

APPLICATION CERTIFICATION FCC Part 15B
On Behalf of
Guangzhou JEPOWER Electronic Technology Development Co., Ltd.

Android multi-functional payment terminal
Model No.: JP762A

FCC ID: 2ACFA-JP762A

Prepared for : Guangzhou JEPOWER Electronic Technology Development
Co., Ltd.
Address : 8th Floor, No. 1025, National Software Industry Base,
Gaopu Road, Tianhe District, Guangzhou, China

Prepared by : ACCURATE TECHNOLOGY CO. LTD
Address : F1, Bldg. A, Changyuan New Material Port, Keyuan Rd.
Science & Industry Park, Nanshan, Shenzhen, Guangdong
P.R. China

Tel: (0755) 26503290
Fax: (0755) 26503396

Report Number : ATE20140725
Date of Test : May 8-15,2014
Date of Report : May 16,2014

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Test Report Certification

Applicant : Guangzhou JEPOWER Electronic Technology Development Co., Ltd.
Manufacturer : Guangzhou JEPOWER Electronic Technology Development Co., Ltd.
EUT Description : Android multi-functional payment terminal
(A) MODEL NO.: JP762A
(B) SERIAL NO.: N/A
(C) POWER SUPPLY: DC 3.7V (Battery) or AC 120V (Adapter)

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart B ANSI C63.4: 2009

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test : May 8-15,2014

Prepared by :



(Eric, Engineer)

Approved & Authorized Signer :



(Sean Liu, Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT	:	Android multi-functional payment terminal
Model Number	:	JP762A
Power Supply	:	DC 3.7V (Battery) or AC 120V (Adapter)
Adapter	:	Model number: HKA06012050-7C Input: AC 100-240V; 50/60Hz 1.5A Output: DC 12V/5.0A line: Non-shielded, Non-detachable, 1.8m
Highest operation frequency of the EUT:	:	1.4GHz
Applicant	:	Guangzhou JEPOWER Electronic Technology Development Co., Ltd.
Address	:	8th Floor, No. 1025, National Software Industry Base, Gaopu Road, Tianhe District, Guangzhou, China
Manufacturer	:	Guangzhou JEPOWER Electronic Technology Development Co., Ltd.
Address	:	8th Floor, No. 1025, National Software Industry Base, Gaopu Road, Tianhe District, Guangzhou, China
Date of sample received	:	May 8, 2014
Date of Test	:	May 8-15, 2014

1.2. Accessory and Auxiliary Equipment

PC	Manufacturer: LENOVO
	M/N: 4290-RT8
	S/N: R9-FW93G 11/08

1.3. Description of Test Facility

EMC Lab	: Accredited by TUV Rheinland Shenzhen
	Listed by FCC
	The Registration Number is 752051
	Listed by Industry Canada
	The Registration Number is 5077A-2
	Accredited by China National Accreditation Committee for Laboratories
	The Certificate Registration Number is L3193
Name of Firm	: ACCURATE TECHNOLOGY CO. LTD
Site Location	: F1, Bldg. A, Changyuan New Material Port, Keyuan Rd. Science & Industry Park, Nanshan, Shenzhen, Guangdong P.R. China

1.4. Measurement Uncertainty

Conducted Emission Expanded Uncertainty	=	2.23dB, k=2
Radiated emission expanded uncertainty (9kHz-30MHz)	=	3.08dB, k=2
Radiated emission expanded uncertainty (30MHz-1000MHz)	=	4.42dB, k=2
Radiated emission expanded uncertainty (Above 1GHz)	=	4.06dB, k=2

2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

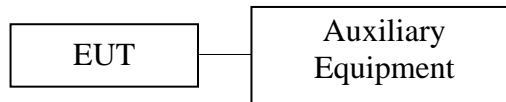
Kind of equipment	Manufacturer	Type	S/N	Calibrated date	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 11, 2014	Jan. 10, 2015
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 11, 2014	Jan. 10, 2015
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 11, 2014	Jan. 10, 2015
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 11, 2014	Jan. 10, 2015
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 15, 2014	Jan. 14, 2015
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 15, 2014	Jan. 14, 2015
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 15, 2014	Jan. 14, 2015
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 15, 2014	Jan. 14, 2015
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 11, 2014	Jan. 10, 2015
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 11, 2014	Jan. 10, 2015

3. OPERATION OF EUT DURING TESTING

3.1.Operating Mode

The modes are used: 1) Operation

3.2.Configuration and peripherals



(EUT: Android multi-functional payment terminal)

