

EN 55013:2013  
EN 55020:2007 + A11:2011  
EN 61000-3-2:2006 + A1:2009 + A2:2009  
EN 61000-3-3:2013

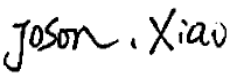

## TEST REPORT

For

### Advanced Technologies SRL

Ion Heliade Radulescu nr 26, Bucharest 021255, ROMANIA

**Tested Model: Xylo Q**  
**Multiple Model: Xylo X**

<b>Report Type:</b> Original Report	<b>Product Type:</b> Smartphone Xylo
<b>Test Engineer:</b> <u>Joson Xiao</u>	
<b>Report Number:</b> <u>RSZ160309003-01B</u>	
<b>Report Date:</b> <u>2016-03-31</u>	
<b>Reviewed By:</b> <u>Suny Sun</u> EMC Manager	
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F I N A L

## GENERAL INFORMATION

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

Advanced Technologies SRL's product, model number: *Xylo Q* (or the "EUT") in this report is a Smartphone *Xylo*, which was measured approximately: 126.9mm (L) x 64.1mm (W) x 10.35mm (H). , the input power is DC3.7 V by battery or DC 5.0 V from adapter. The highest operating frequency is 1.3GHz.

#### Adapter Information:

Model: JT108-0501000

Partnumber: VNA-V50XO

Input: AC 100V-240V, 50/60 Hz, 0.2A

Output: DC 5.0V, 1.0A.

S/N: VAV5X 110252

*Note: The series product, model Xylo X and Xylo Q, they are identical. Model Xylo Q was selected for fully testing, which was explained detailedly in the attached product similarity declaration letter.*

*\* All measurement and test data in this report was gathered from production sample serial number: 1601570. (Assigned by applicant).The EUT supplied by the applicant was received on 2016-03-09.*

### Objective

The following is prepared on behalf of *Advanced Technologies SRL*. in accordance with EN 55013, Limits and methods of measurement of radio interference characteristic of sound and television broadcast receivers and associated equipment, EN 55020, Sound and television broadcast receivers and associated equipment – immunity characteristics- limits and methods of measurement.

EN 61000-3-2, Limits – Limits for harmonic current emissions (equipment input current up to and including 16 A per phase), and also in accordance with EN 61000-3-3, Limits Section 3; Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current<16A.

The objective is to determine the compliance of EUT with EN 55022, EN 55024, EN 61000-3-2 and EN 61000-3-3

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

No related submittal(s).

### Test Methodology

All measurements contained in this report were conducted with CISPR 16-1-1:2010, specification for radio disturbance and immunity measuring apparatus and methods P1-1: radio disturbance and immunity measuring apparatus measuring apparatus. CISPR 16-1-4:2012, Specification for radio disturbance and immunity measuring apparatus and methods-Part 1-4: Radio disturbance and immunity measuring apparatus -Ancillary equipment -Radiated disturbances. CISPR 16-2-1:2013, Specification for radio disturbance and immunity measuring apparatus and methods – Part 2-1: Methods of measurement of disturbances and immunity – Conducted disturbance measurements. CISPR 16-2-3:2010, specification for radio disturbance and immunity measuring apparatus and methods P2-3 methods of measurement of disturbances and immunity radiated disturbance measurements. CISPR 16-4-2:2011, Specification for radio disturbance and immunity measuring apparatus and methods-Part 4-2: Uncertainties, statistics and limit modeling-Uncertainty in EMC measurements. All radiated and conducted emissions measurements

were performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 Meters.

### **Test Facility**

The test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) 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 October 31, 2013. 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.: 382179. 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

N/A

### Equipment Modifications

No modifications were made to the EUT tested.

