



FCC PART 15.225


## TEST REPORT

For

### Advanced Mobile Payment Inc.

Units 401-403, 15 Wertheim Court. Richmond Hill, Ontario L4B 3H7 Canada

**FCC ID: 2AKJB-AMP9000-2**

<b>Report Type:</b> Original Report	<b>Product Type:</b> POS Payment Terminal
<b>Report Number:</b> RSZ170511006-00B	
<b>Report Date:</b> 2017-05-23	
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**Note:** This test report is prepared for the customer shown above and for the equipment described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp.

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## GENERAL INFORMATION

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### Product Description for Equipment under Test (EUT)

The *Advanced Mobile Payment Inc.* 's product, model number: *AMP 9000-CO (FCC ID: 2AKJB-AMP9000-2)* in this report is a *POS Payment Terminal*, which was measured approximately: 140 mm (L) \* 80 mm (W) \* 29 mm (H), rated with input voltage: DC 3.7V battery or DC 5.0V from adapter.

#### Adapter Information:

Model: ADS-6MA-06 05050EPCU

Input: AC 100-240V, 50/60Hz, 0.3A

Output: DC 5.0V, 1.0A

*\* All measurement and test data in this report was gathered from production sample serial number: 1700955 (Assigned by BACL, Kunshan). The EUT supplied by the applicant was received on 2017-05-11.*

### Objective

This Type approval report is prepared on behalf of *Advanced Mobile Payment Inc.* in accordance with Part 2- Subpart J, and Part 15-Subparts A and C of the Federal Communication Commissions rules.

The objective is to determine the compliance of the EUT with FCC rules, sec 15.203, 15.205, 15.207, 15.209 and 15.225.

### Related Submittal(s)/Grant(s)

Part 22H & 24E PCB and Part 15B JBP submissions with FCC ID: 2AKJB-AMP9000-2.

### Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Kunshan). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

**Measurement Uncertainty**

Item		Uncertainty
AC Power Lines Conducted Emissions		$\pm 3.26$ dB
RF conducted test with spectrum		$\pm 0.9$ dB
RF Output Power with Power meter		$\pm 0.5$ dB
Radiated emission	9 kHz~30 MHz	$\pm 6.1$ dB
	30MHz~1GHz	$\pm 5.91$ dB
Occupied Bandwidth		$\pm 0.5$ kHz
Temperature		$\pm 1.0$ °C
Humidity		$\pm 6\%$

**Test Facility**

The test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road, Kunshan, Jiangsu province, China.

Test site at Bay Area Compliance Laboratories Corp. (Kunshan) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 06, 2014. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 815570. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

## SYSTEM TEST CONFIGURATION

### Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

### EUT Exercise Software

No Exercise Software.

### Equipment Modifications

No modification on the EUT.

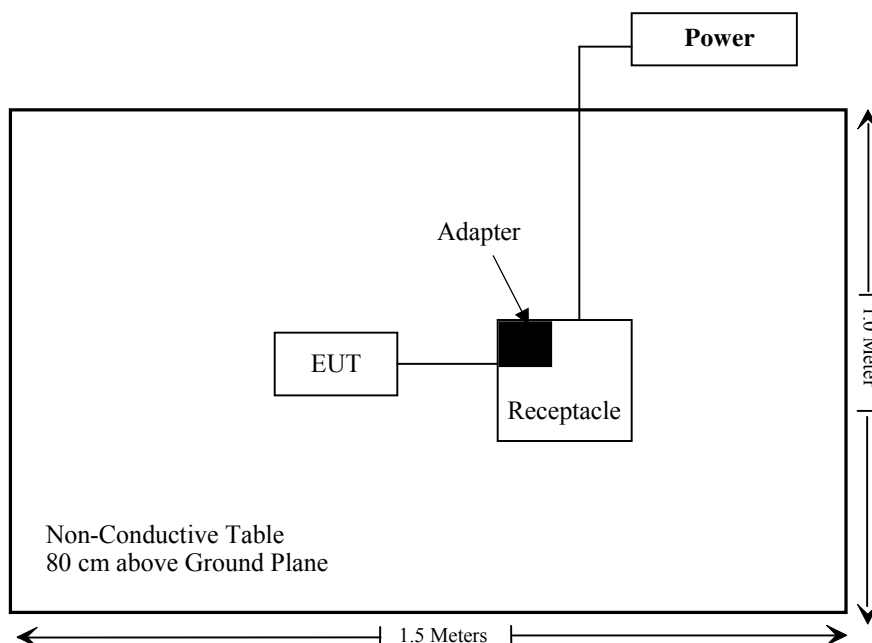
### Local Support Equipment

Manufacturer	Description	Model	Serial Number
N/A	N/A	N/A	N/A

### External I/O Cable

Cable Description	Length (m)	From/Port	To
Un-shielding Detachable USB Cable	1.5	EUT	Adapter