4. TEST PROCEDURES AND RESULTS

FCC Rules	Description of Test	Result
Section 15.107	Conducted Emission Test	Compliant
Section 15.109	Radiated Emission Test	Compliant

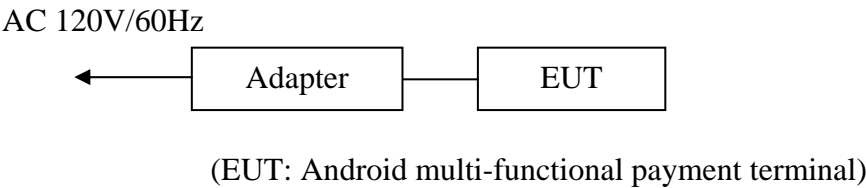
5. CONDUCTED EMISSION FOR FCC PART 15 SECTION

15.107(A)

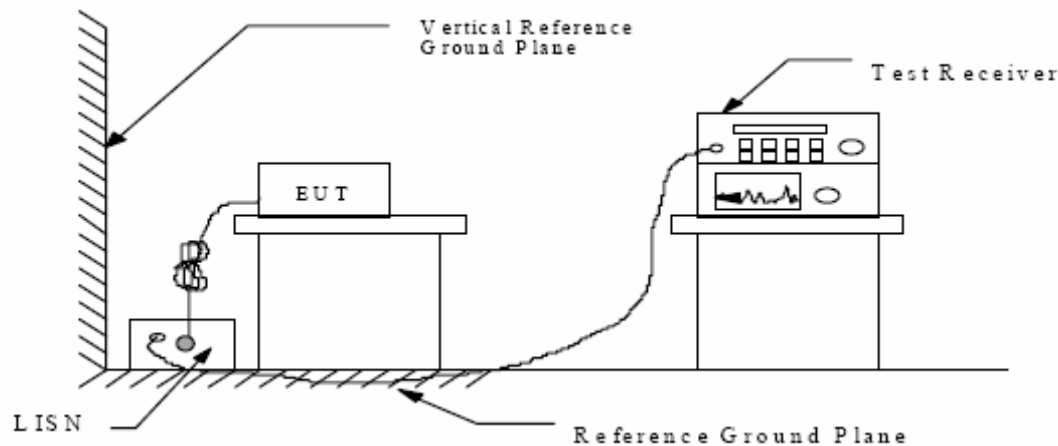
5.1. Block Diagram of Test Setup

5.1.1. Block diagram of connection between the EUT and simulators

5.1.1.1. For Transfer data



5.1.2. Shielding Room Test Setup Diagram



(EUT: Android multi-functional payment terminal)

5.2.The Emission Limit

5.2.1.Conducted Emission Measurement Limits According to Section 15.107(a)

Frequency (MHz)	Limit dB(μV)	
	Quasi-peak Level	Average Level
0.15 - 0.50	66.0 – 56.0 *	56.0 – 46.0 *
0.50 - 5.00	56.0	46.0
5.00 - 30.00	60.0	50.0

* Decreases with the logarithm of the frequency.

5.3.Configuration of EUT on Measurement

The following equipment are installed on the Conducted Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

5.3.1.Android multi-functional payment terminal (EUT)

Model Number : JP762A
 Serial Number : N/A
 Manufacturer : Guangzhou JEPOWER Electronic Technology Development Co., Ltd.

5.4.Operating Condition of EUT

5.4.1.Setup the EUT and simulator as shown as Section 5.1.

5.4.2.Turn on the power of all equipment.

5.4.3.Let the EUT work in modes (Operation) and measure it.

5.5.Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2009 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

5.6. Power Line Conducted Emission Measurement Results

PASS.

The frequency range from 150kHz to 30MHz is checked.