### Support Equipment List and Details

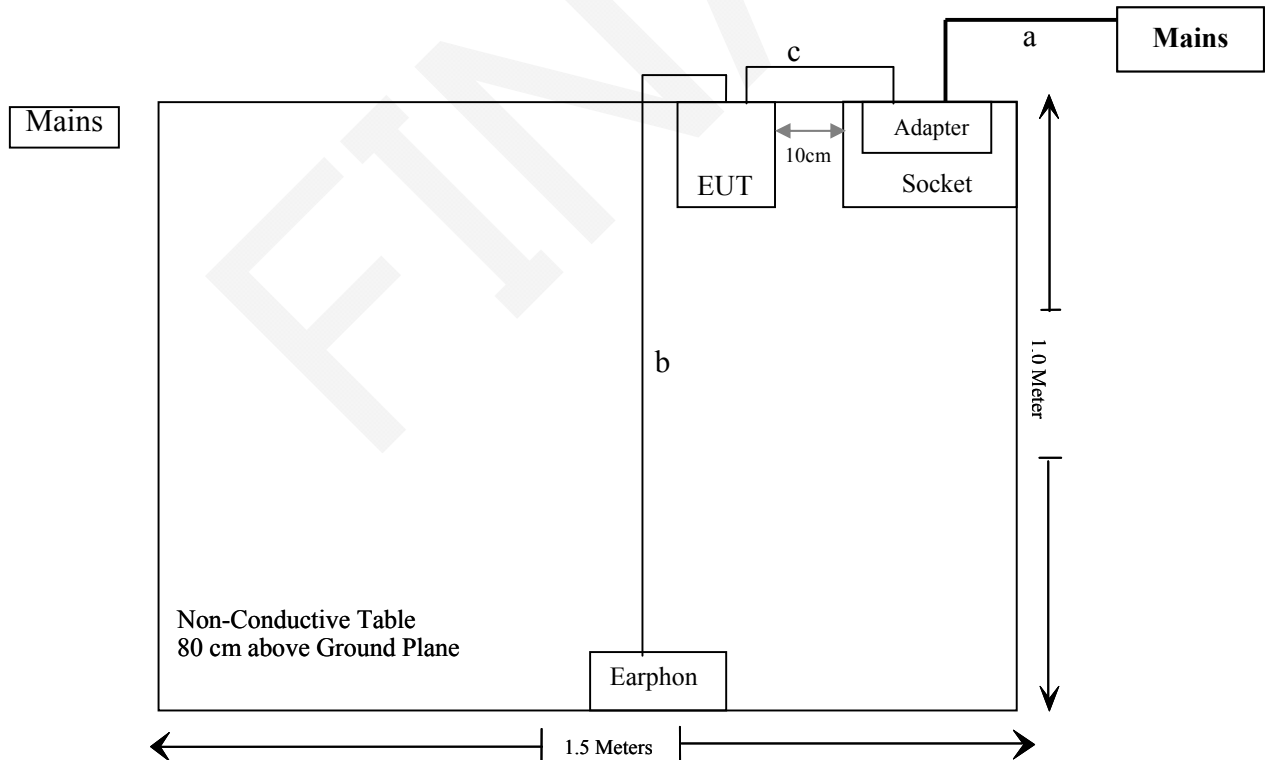
Manufacturer	Description	Model	Serial Number
N/A	earphone	N/A	2365284
Sandisk	T-F card	N/A	3491
BULL	Socket	GN-415K	5503290068073
TCL	Monitor	TFT1560PS	ALA560S05C180409
LENOVO	PC	ASJ	L3AC997
DELL	PC	DCSCSF	127BP2X
ECOM	Modem	56000bps	21654684
LISTED	Adapter1	TYP60-1207000Z	326703
Microsoft	Keyboard	1406	0200706128743
Microsoft	Mouse	1405	0204608630856

