



Report No: FCC1706169-03 File reference No: 2017-07-10

Applicant: Shenzhen Jingwah Information Technology Co., Ltd.

Product: Tablet PC

Model No: ST7150, P7100, EM795, T7000, M710R

Trademark: Smartab, Polaroid, Emerson, Packard Bell

Test Standards: FCC Part 15 Subpart B

Test result:

It is herewith confirmed and found to comply with the requirements

set up by ANSI C63.4&FCC Part 15 regulations for the evaluation of

electromagnetic compatibility

Approved By

Jack Chung

Jack Chung

Manager

Dated: July 10, 2017

Results appearing herein relate only to the sample tested

The technical reports is issued errors and omissions exempt and is subject to withdrawal at

## SHENZHEN TIMEWAY TESTING LABORATORIES

Room 512-519, 5/F., East Tower, Building 4, Anhua Industrial Zone, Futian District, Shenzhen, Guangdong, China

Tel (755) 83448688, Fax (755) 83442996, E-Mail:info@timeway-lab.com

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## **Special Statement:**

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

## **CNAS-LAB Code: L2292**

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of testing Laboratories.

## FCC-Registration No.: 899988

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 899988.

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## **Test Report Conclusion**

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# 1.0 General Details

1.1 Test Lab Details

Name: SHENZHEN TIMEWAY TESTING LABORATORIES.

Address: Room 512-519,5/F., East Tower, Building 4, Anhua Industrial Zone, Futian

District, Shenzhen, Guangdong China

Telephone: (755) 83448688 Fax: (755) 83442996

1.2 Applicant Details

Applicant: Shenzhen Jingwah Information Technology Co., Ltd.

Address: 4F, Bldg 4, Jinghua Square, No.1 Huafa North Road, Futian District,

Shenzhen, China

Telephone: --Fax: ---

1.3 Description of EUT

Product: Tablet PC

Manufacturer: Shenzhen Jingwah Information Technology Co., Ltd.

Address: 4F, Bldg 4, Jinghua Square, No.1 Huafa North Road, Futian District,

Shenzhen, China

Brand Name: Smartab, Polaroid, Emerson, Packard Bell

Model Number: ST7150

Additional Model Number: P7100, EM795, T7000, M710R

1.4 Submitted Sample: 2 Samples

1.5 Test Duration: 2017-06-19 to 2017-07-08

1.6 Test Uncertainty

Conducted Emissions Uncertainty =3.6dB Radiated Emissions Uncertainty =4.7dB

1.7 Test Engineer

Temy Tang

The sample tested by

Print Name: Terry Tong

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Remark: There are alternative manufacturers for USB cable, DDR and EMMC. EUT are configured as following

Name	Manufacturer	Model				
Configure a)						
DDR	PSC	P3P2GF3BLF				
EMMC	EMMC FORESEE					
USB Cable	Shenzhen Xinhuai Ronghui Technology Co,Ltd.	-				
	DongGuan MinTai Electronic Co.,LTD	-				
	Configure b)					
DDR	Spectek	PE959-12K				
EMMC	FORESEE	NCEMAD6B-16G				
USB Cable	USB Cable Shenzhen Xinhuai Ronghui Technology Co,Ltd.					
	DongGuan MinTai Electronic Co.,LTD					

Note: Configure a) and b) are tested and only worse case are recorded in the test report

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## 2.0 List of Measurement Equipment

## 2.1 Conducted Emission Test

				Calibration	Calibration
Name	Model No.	Serial No.	Manufacturer	Date	Cycle
EMI Test Receiver	ESH3	860905/006	RS	2016.08.22	1Year
Spectrum Analyzer	ESA-L1500A	US37451154	HP	2016.08.22	1Year
PULSE LIMITER	ESH3-Z2	100281	RS	2016.08.22	1Year
LISN	ESH3-Z5	100294	RS	2016.08.22	1Year
LISN	ESH3-Z5	100253	RS	2016.08.22	1Year