Test mode : Operation								
MEASUREMENT RESULT: "RY0514-3_fin"								
2014-5-14 15:53								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.523095	47.10	12.5	56	8.9	QP	L1	GND	
0.958007	35.40	12.4	56	20.6	QP	L1	GND	
13.532985	38.60	12.1	60	21.4	QP	L1	GND	
MEASUREMENT RESULT: "RY0514-3_fin2"								
2014-5-14 15:53								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.510708	37.00	12.5	46	9.0	AV	L1	GND	
1.054384	30.10	12.4	46	15.9	AV	L1	GND	
19.213335	24.40	12.1	50	25.6	AV	L1	GND	
MEASUREMENT RESULT: "RY0514-4_fin"								
2014-5-14 15:55								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.530988	46.50	12.5	56	9.5	QP	N	GND	
1.014113	36.90	12.4	56	19.1	QP	N	GND	
13.492507	39.50	12.1	60	20.5	QP	N	GND	
MEASUREMENT RESULT: "RY0514-4_fin2"								
2014-5-14 15:55								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.527817	39.00	12.5	46	7.0	AV	N	GND	
1.014113	28.40	12.4	46	17.6	AV	N	GND	
19.213335	31.80	12.1	50	18.2	AV	N	GND	

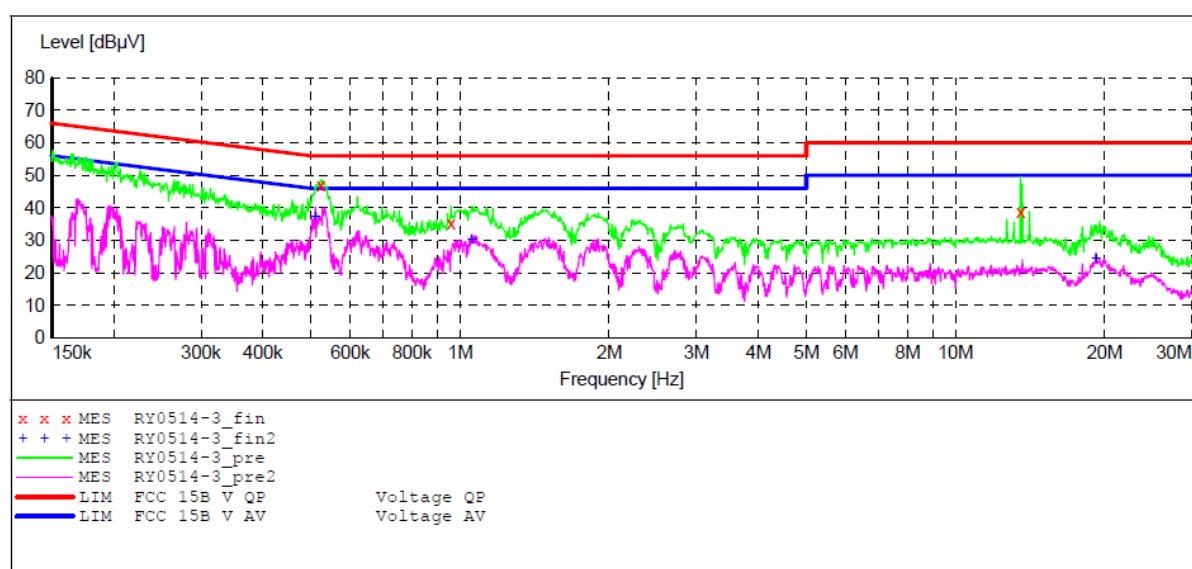
Emissions attenuated more than 20 dB below the permissible value are not reported.
The spectral diagrams are attached as below.

ACCURATE TECHNOLOGY CO.,LTD**CONDUCTED EMISSION STANDARD FCC PART 15B**

EUT: Android multi-functional payment terminal M/N:JP762A
 Manufacturer: JEPOWER
 Operating Condition: Operation
 Test Site: 2#Shielding Room
 Operator: Ricky
 Test Specification: L 120V/60Hz
 Comment: Report NO.:ATE20140725
 Start of Test: 2014-5-14 / 15:51:42

SCAN TABLE: "V 150K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 0.4 % QuasiPeak 1.0 s 9 kHz LISN (ESH3-Z5)
 Average

**MEASUREMENT RESULT: "RY0514-3_fin"**

2014-5-14 15:53

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.523095	47.10	12.5	56	8.9	QP	L1	GND
0.958007	35.40	12.4	56	20.6	QP	L1	GND
13.532985	38.60	12.1	60	21.4	QP	L1	GND

MEASUREMENT RESULT: "RY0514-3_fin2"

