

# Radio Measurement and Test Report

For

**Vonino EElectronics LTD.**

**Miramar Tower 10F-No.1010, 132 Nathan Road, Tsim Sha Tsui , Kowloon,  
Hong Kong**

<b>Test Standards:</b>	<u>EN 300 440-1 V1.6.1 (2010-08)</u> <u>EN 300 440-2 V1.4.1 (2010-08)</u>
<b>Product Description:</b>	<u>Smart Phone</u>
<b>Tested Model:</b>	<u>VOLT X</u>
<b>Report No.:</b>	<u>STR16128114E-6</u>
<b>Tested Date:</b>	<u>2016-12-12 to 2016-12-21</u>
<b>Issued Date:</b>	<u>2016-12-22</u>
<b>Tested By:</b>	<u>Iven Guo / Engineer</u> <i>Iven Guo</i>
<b>Reviewed By:</b>	<u>Silin Chen / EMC Manager</u> <i>Silin Chen</i>
<b>Approved &amp; Authorized By:</b>	<u>Jandy So / PSQ Manager</u> <i>Jandy So</i>
<b>Prepared By:</b>	

**Shenzhen SEM.Test Technology Co., Ltd.**  
1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road,  
Bao'an District, Shenzhen, P.R.C (518101)  
Tel.: +86-755-33663308 Fax.: +86-755-33663309 Website: www.semtest.com.cn

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM.Test Technology Co., Ltd.

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**TABLE OF CONTENTS**

<b>1 GENERAL INFORMATION .....</b>	<b>3</b>
1.1 Product Description for Equipment Under Test (EUT) .....	3
1.2 Test Standards .....	4
1.3 Test Methodology .....	4
1.4 Test Facility .....	4
1.5 EUT Setup and Test Mode .....	5
1.6 Measurement Uncertainty .....	5
1.7 Test Equipment List and Details .....	5
<b>2. SUMMARY OF TEST RESULTS .....</b>	<b>6</b>
<b>3. RECEIVER SPURIOUS EMISSIONS .....</b>	<b>7</b>
3.1 Limit of Spurious Emissions .....	7
3.2 Test Procedure .....	7
3.3 Environmental Conditions .....	7
3.4 Summary of Test Results/Plots .....	7
<b>EXHIBIT 1 - PRODUCT LABELING .....</b>	<b>10</b>
Proposed CE Label Format .....	10
Proposed Label Location on EUT .....	10
<b>EXHIBIT 2 - EUT PHOTOGRAPHS .....</b>	<b>11</b>
<b>EXHIBIT 3 - TEST SETUP PHOTOGRAPHS .....</b>	<b>19</b>

## 1 GENERAL INFORMATION

### 1.1 Product Description for Equipment Under Test (EUT)

#### Client Information

Applicant: Vonino EElectronics LTD.  
Address of applicant: Miramar Tower 10F-No.1010, 132 Nathan Road, Tsim Sha Tsui , Kowloon, Hong Kong

Manufacturer: Gui zhou Fortuneship Technology Co., Ltd.  
Address of manufacturer: No. 4 Plant, High-tech Industrial Park, Xinpu Economic Development Zone) Jingkai Road, Xinpu Jingkai District, Xinpu New District, Zunyi City, Guizhou Province, P. R. China

General Description of EUT	
Product Name:	Smart Phone
Brand Name:	vonino
Model No.:	VOLT X
Adding Model(s):	/
Rated Voltage:	DC 3.8V by Battery
Battery Capacity:	4000mAh
Adapter Model:	JT288-05100 Input: 100-240Vac, 50/60Hz, 0.15A Output: 5.0V $\pm$ %, 1A
Software Version:	Vonino_v1.1.1_20161130
Hardware Version:	F1-4G-V60-CF9-KS670
<i>Note: The test data is gathered from a production sample, provided by the manufacturer. The EUT has three SIM sockets while with the same RF circuit and function controlled by the firmware software.</i>	

Technical Characteristics of EUT	
Frequency Range:	1.575GHz Receiving
Type of Antenna:	Integral Antenna

## 1.2 Test Standards

The following report is prepared on behalf of the Vonino EElectronics LTD. in accordance with ETSI EN 300 440-2, Electromagnetic compatibility and Radio spectrum Matters (ERM); Short range devices; Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive.