**External I/O Cable**

Cable Description	Length (m)	From / Port	To
Un-shielding Un-detachable AC cable	1.2	socket	Mains
Un-shielding Un-detachable earphone cable	1.5	earphone	EUT
Shielding Detachable USB cable	0.75	adapter	EUT
Un-shielding Detachable AC cable	1.2	monitor	Mains
Shielding Detachable VGA cable	1.4	monitor	PC
Un-shielding Detachable AC cable	1.5	PC	Mains
Un-shielding Un-detachable earphone cable	1.5	earphone	EUT
Shielding Detachable USB cable	0.75	adapter	EUT
Shielding Detachable RS232 cable	1.6	Modem	EUT
Un-shielding Un-detachable DC cable	1.4	Modem	adapter1
Un-shielding Detachable AC cable	1.6	Mains	adapter1
Shielding Un-detachable USB cable	1.6	Keyboard	PC
Shielding Un-detachable USB cable	1.6	Mouse	PC

**Block Diagram of Test Setup**

Test mode: Charging & FM





## SUMMARY OF TEST REPORT

### EN 55013

Rule	Description	Results
§ 4.2	Disturbance Voltage at the mains Terminals	Compliance
§ 4.3	Disturbance Voltage at the Antenna Terminals	Not Applicable
§4.5	Disturbance Power	Not Applicable
§ 4.6	Radiated Disturbances	Compliance
§ 4.7	Radiated Power	Not Applicable

### EN 55020

Rule	Description	Results
§4.3	Immunity requirements for the antenna input connector	Not Applicable
§4.4	Immunity requirements for audio connectors	Not Applicable
§4.5, §4.6.1	Immunity requirements for AC mains power connectors & Limits of immunity to RF voltages of mains supply terminal and loudspeaker and headphone terminals	Compliance
§4.7	Immunity requirements for the enclosure port	Compliance

### EN 61000-3-2

Rule	Description	Results
§7	Harmonic Current Emissions	Compliance

### EN 61000-3-3

Rule	Description	Results
§5	Voltage Fluctuation and Flicker	Compliance

## EN 55013 §4.2- DISTURBANCE VOLTAGE AT THE MAINS TERMINALS

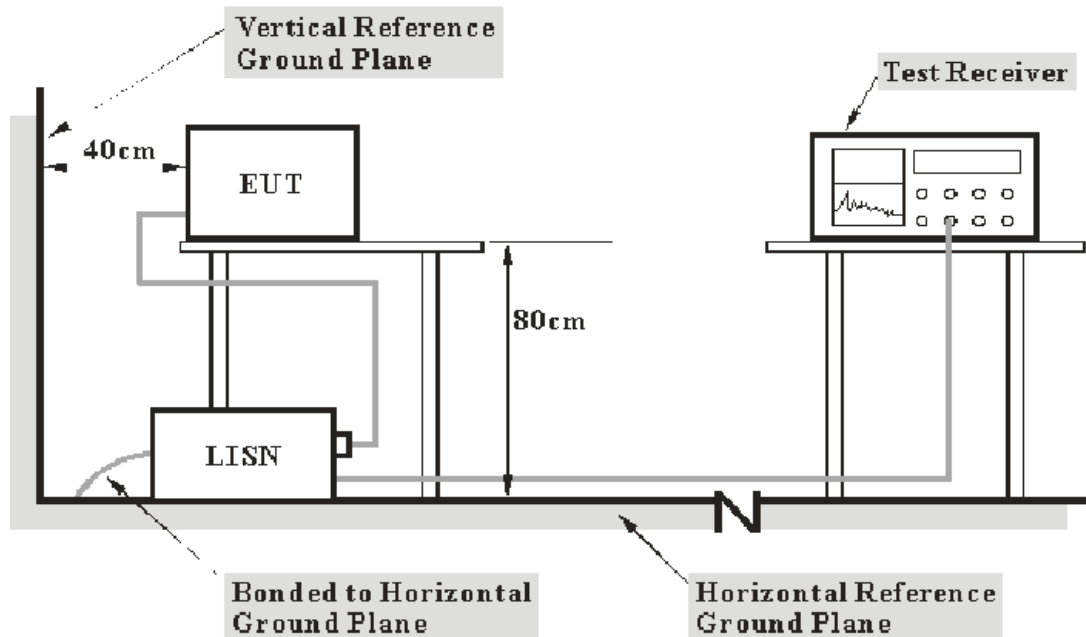
### Measurement Uncertainty

Input quantities to be considered for conducted disturbance measurements maybe receiver reading, attenuation of the connection between LISN/ISN and receiver, LISN/ISN voltage division factor, LISN/ISN VDF frequency interpolation and receiver related input quantities, etc.