2014-5-14 15:53

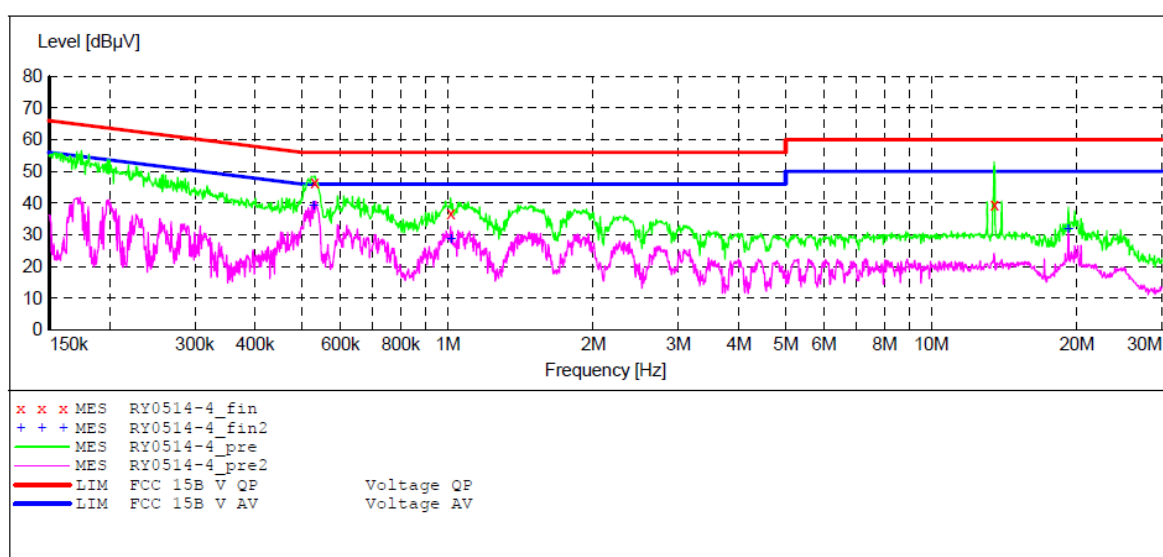
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.510708	37.00	12.5	46	9.0	AV	L1	GND
1.054384	30.10	12.4	46	15.9	AV	L1	GND
19.213335	24.40	12.1	50	25.6	AV	L1	GND

ACCURATE TECHNOLOGY CO., LTD**CONDUCTED EMISSION STANDARD FCC PART 15B**

EUT: Android multi-functional payment terminal M/N:JP762A
 Manufacturer: JEPower
 Operating Condition: Operation
 Test Site: 2#Shielding Room
 Operator: Ricky
 Test Specification: N 120V/60Hz
 Comment: Report NO.:ATE20140725
 Start of Test: 2014-5-14 / 15:53:42

SCAN TABLE: "V 150K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 0.4 % QuasiPeak 1.0 s 9 kHz LISN (ESH3-Z5)
 Average

**MEASUREMENT RESULT: "RY0514-4_fin"**

2014-5-14 15:55

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.530988	46.50	12.5	56	9.5	QP	N	GND
1.014113	36.90	12.4	56	19.1	QP	N	GND
13.492507	39.50	12.1	60	20.5	QP	N	GND

MEASUREMENT RESULT: "RY0514-4_fin2"

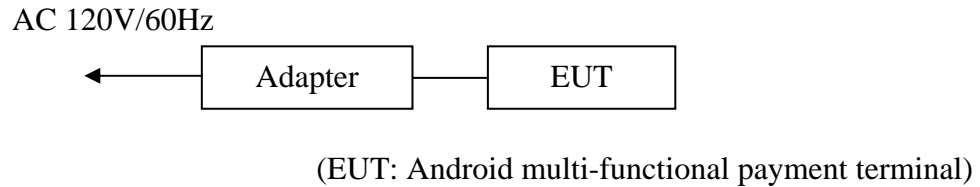
2014-5-14 15:55

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.527817	39.00	12.5	46	7.0	AV	N	GND
1.014113	28.40	12.4	46	17.6	AV	N	GND
19.213335	31.80	12.1	50	18.2	AV	N	GND