## 2.2 Radiated electromagnetic disturbance test

				Calibration	Calibration
Name	Model No.	Serial No.	Manufacturer	Date	Cycle
EMI Test Receiver	ESVD	100008	RS	2016.08.22	1Year
Coaxial Switch	MP59B	M70585	ANRITSU	N/A	N/A
Amplifier	8447D	2727A05017	HP	2016.08.22	1Year
Bilog Antenna	VULB9163	9163/340	Schwarebeck	2016.08.23	1Year
Horn Antenna	BBHA 9120D	9120D-631	Schwarebeck	2016.08.24	1Year
Horn Antenna	BBHA 9170	BBHA9170265	Schwarebeck	2016.08.24	1Year
Test Receiver	ESI26	838786/013	RS	2016.08.22	1Year

#### 2.3 Auxiliary Equipment

					FCC DOC/
Name	Model No.	Serial No.	Manufacturer	Cable	ID
Passive Earphone					
Mouse	M-F105		L.SEletron		FCC DOC
TF					
USB			Kingstone		FCC DOC
PC	R4		IBM		FCC DOC

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## 3.0 Technical Details

3.1 Investigations Requested
Perform Electromagnetic Interference [EMI] tests for FCC Requirement.

3.2 Test Standards

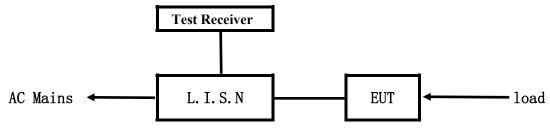
FCC Part 15 Subpart B

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#### 4.0 Conducted Power line Test

#### 4.1 Schematics of the test



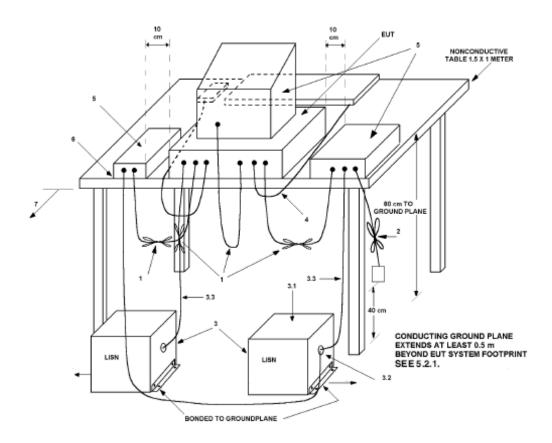
**EUT: Equipment Under Test** 

#### 4.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2014. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4 –2014. Cables and peripherals were moved to find the maximum emission levels for each frequency.

Actual Working Voltage and Frequency: 120V~, 60Hz

Block diagram of Test setup



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#### 4.3 Power line conducted Emission Limit

Engavon av (MIII.)	Class A Li	mits dB(μV)	Class B Limits dB(μV)		
Frequency(MHz)	Quasi-peak Level	Average Level	Quasi-peak Level	Average Level	
0.15 ~ 0.50	79.00	66.00	66.00~56.00*	56.00~46.00*	
$0.50 \sim 5.00$	73.00	60.00	56.00	46.00	
$5.00 \sim 30.00$	73.00	60.00	60.00	50.00	

Notes: 1. \*decreasing linearly with logarithm of frequency.

2. The tighter limit shall apply at the transition frequencies

#### 4.4 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

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## A: Conducted Emission on Live Terminal (150kHz to 30MHz)

**EUT Operating Environment** 

Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Communication with PC** 

**Equipment Level: Class B** 

**Results: PASS** 

Please refer to following diagram for individual

#### 80.0 dBuV



No. Mk.	Freq.			Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	0.4850	27.70	10.26	37.96	56.25	-18.29	QP	
2	0.4850	11.70	10.26	21.96	46.25	-24.29	AVG	

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## B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