Based on CISPR 16-4-2:2011, the expended combined standard uncertainty of conducted disturbance test at Bay Area Compliance Laboratories Corp. (Shenzhen) is shown as below. And the uncertainty will not be taken into consideration for the test data recorded in the report

Port	Expanded Measurement uncertainty
AC Mains	3.34 dB (k=2, 95% level of confidence)
CAT 3	3.72 dB (k=2, 95% level of confidence)
CAT 5	3.74 dB (k=2, 95% level of confidence)
CAT 6	4.54 dB (k=2, 95% level of confidence)

### Test System Setup



- Note:**
1. Support units were connected to second LISN.
  2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with CISPR 16-1, CISPR 16-2 measurement procedure. The specification used was the EN 55013 limits. The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

The Socket was connected to a 230 VAC/50 Hz power source.

### EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

### Test Procedure

Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance using all installation combination.

All final data was recorded in the Quasi-peak and average detection mode.

### Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCS30	100176	2015-06-03	2016-06-03
Rohde & Schwarz	LISN 1	ENV216	3560.6650.12-101613-Yb	2015-06-09	2016-06-09
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2015-05-14	2016-05-14
Rohde & Schwarz	CE Test software	EMC 32	V8.53	NCR	NCR

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

### Corrected Factor & Margin Calculation

The Corrected factor is calculated by adding LISN/ISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

$$\text{Correction Factor} = \text{LISN/ISN VDF} + \text{Cable Loss} + \text{Transient Limiter Attenuation}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB 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 recorded data in following table, the worst margin reading as below:

**11.3 dB at 0.620610 MHz in the Line conducted mode**

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

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

In BACL,  $U_{(L_m)}$  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

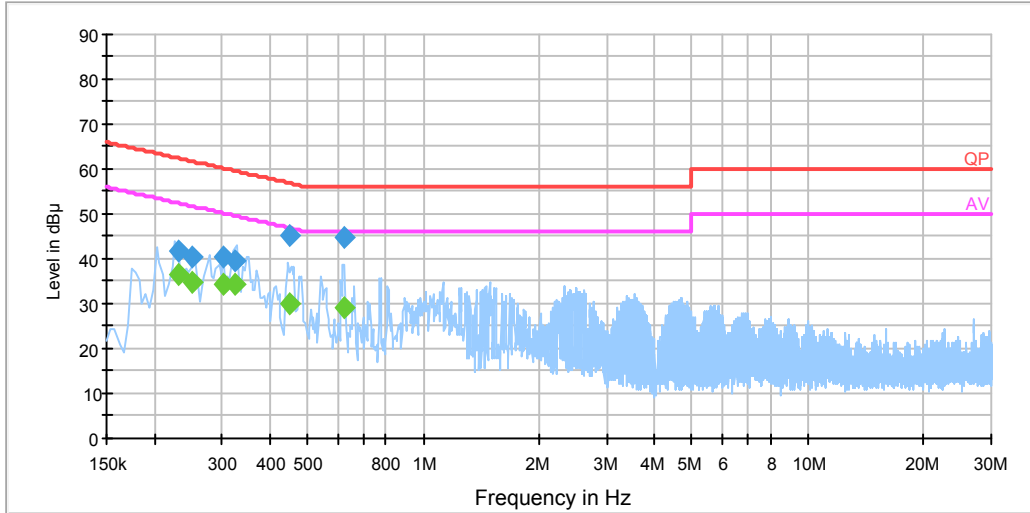
Temperature:	23 °C
Relative Humidity:	60 %
ATM Pressure:	101.0 kPa