The objective of the manufacturer is to determine compliance with ETSI EN 300 440-2, Electromagnetic compatibility and Radio spectrum Matters (ERM); Short range devices; Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive.

**Maintenance of compliance** is the responsibility of the manufacturer. Any modification of the product maybe which result in lowering the immunity should be checked to ensure compliance has been maintained

## 1.3 Test Methodology

All measurements contained in this report were conducted with ETSI EN 300 440-1, Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Part 1: Technical characteristics and test methods.

The equipment under test (EUT) was configured to measure its highest possible emission level. For more detail refer to the Operating Instructions.

## 1.4 Test Facility

- **FCC – Registration No.: 934118**

Shenzhen SEM.Test Technology Co., Ltd. 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 and the Registration is 934118.

- **Industry Canada (IC) Registration No.: 11464A**

The 3m Semi-anechoic chamber of Shenzhen SEM.Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

- **CNAS Registration No.: L4062**

Shenzhen SEM.Test Technology Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C (518101)

## 1.5 EUT Setup and Test Mode

The equipment under test (EUT) was configured to measure its highest possible emission/immunity level. The test modes were adapted according to the operation manual for use, the EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements, more detailed description as follows:

Test Mode List		
Test Mode	Description	Remark
TM1	GPS Receiving	1.575GHz

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
USB Cable	1.0	Shielded	Without Ferrite
Earplug Cable	1.2	Unshielded	Without Ferrite

Auxiliary Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Notebook	Lenovo	T410	/

## 1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
EIRP	Conducted	$\pm 0.42\text{dB}$
Frequency Range	---	$\pm 1 \times 10^{-7}$
Transmitter Spurious Emissions	Radiated	$\pm 5.2\text{dB}$
Receiver Spurious Emissions	Radiated	$\pm 5.2\text{dB}$

## 1.7 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal Date	Due Date
Power Splitter	Mini-Circuits	Z4PD-642W-S+	N846501416	2016-06-04	2017-06-03
Spectrum Analyzer	R&S	FSP	836079/035	2016-06-04	2017-06-03
Pre-amplifier	Agilent	8447F	3113A06717	2016-06-04	2017-06-03
Pre-amplifier	Compliance Direction	PAP-0118	24002	2016-06-04	2017-06-03
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2016-06-04	2017-06-03
Spectrum Analyzer	Agilent	E4407B	MY41440400	2016-06-04	2017-06-03

## 2. SUMMARY OF TEST RESULTS

Standards	Reference	Description of Test Item	Result
EN 300440-1 V1.6.1 (2010-08)	7.1.3	Equivalent Isotropically Radiated Power	N/A
	7.2.4	Permitted Range of Operating Frequencies	N/A
	7.3.6	Spurious Emissions	N/A
	7.4.3	Duty Cycle	N/A
	7.5.1	Additional requirements for FHSS equipment	N/A
	8.3.5	Receiver Spurious Radiations	Pass

Pass: The EUT complies with the essential requirements in the standard  
Fail: The EUT does not comply with the essential requirements in the standard  
N/A: not applicable

### 3. Receiver Spurious Emissions

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#### 3.1 Limit of Spurious Emissions

According to the ETSI EN 300 440-1 section 8.3.5, the power of any spurious emission shall not exceed 2 nW in the range 25 MHz to 1 GHz and shall not exceed 20 nW on frequencies above 1 GHz.

#### 3.2 Test Procedure

The EUT was placed on a nonmetal table which is 1.5 meter above the grounded reference plane and set to work in receiving operation mode. For more detail please refer to the ETSI EN 300 440-1 section 8.3.4.

The EUT was operating at normal to represent worst case during final qualification test.