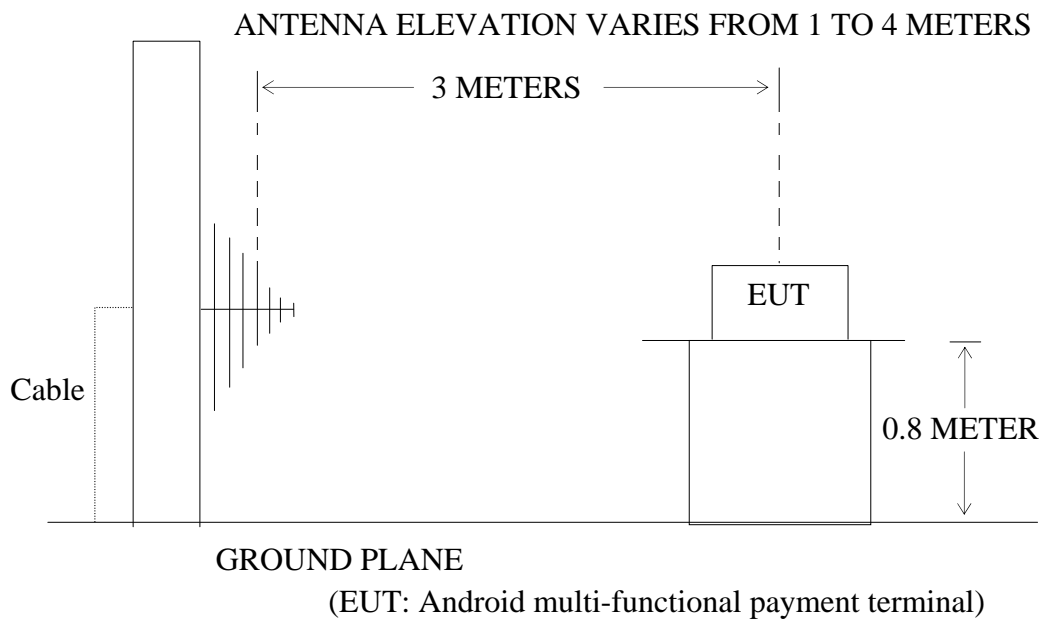
6. RADIATED EMISSION FOR FCC PART 15 SECTION 15.109(A)

6.1. Block Diagram of Test Setup

6.1.1. Block diagram of connection between the EUT and simulators



6.1.2. Semi-Anechoic Chamber Test Setup Diagram



6.2.The Emission Limit For Section 15.109 (a)

6.2.1.Radiation Emission Measurement Limits According to Section 15.109 (a).

Frequency (MHz)	Limit	
	Field Strength of Quasi-peak Value (microvolts/m)	Field Strength of Quasi-peak Value (dBμV/m)
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

6.3.EUT Configuration on Measurement

The following equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.3.1.Android multi-functional payment terminal (EUT)

Model Number : JP762A
 Serial Number : N/A
 Manufacturer : Guangzhou JEPOWER Electronic Technology
 Development Co., Ltd.

6.4.Operating Condition of EUT

6.4.1.Setup the EUT and simulator as shown as Section 6.1.

6.4.2.Turn on the power of all equipment.

6.4.3. Let the EUT work in (Operation) mode measures it.

6.5. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2009 on radiated emission measurement.

The bandwidth of test receiver is set at 120kHz in 30-1000MHz

The frequency range from 30MHz to 1000MHz is checked.

The highest frequency of the internal sources of the EUT is 1.4GHz higher than 1GHz; The measurement shall be made up to 7GHz.

6.6.The Emission Measurement Result

PASS.

Below 1G								
Polarization								
Horizontal	No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	1	197.8928	60.97	-20.35	40.62	43.50	-2.88	QP
	2	595.1329	55.22	-11.79	43.43	46.00	-2.57	QP
	3	760.7036	51.91	-8.40	43.51	46.00	-2.49	QP
Vertical	No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	1	131.7577	64.49	-23.12	41.37	43.50	-2.13	QP
	2	164.9075	61.99	-22.34	39.65	43.50	-3.85	QP
	3	360.4476	58.08	-15.92	42.16	46.00	-3.84	QP
Above 1G								
Polarization								
Horizontal	No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	1	2620.134	44.05	-6.73	37.32	74.00	-36.68	peak
	2	3487.811	43.42	-3.09	40.33	74.00	-33.67	peak
	3	4491.751	44.71	-0.93	43.78	74.00	-30.22	peak
Vertical	No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	1	4979.731	45.25	1.41	46.66	74.00	-27.34	peak
	2	5330.701	45.01	1.77	46.78	74.00	-27.22	peak
	3	6825.143	45.40	5.26	50.66	74.00	-23.34	peak

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss – Amplifier Gain

3. The spectral diagrams are attached as below display the measurement of peak values

4. The average measurement was not performed when peak measured data under the limit of average detection.



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: RICKY #1302

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Android multi-functional payment terminal