*The testing was performed by Joson Xiao on 2016-03-23.*

EUT operation mode: Charging & FM

AC 230V/50 Hz, Line

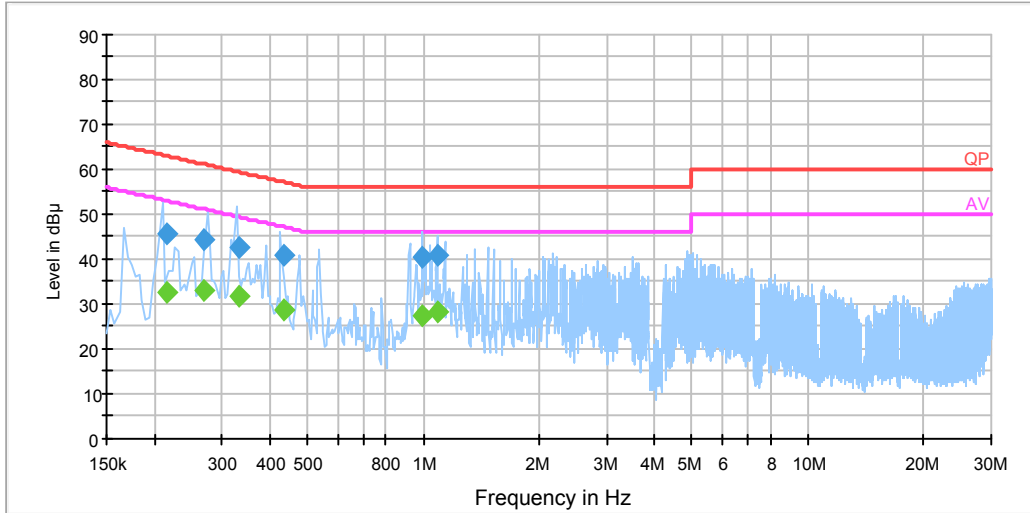
EMI Auto Test L



Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/Ave./QP)
0.230500	41.6	20.0	62.4	20.8	QP
0.230500	36.4	20.0	52.4	16.1	Ave.
0.249500	40.5	20.0	61.8	21.3	QP
0.249500	34.7	20.0	51.8	17.1	Ave.
0.301470	40.3	19.9	60.2	19.9	QP
0.301470	34.6	19.9	50.2	15.7	Ave.
0.325110	39.4	19.9	59.6	20.2	QP
0.325110	34.4	19.9	49.6	15.2	Ave.
0.447310	45.4	19.9	56.9	11.6	QP
0.447310	30.1	19.9	46.9	16.8	Ave.
0.620610	44.7	19.9	56.0	11.3	QP
0.620610	29.0	19.9	46.0	17.0	Ave.

**AC 230V/50 Hz, Neutral**

EMI Auto Test N



Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/Ave./QP)
0.214501	45.8	20.0	63.0	17.3	QP
0.214501	32.7	20.0	53.0	20.4	Ave.
0.269500	44.4	19.9	61.1	16.7	QP
0.269500	33.2	19.9	51.1	18.0	Ave.
0.330890	42.5	19.9	59.4	16.9	QP
0.330890	31.7	19.9	49.4	17.8	Ave.
0.432390	40.9	19.9	57.2	16.3	QP
0.432390	28.6	19.9	47.2	18.7	Ave.
0.991090	40.2	20.0	56.0	15.8	QP
0.991090	27.3	20.0	46.0	18.7	Ave.
1.093710	41.0	20.0	56.0	15.0	QP
1.093710	28.2	20.0	46.0	17.8	Ave.

