<1

WLAN 802.11n HT20

P=20.19dBm (max: 104.4mW)

G=1.5dBi (numeric: 1.41)

d=20cm

Pd=104.4*1.41/4*3.14*400=0.029<1

WLAN 802.11n HT40

P=20.31dBm (max: 107.4mW)

G=1.5dBi (numeric: 1.41)

d=20cm

Pd=107.4*1.41/4*3.14*400=0.030<1

BT

P=8.21dBm (max: 6.62mW)

G=1.5dBi (numeric: 1.41)

d=20cm

Pd=6.62*1.41/4*3.14*400=0.002<1

GSM+WIFI=0.093+0.03=0.123<1

WCDMA+WIFI=0.037+0.03=0.067<1

LTE+WIFI=0.057+0.03=0.087<1

GSM+BT=0.093+0.002=0.095<1

WCDMA+ BT =0.037+0.002=0.039<1

LTE+ BT =0.057+0.002=0.059<1

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