Mode: Operation

Model: JP762A

Manufacturer: Jepower

Polarization: Horizontal

Power Source: AC 120V/60Hz

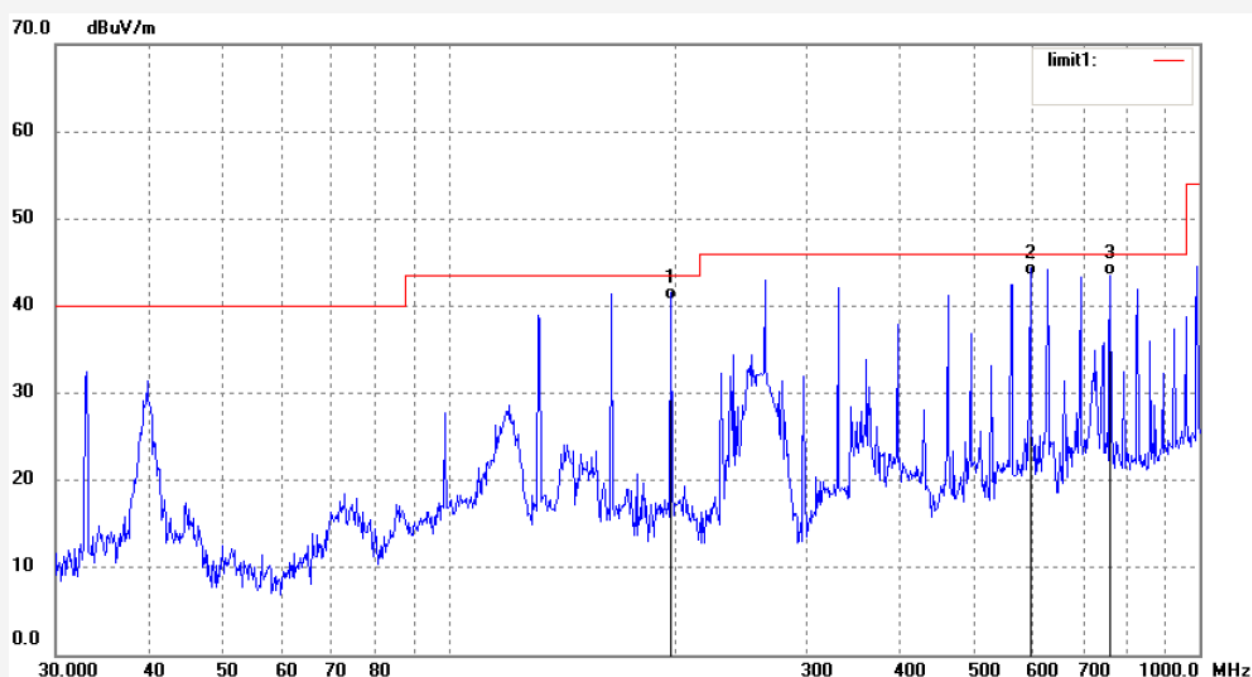
Date: 14/05/15/

Time: 9/06/35

Engineer Signature:

Distance: 3m

Note: Report No:ATE20140725



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	197.8928	60.97	-20.35	40.62	43.50	-2.88	QP			
2	595.1329	55.22	-11.79	43.43	46.00	-2.57	QP			
3	760.7036	51.91	-8.40	43.51	46.00	-2.49	QP			



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: RICKY #1303

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Android multi-functional payment terminal