#### 3.3 Environmental Conditions

Temperature:	22 °C
Relative Humidity:	45%
ATM Pressure:	1019 mbar

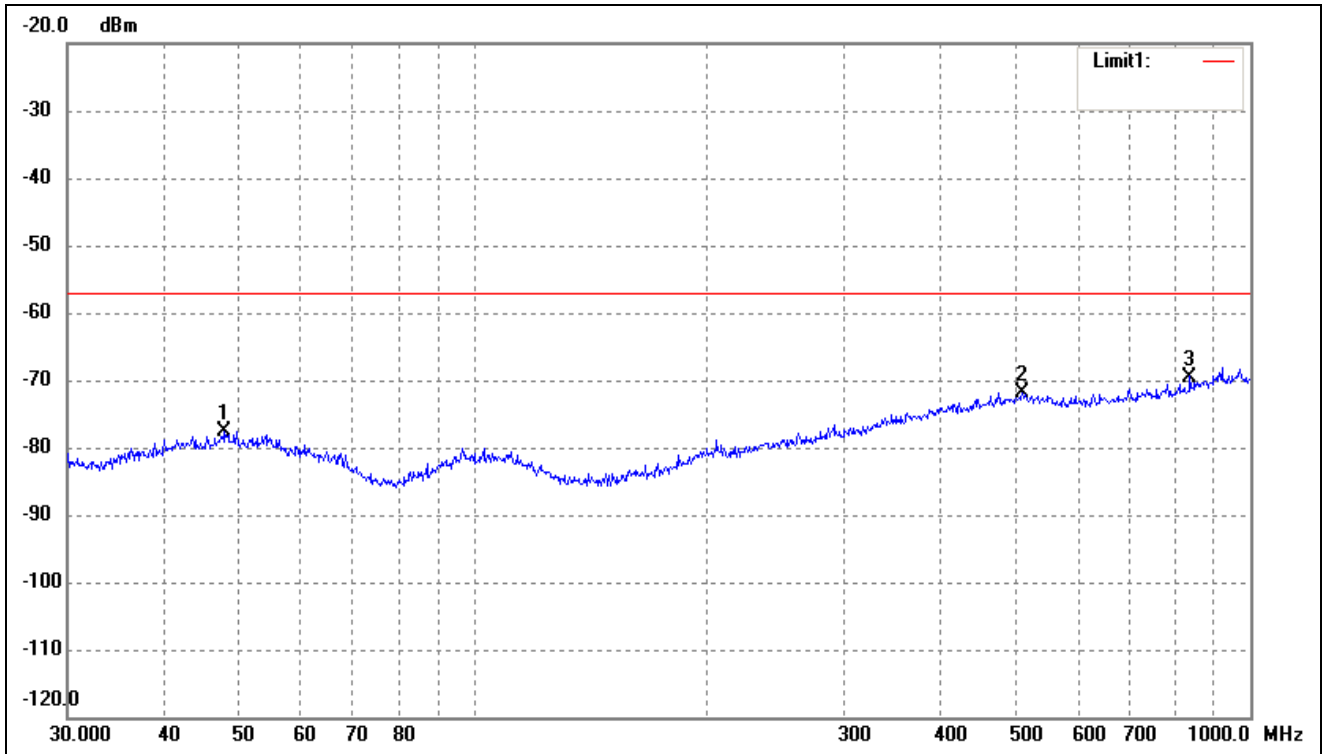
#### 3.4 Summary of Test Results/Plots

According to the data sheet, the EUT complied with the EN 300 440 standards, and had the worst margin of:

Receiver Spurious Emission From 30MHz To 1GHz

Test Mode: GPS Receiving mode

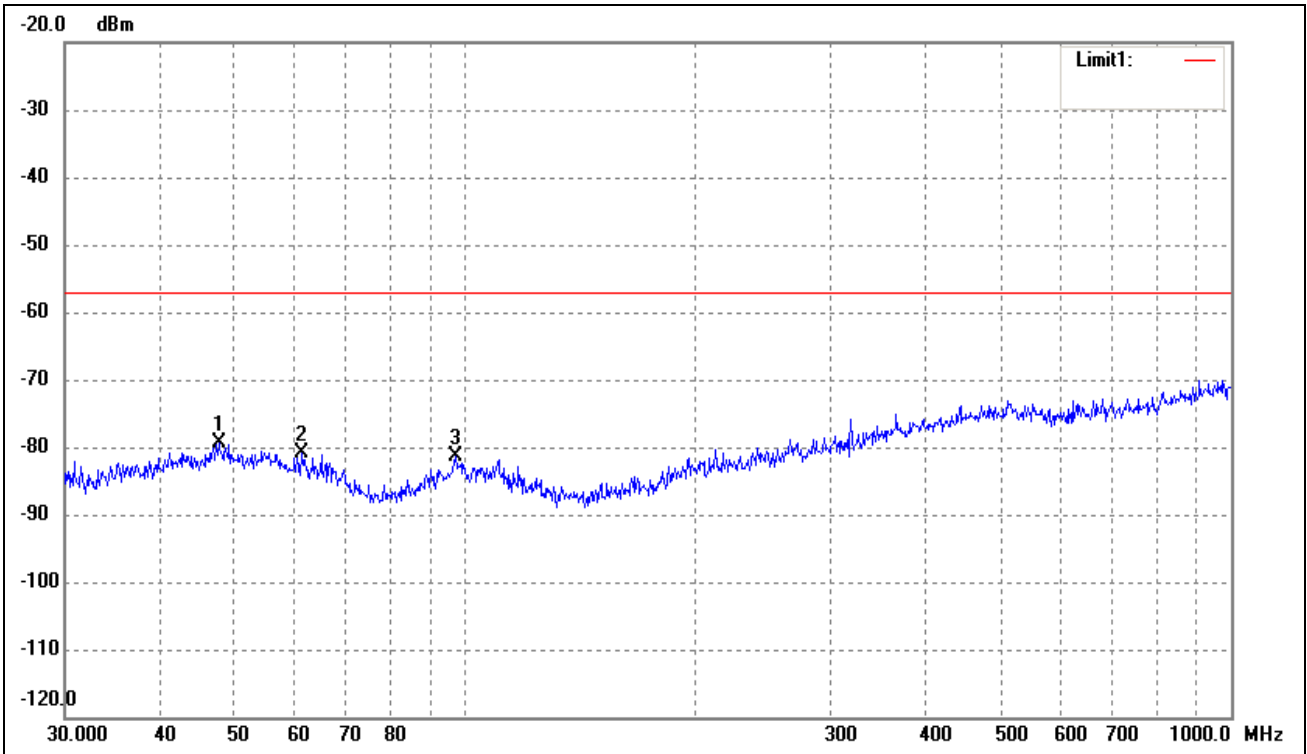
Horizontal:



No.	Frequency (MHz)	Reading (dBm)	Correct (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Detector
1	47.8260	-81.85	4.34	-77.51	-57.00	-20.51	ERP
2	508.2582	-82.60	10.63	-71.97	-57.00	-14.97	ERP
3*	836.2443	-81.71	12.21	-69.50	-57.00	-12.50	ERP



Vertical:



No.	Frequency (MHz)	Reading (dBm)	Correct (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Detector
1*	47.6586	-71.88	-7.46	-79.34	-57.00	-22.34	ERP
2	61.1316	-71.61	-9.22	-80.83	-57.00	-23.83	ERP
3	97.1148	-71.49	-9.91	-81.40	-57.00	-24.40	ERP

Note: Testing is carried out with frequency rang 30MHz to 16GHz, which above 1GHz are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

## EXHIBIT 1 - PRODUCT LABELING

### Proposed CE Label Format

Smart Phone  
Model: VOLT X  
Input: 5V $\overline{\text{---}}$ , 1A or Powered by 3.8V, 4000mAh  
Rechargeable Li-polymer Battery

**CE 0700** 

Gui zhou Fortuneship Technology Co., Ltd.

Specifications: Text is Black in color and is justified. Labels are printed in indelible ink on permanent adhesive backing or silk-screened onto the EUT or shall be affixed at a conspicuous location on the EUT. The 'CE' marking must be affixed to the EUT or to its data plate. Where this is not possible or not warranted on account of the nature of the apparatus, it must be affixed to the packaging, if any, and to the accompanying documents. The 'CE' marking is allowed less than 5 mm but must clear. If the 'CE' marking is reduced or enlarged the proportions given in the above graduated drawing must be respected. The Importer name, address and Manufacturer name and address should indicate on marking label or packaging or in a document accompanying