**Note:**

- 1) Corrected Amplitude = Reading + Correction Factor
- 2) Correction Factor = LISN VDF (Voltage Division Factor) + Cable Loss + Transient Limiter Attenuation
- 3) Margin = Limit - Corrected Amplitude

## EN 55013 §4.6 - RADIATED DISTURBANCES

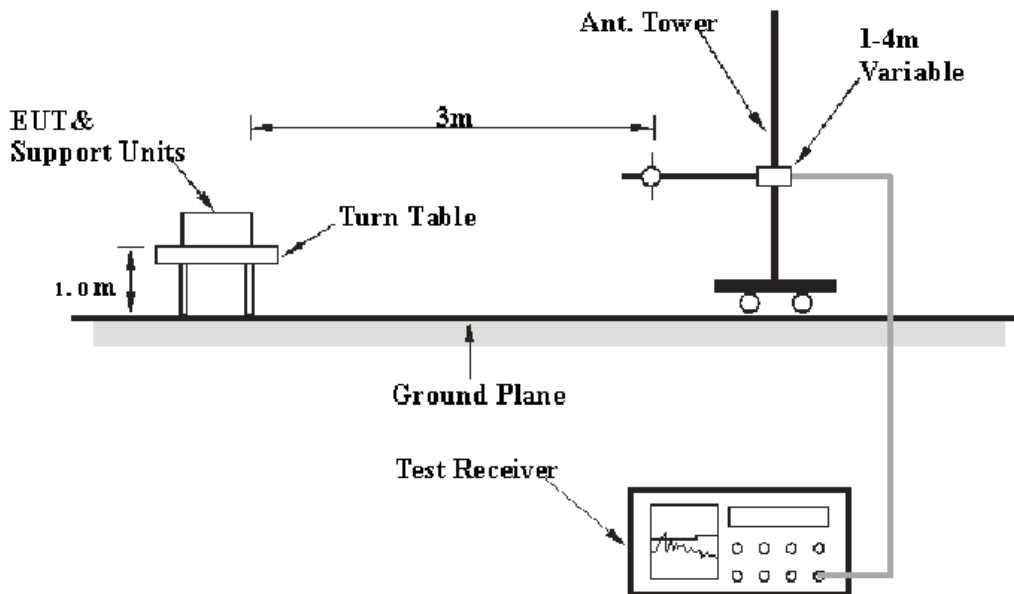
### Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR 16-4-2:2011, the expended combined standard uncertainty of radiation emissions at Bay Area Compliance Laboratories Corp. (Shenzhen) is shown in below table. And the uncertainty will not be taken into consideration for the test data recorded in the report

Frequency	Polarity	Measurement uncertainty
30MHz~200MHz	Horizontal	4.04dB (k=2, 95% level of confidence)
	Vertical	4.52dB (k=2, 95% level of confidence)
200MHz~1GHz	Horizontal	4.72 dB (k=2, 95% level of confidence)
	Vertical	5.81 dB (k=2, 95% level of confidence)

### Test System Setup



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the CISPR 16-1-4:2012, CISPR16-2-3:2010. The specification used was EN 55013.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

### EMI Test Receiver Setup

The system was investigated from 30 MHz to 1 GHz.

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

Frequency Range	RBW	Video B/W	IF B/W	Detector
30MHz – 1000 MHz	100 kHz	300 kHz	120kHz	QP

### Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
TDK	Chamber	Chamber A	2#	2015-10-15	2018-10-15
HP	Amplifier	HP8447E	1937A01046	2015-05-06	2016-05-06
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2015-11-03	2016-11-03
Sunol Sciences	Bi-log Antenna	JB1	A040904-2	2014-12-07	2017-12-06
Tianquan	Antenna	N/A	N/A	NCR	NCR
HP	HP signal generator	8657A	3217A04699	NCR	NCR
Rohde & Schwarz	Auto test Software	EMC32	V9.10	NCR	NCR

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

### Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All final data was recorded in the Quasi-peak detection mode from 30 MHz to 1 GHz