**EUT Operating Environment** 

Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Communication with PC** 

**Equipment Level: Class B** 

**Results: Pass** 

Please refer to following diagram for individual

### 80.0 dBuV



No. Mk.	Freq.	Reading Level		Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	0.1748	30.30	9.87	40.17	64.73	-24.56	QP	
2	0.1748	5.10	9.87	14.97	54.73	-39.76	AVG	

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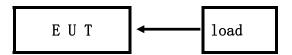
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#### 5.0 Radiated Disturbance Test

#### 5.1 Schematics of the test

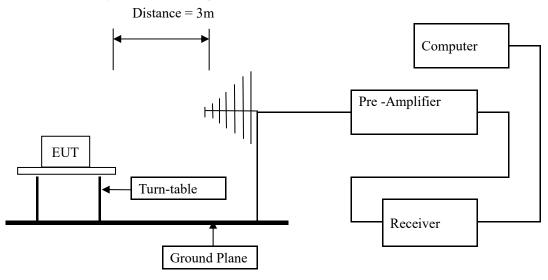


#### 5.2 Test Method and test Procedure:

The EUT was tested according to ANSI C63.4-2014; The frequency spectrum from 30MHz to 18GHz was investigated. All reading from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120kHz. For measurement above 1GHz, peak values with RBW=1MHz and PK detector. AV value with RBW=1MHz, VBW=10Hz and PK

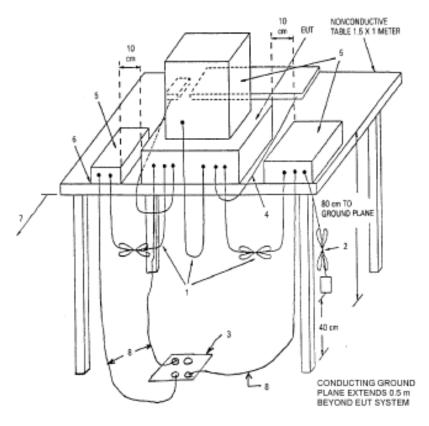
Actual Working Voltage and Frequency: 120V~, 60Hz

## **Block diagram of Test setup**



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### 5.3 Radiated Emission Limit

Frequency Range (MHz)	Distance (m)	Field strength (dB $\mu$ V/m)				
30-88	3	40.00				
88-216	3	43.50				
216-960	3	46.00				
Above 960	3	54.00				

Note: The lower limit shall apply at the transition frequencies

## 5.4 Test result

The frequency spectrum from 30MHz to 18GHz was investigated. All reading from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120kHz. For measurement above 1GHz, peak values with RBW=VBW=1MHz and PK detector. AV value with RBW=1MHz, VBW=10Hz and PK. Measurements were made at 3 meters.

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#### Test result

## General Radiated Emission Data and Harmonics Radiated Emission Data

Radiated Emission In Horizontal/ In Vertical (30MHz----1000MHz)

**EUT set Condition:** Communication with PC

**Results:** Pass

Frequency (MHz)	Level@3m (dB $\mu$ V/m)	Antenna Polarity	Limit@3m (dB \( \mu \)V/m)
137.080	37.34	Н	43.50
822.480	40.75	Н	46.00
182.760	37.91	Н	43.50
359.960	37.84	Н	46.00
171.320	29.08	V	43.50
822.480	40.55	V	46.00
360.000	34.64	V	46.00
137.080	35.01	V	43.50

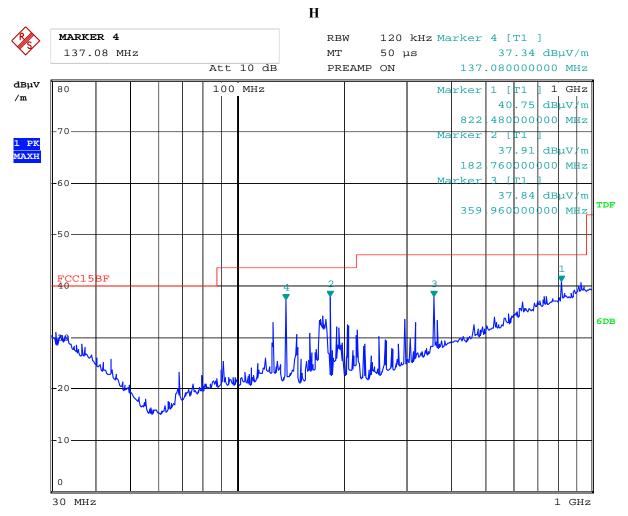
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## Test Figure:



Date: 7.JUL.2017 14:23:49

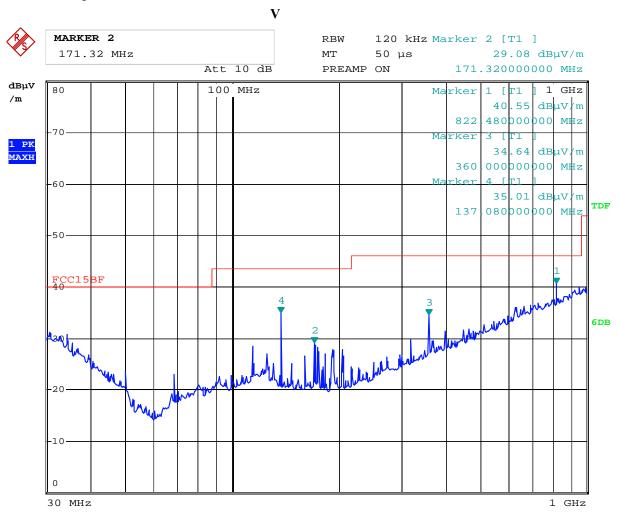
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## Test Figure:



Date: 7.JUL.2017 14:25:42

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## Radiated Disturbance (1000MHz----18000MHz)

**EUT Operating Environment** 

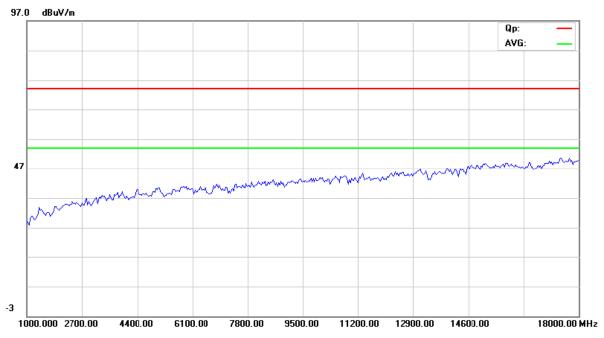
Temperature:25°C Humidity: 75%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Communication with PC** 

**Equipment Level: Class B** 

**Results: Pass** 

Please refer to following diagram for individual



Frequency (MHz)	Level@3m (dBµV/m)	Antenna Polarity	Limit@3m (dBµV/m)
		Н	54(AV)

Note: Due to the final radiated level much less than the limit, so necessary take down final radiated level

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## Radiated Disturbance (1000MHz----18000MHz)

**EUT Operating Environment** 

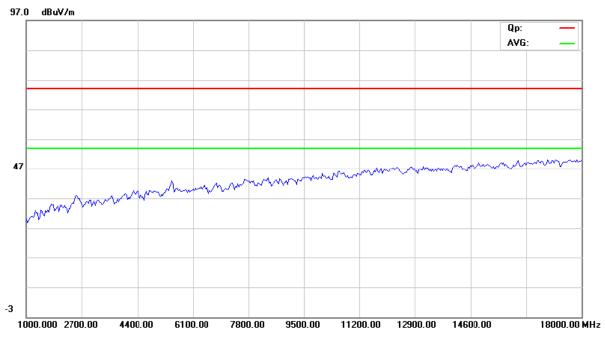
Temperature:25°C Humidity: 75%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Communication with PC** 

**Equipment Level: Class B** 

**Results: Pass** 

Please refer to following diagram for individual



Frequency (MHz)	Level@3m (dBµV/m)	Antenna Polarity	Limit@3m (dBµV/m)
		V	54(AV)