### Block Diagram of Test Setup



**SUMMARY OF TEST RESULTS**

FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliance
§15.207	AC Line Conducted Emission	Compliance*
§15.225 §15.209 §15.205	Radiated Emission Test	Compliance
§15.225(e)	Frequency Stability	Compliance*
§15.215(c)	20dB Emission Bandwidth	Compliance*

Compliance\*: The EUT is identical with the product which the Model named AMP 9000 and FCC ID is 2AKJB-AMP9000, the difference is the Wifi module was removed. So these test items please referred to FCC ID: 2AKJB-AMP9000 that has been certified on 2017-02-18, report No.: RSZ161123002-00D, which was tested by Bay Area Compliance Laboratories Corp.

**TEST EQUIPMENT LIST**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
<b>Radiation test</b>					
Sonoma Instrunent	Amplifier	330	171377	2016-12-12	2017-12-12
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2016-11-25	2017-11-25
Sunol Sciences	Broadband Antenna	JB3	A090314-2	2016-01-09	2019-01-08
Narda	Pre-amplifier	AFS42-00101800	2001270	2016-09-08	2017-09-08
ETS-LINDGREN	PASSIVE LOOP	6512	108100	2016-01-09	2019-01-08
R&S	Auto test Software	EMC32	V 09.10.0	NCR	NCR
haojintech	Coaxial Cable	Cable-1	001	2016-12-12	2017-12-12
haojintech	Coaxial Cable	Cable-2	002	2016-12-12	2017-12-12
haojintech	Coaxial Cable	Cable-3	003	2016-12-12	2017-12-12

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

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## **FCC§15.203 - ANTENNA REQUIREMENT**

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### **Applicable Standard**

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

### **Antenna Connected Construction**

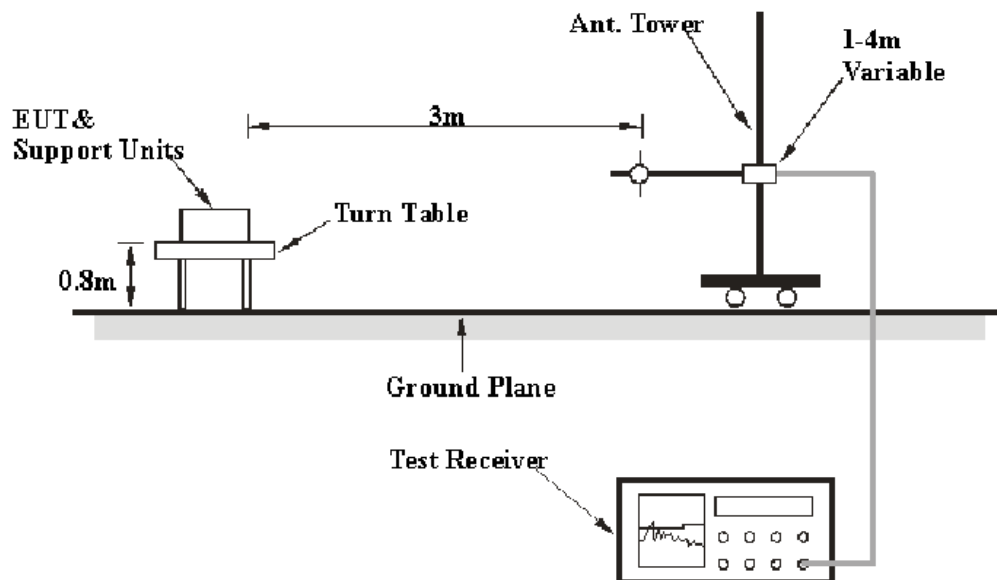
The EUT has a printed antenna on PCB, fulfill the requirement of this section. Please see EUT photo for details.



**FCC§15.225, §15.205 & §15.209 - RADIATED EMISSIONS TEST****Applicable Standard**

As per FCC Part 15.225

- (a) The field strength of any emissions within the band 13.553–13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.
- (b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.
- (c) Within the bands 13.110–13.410 MHz and 13.710–14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.
- (d) The field strength of any emissions appearing outside of the 13.110–14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

**EUT Setup**

The radiated emission tests were performed in the 3-meter chamber a test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC Part Subpart C limits.