Mode: Operation

Model: JP762A

Manufacturer: Jepower

Polarization: Vertical

Power Source: AC 120V/60Hz

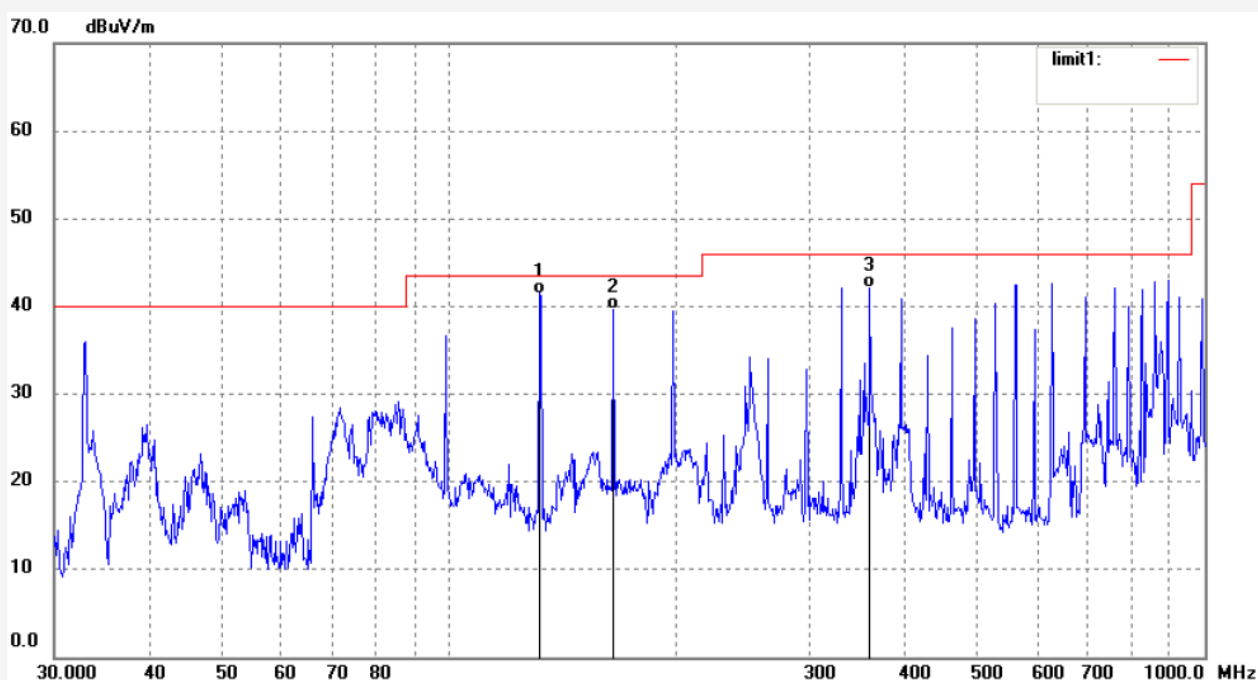
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Time: 9/07/50

Engineer Signature:

Distance: 3m

Note: Report No:ATE20140725



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	131.7577	64.49	-23.12	41.37	43.50	-2.13	QP			
2	164.9075	61.99	-22.34	39.65	43.50	-3.85	QP			
3	360.4476	58.08	-15.92	42.16	46.00	-3.84	QP			



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: Ricky #1332

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Android multi-functional payment terminal