### Proposed Label Location on EUT

CE Label Location



## EXHIBIT 2 - EUT PHOTOGRAPHS

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EUT View 1



EUT View 2



**EUT View 3****EUT Housing and Board View 1**

### EUT Housing and Board View 2



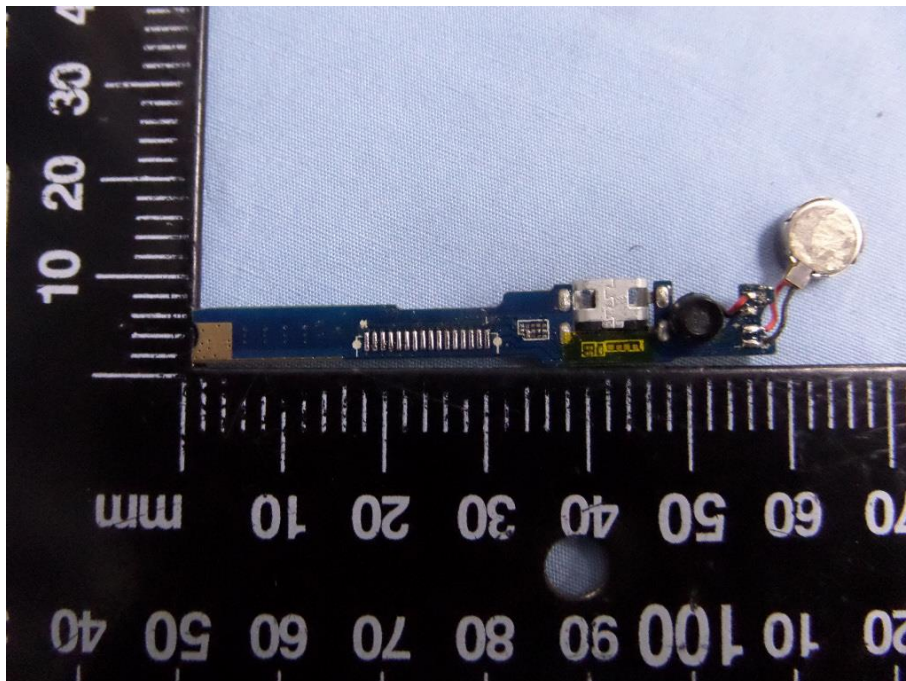
### EUT Housing and Board View 3

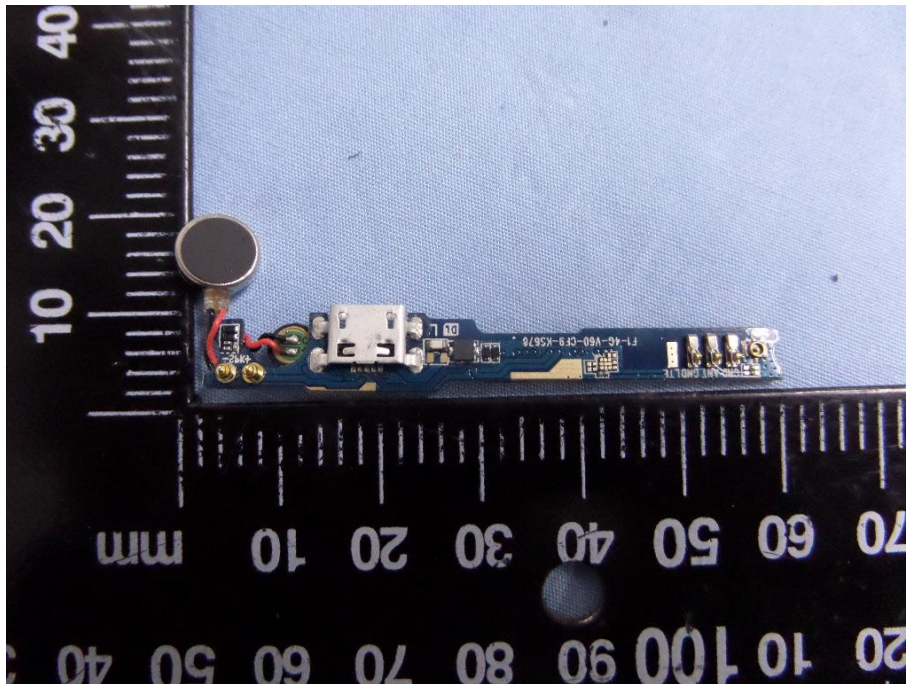
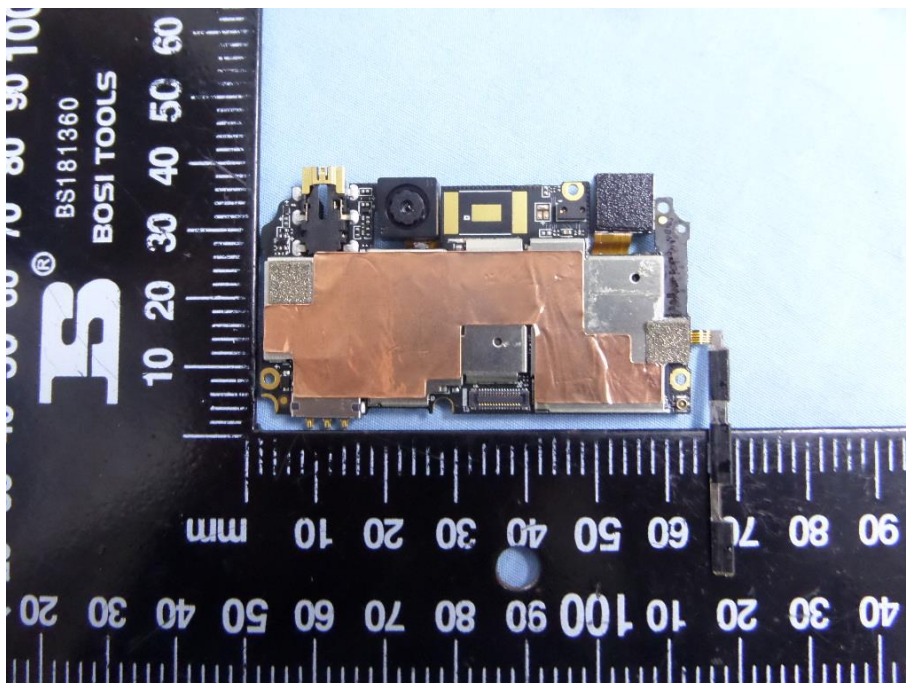