The spacing between the peripherals was 10 cm.

### EMI Test Receiver Setup

According to FCC Rules, 47 CFR 15.33, the EUT emissions were investigated up to 1000 MHz.

During the radiated emission test, the EMI test Receiver was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
9 kHz – 150 kHz	300 Hz	1 kHz	/	QP
150 kHz – 30 MHz	10 kHz	30 kHz	/	QP
30 MHz – 1000 MHz	100 kHz	300 kHz	/	QP

### Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Factor} = \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Corrected Factor}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

### Test Results Summary

According to the data in the following table, the EUT complied with the FCC §15.209.

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level is in compliance with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cispr}$$

In BACL,  $U_{(Lm)}$  is less than  $U_{cispr}$ , if  $L_m$  is less than  $L_{lim}$ , it implies that the EUT complies with the limit.

**Test Data****Environmental Conditions**

<b>Temperature:</b>	24 °C
<b>Relative Humidity:</b>	49 %
<b>ATM Pressure:</b>	101.0 kPa

*The testing was performed by Layne Li on 2017-05-23.*

*Test mode: Transmitting*

## 1) Spurious Emissions (9 kHz~30 MHz):

Indicated		Table Angle Degree	Antenna Height (m)	Detector PK/QP/Ave.	Correction Factor			Corrected Amplitude (dBμV/m) @3m	FCC Part 15.225	
Frequency (MHz)	Maximum Reading (dBμV) @3m				Ant. Factor (dB)	Cable Loss (dB)	Pre-Amp. Gain (dB)		Limit (dBμV/m) @3m	Result
0.96	0.79	0	1.2	QP	66.4	0.1	0	67.29	107.96	Pass
27.75	4.35	0	1.2	QP	34.2	0.2	0	38.75	69.54	Pass

## 2) Spurious Emissions (30 MHz ~1 GHz):

Frequency (MHz)	Corrected Amplitude (dBμV/m)	Detector PK/QP/Ave.	Antenna Height (m)	Antenna Polarity (H/V)	Turntable Position (deg)	Correction Factor (dB)	Limit (dBμV/m)	Margin (dB)
30.14	25.54	QP	1.3	V	313	-4.98	40	14.46
308.56	28.35	QP	1.1	H	131	-10.37	46	17.65
149.54	36.45	QP	1.1	V	1	-11.85	43.5	7.05
595.64	37.56	QP	1.1	V	366	-5.19	46	8.44
831.65	30.64	QP	1.0	V	215	-1.59	46	15.36
848.35	31.61	QP	2.4	H	157	-1.59	46	14.39

## **FCC§15.225(a) (b) (c) – FIELD STRENGTH OF RADIATED EMISSIONS**

### **Applicable Standard**

As per FCC Part 15.225

(a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

(b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

(c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

### **EUT Setup**

The field strength of radiated emissions tests were performed in the 3-meter chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC Part Subpart C limits.

### **Test Data**

#### **Environmental Conditions**

<b>Temperature:</b>	24 °C
<b>Relative Humidity:</b>	49 %
<b>ATM Pressure:</b>	101.0 kPa

*The testing was performed by Echo Wu on 2017-05-23.*

*Test Mode: Transmitting*

Test Result: Pass

Indicated			Table Angle Degree	Antenna Height (m)	Detector PK/QP/Ave.	Correction Factor			Corrected Amplitude (dBμV/m) @3m	FCC Part 15.225	
Frequency Range (MHz)	Mark point (MHz)	Maximum Reading (dBμV) @3m				Ant. Factor (dB)	Cable Loss (dB)	Pre-Amp. Gain (dB)		Limit (dBμV/m) @3m	Result
13.110-13.410	13.389	7.45	0	1.2	QP	35.2	0.2	0	42.85	80.5	Pass
13.410-13.553	13.535	14.25	0	1.5	QP	35.2	0.2	0	49.65	90.5	Pass
13.553-13.567	13.561	28.45	0	1.4	QP	35.2	0.2	0	63.85	124	Pass
13.567-13.710	13.684	15.35	0	1.2	QP	35.2	0.2	0	50.75	90.5	Pass
13.710-14.010	13.888	6.36	0	1.3	QP	35.2	0.2	0	41.76	80.5	Pass

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