Mode: Operation

Model: JP762A

Manufacturer: Jepower

Polarization: Vertical

Power Source: AC 120V/60Hz

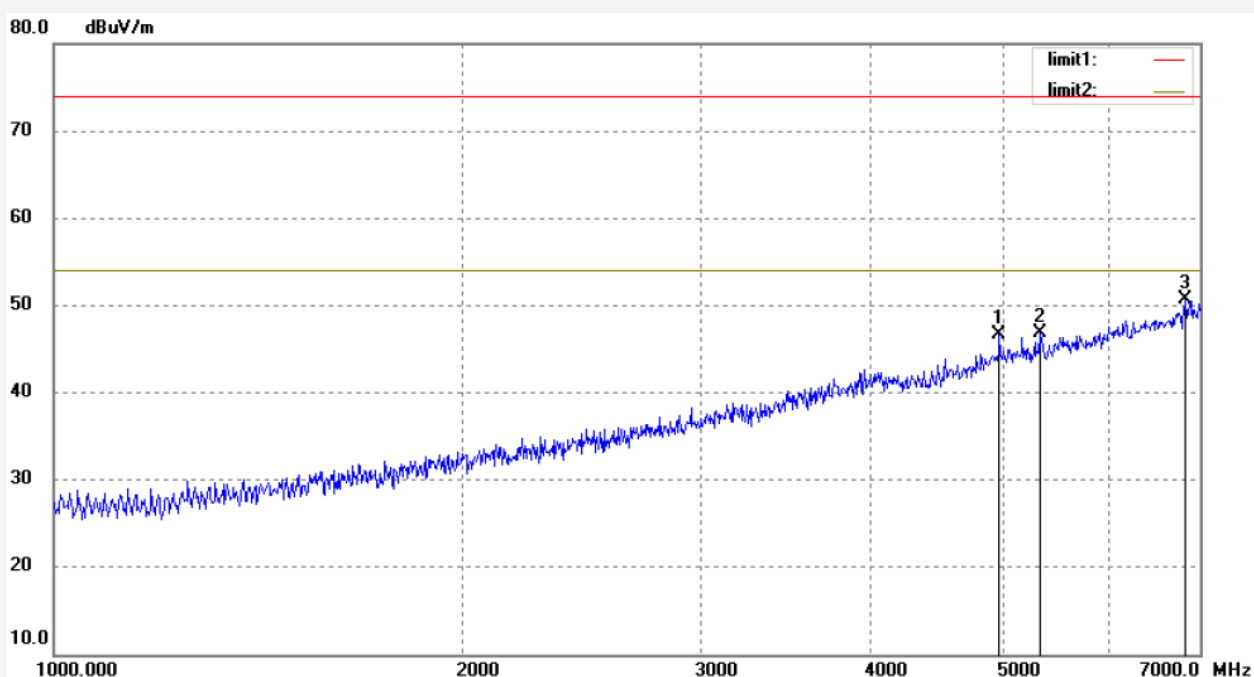
Date: 14/05/16/

Time: 9/04/59

Engineer Signature:

Distance: 3m

Note: Report No:ATE20140725



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	4979.731	45.25	1.41	46.66	74.00	-27.34	peak			
2	5330.701	45.01	1.77	46.78	74.00	-27.22	peak			
3	6825.143	45.40	5.26	50.66	74.00	-23.34	peak			


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F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: Ricky #1333

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Android multi-functional payment terminal

Mode: Operation

Model: JP762A

Manufacturer: Jepower

Polarization: Horizontal

Power Source: AC 120V/60Hz

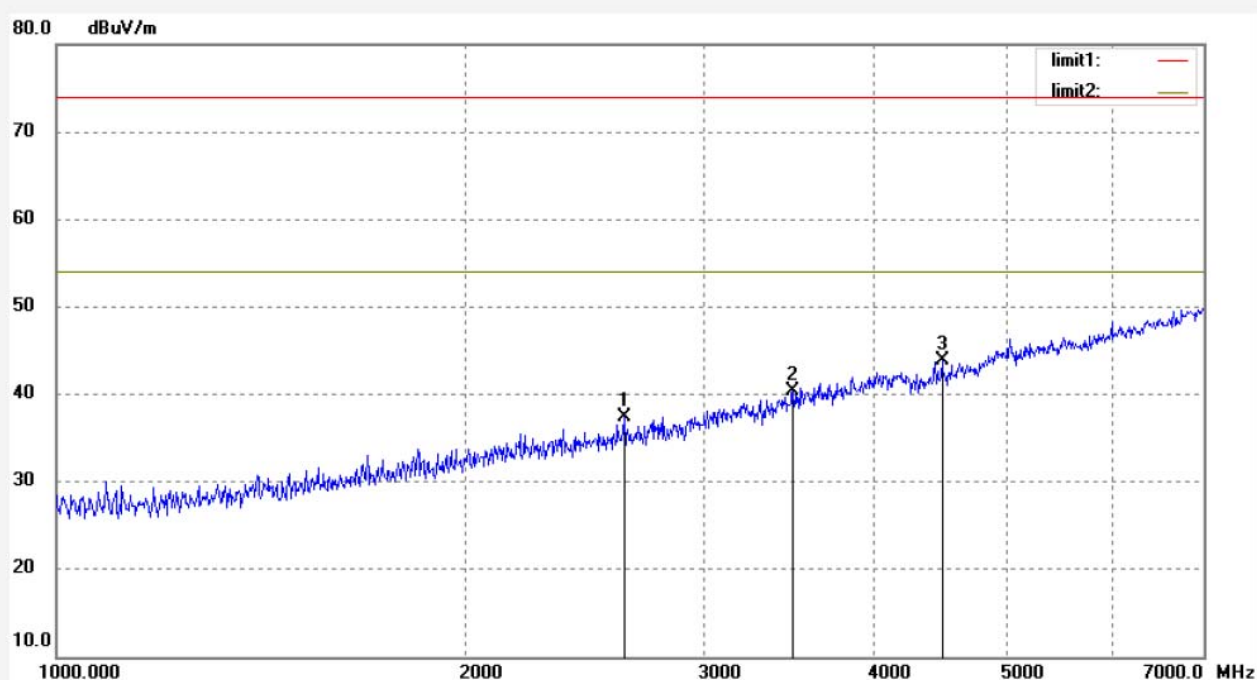
Date: 14/05/16/

Time: 9/05/31

Engineer Signature:

Distance: 3m

Note: Report No:ATE20140725



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2620.134	44.05	-6.73	37.32	74.00	-36.68	peak			
2	3487.811	43.42	-3.09	40.33	74.00	-33.67	peak			
3	4491.751	44.71	-0.93	43.78	74.00	-30.22	peak			