Note: Due to the final radiated level much less than the limit, so necessary take down final radiated level

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#### 6.0 FCC ID Label

#### FCC ID: RBD-M710R1

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

#### **Mark Location:**



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- 7.0 Photo of testing
- Conducted test View--



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#### 7.2 Radiated emission test view--



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## Photographs - EUT

Outside view



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Outside view





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Outside view





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Outside view





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Outside view





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Inside view





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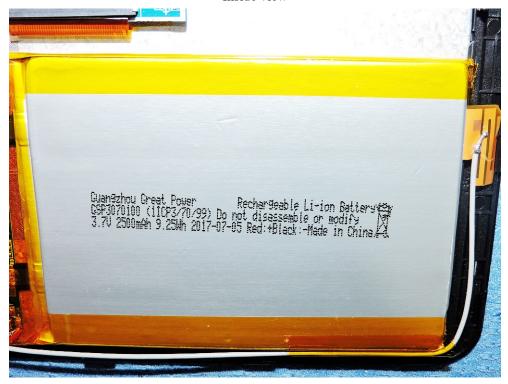
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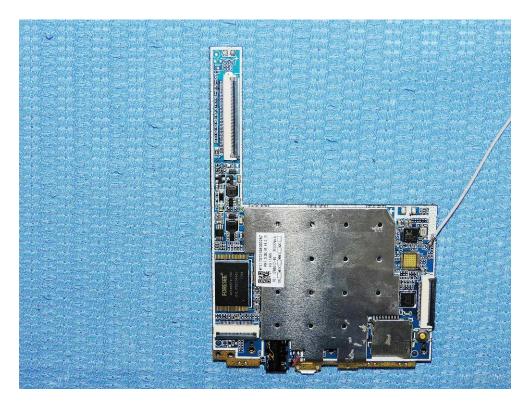
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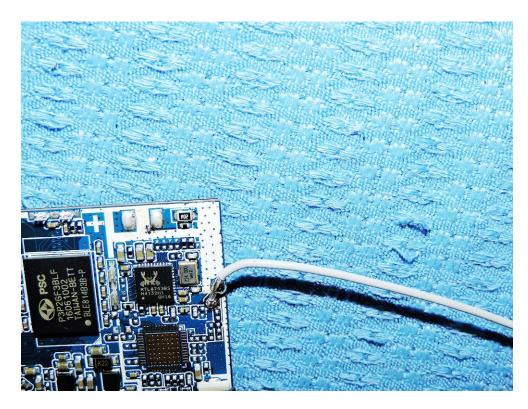
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Inside view-- Configure a)





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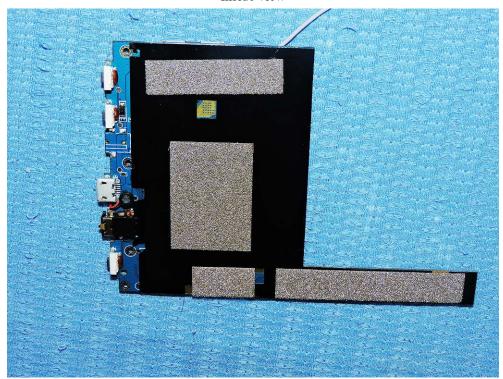
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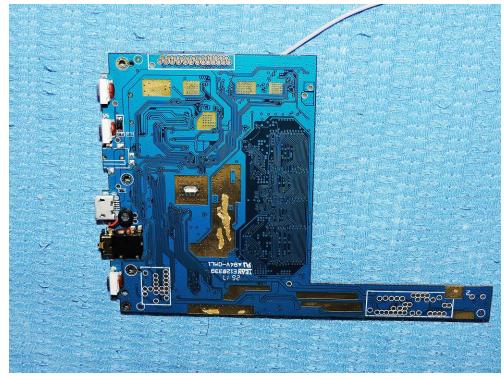
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Inside view





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## Inside view-- Configure b)





**End of Report** 

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