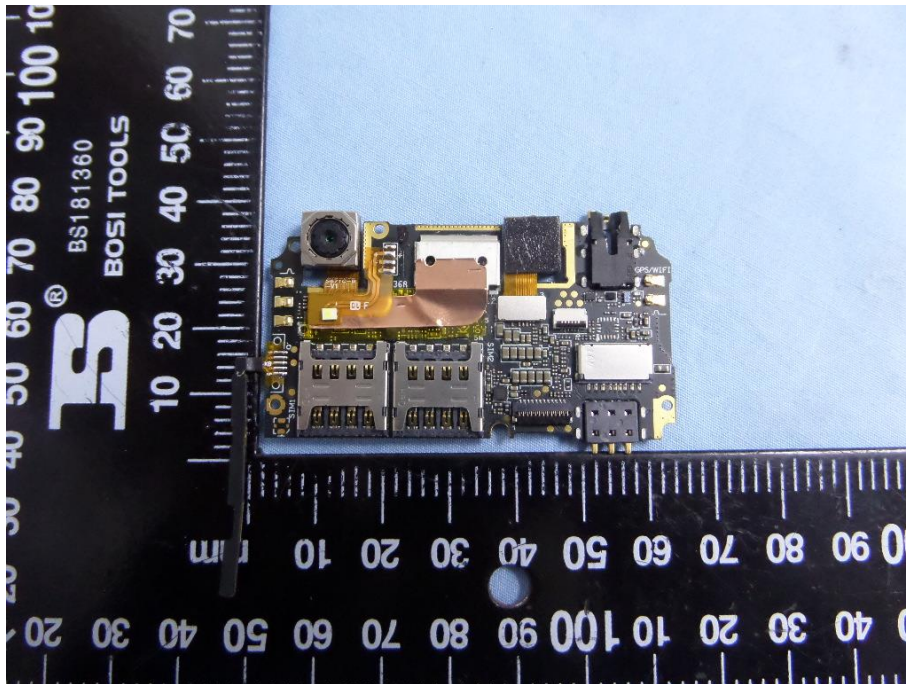
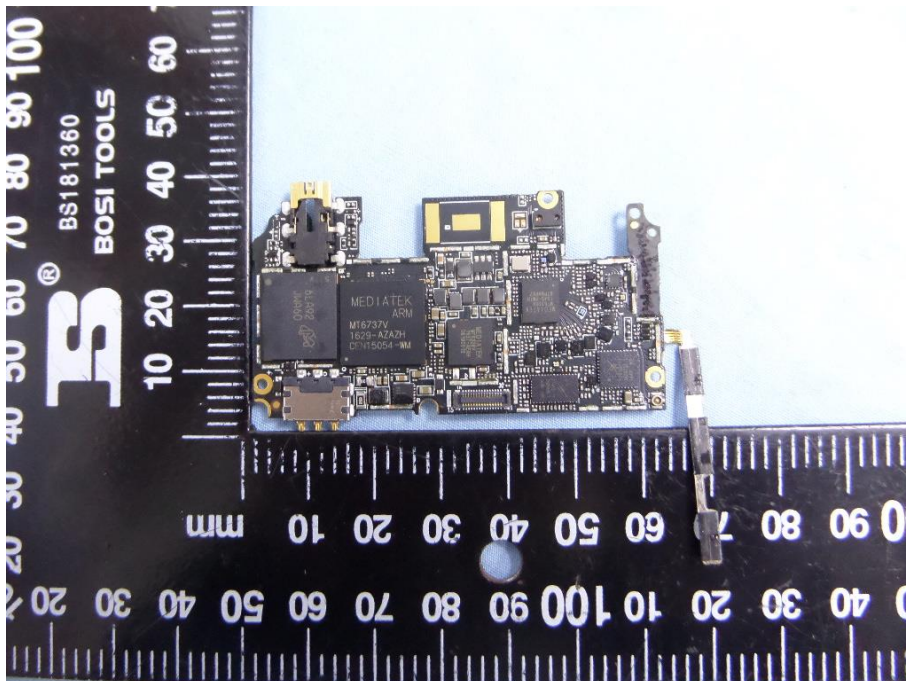
#### EUT Housing and Board View 4



#### Solder Board-Component View 1

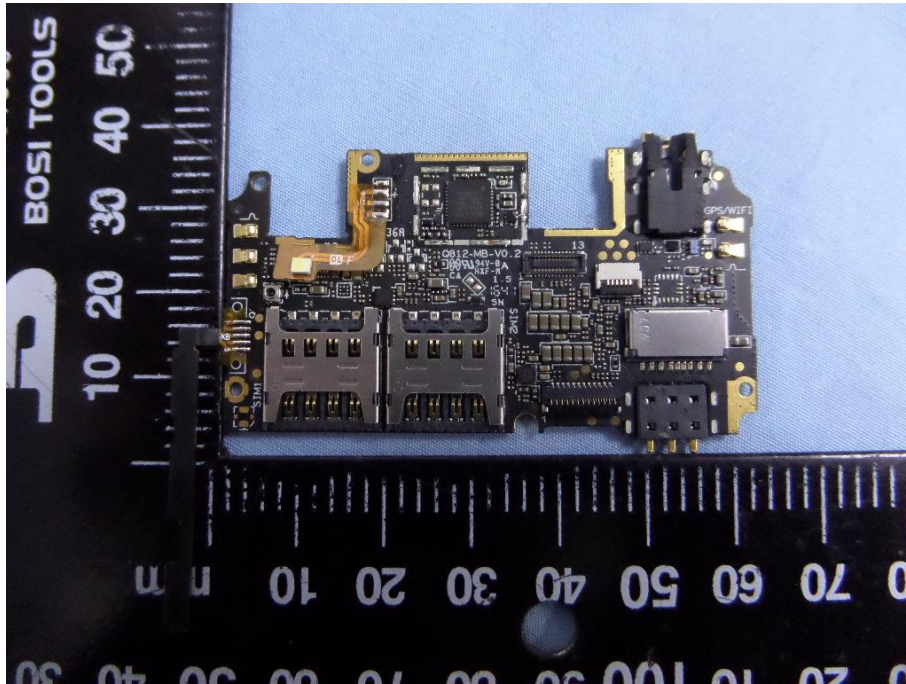


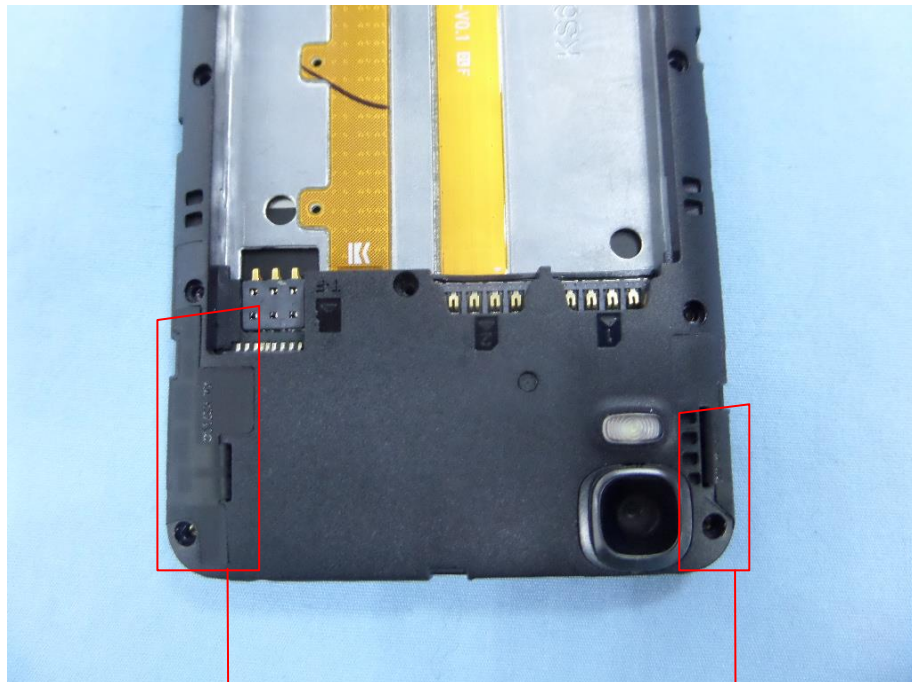
**Solder Board-Component View 2****Solder Board-Component View 3**

**Solder Board-Component View 4****Solder Board-Component View 5**



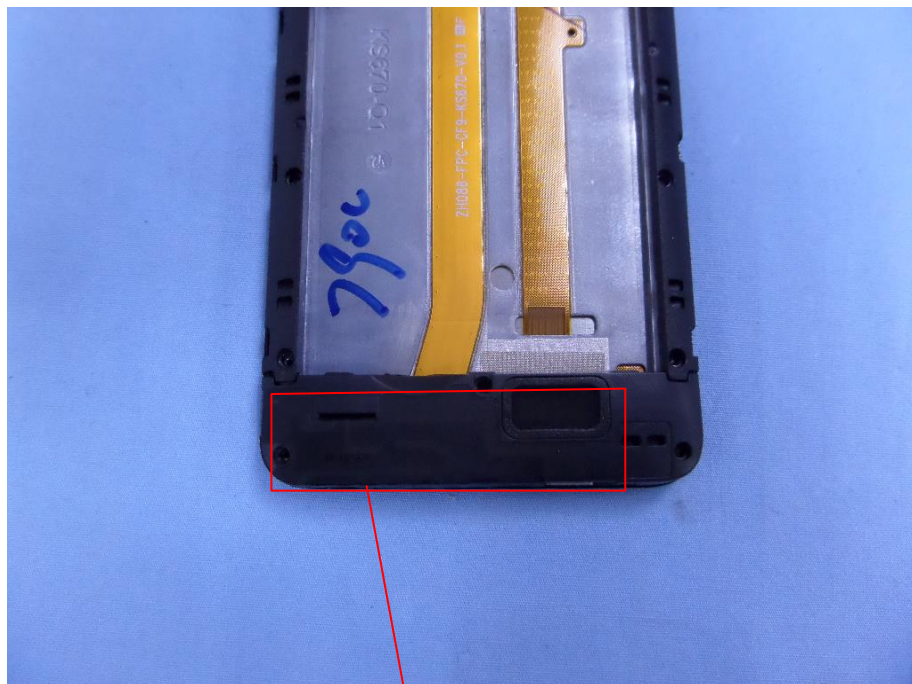
Solder Board-Component View 6



**Antenna View**

Wi-Fi/BT/GPS Ant.

LTE\_Rx Ant.



GSM/WCDMA/LTE Ant.

## EXHIBIT 3 - TEST SETUP PHOTOGRAPHS

### Receiving Spurious Emission Test Setup (Below 1GHz)



### Spurious Emission Test Setup (Above 1GHz)



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