### 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:

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

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 worst margin reading as below

**5.06 dB at 30.153750 MHz in the Vertical polarization mode**

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

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

In BACL,  $U_{(L_m)}$  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

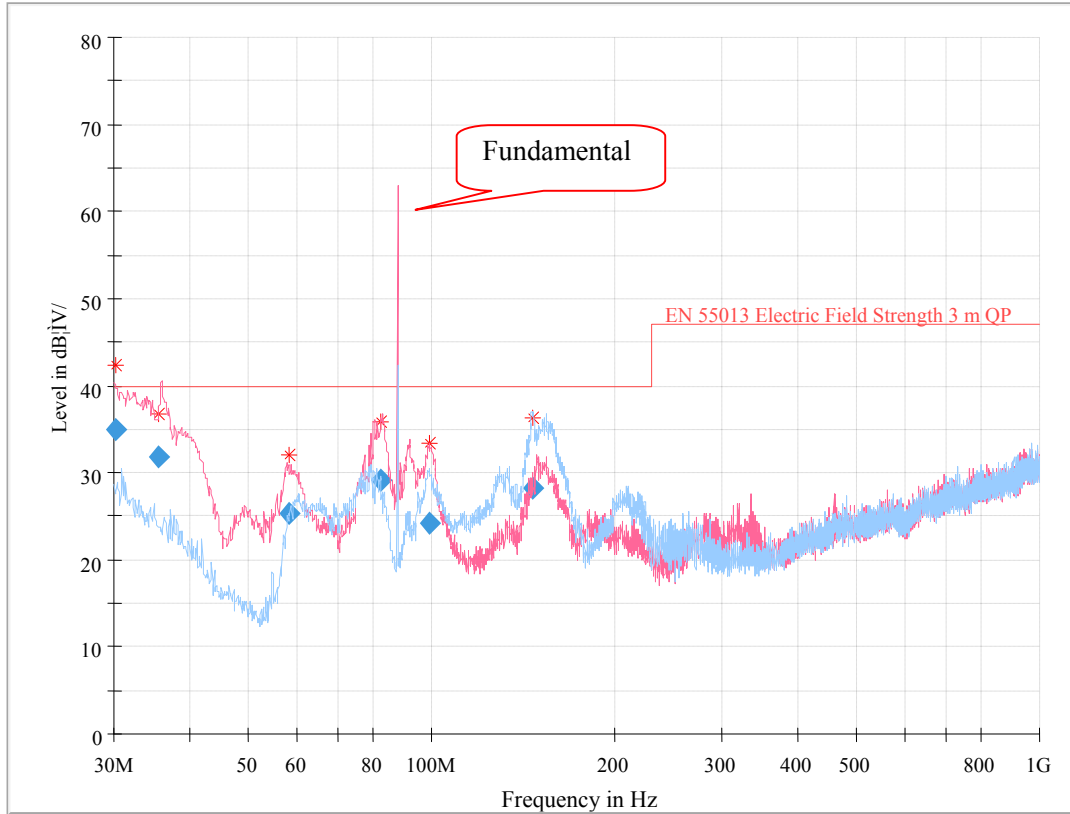
<b>Temperature:</b>	22 °C
<b>Relative Humidity:</b>	48 %
<b>ATM Pressure:</b>	101.0 kPa

*The testing was performed by Joson Xiao on 2016-03-17.*

**30 MHz ~ 1000 MHz:**

Test mode: Charging & FM

Full Spectrum



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna height (cm)	Antenna Polarity	Turntable position (deg)	Correction Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
30.153750	34.94	200.0	V	17.0	0.0	40.00	5.06
35.660875	31.82	205.0	V	282.0	-4.6	40.00	8.18
58.391000	25.27	202.0	V	193.0	-14.0	40.00	14.73
82.669000	29.10	204.0	V	324.0	-13.2	40.00	10.90
98.892250	24.23	206.0	V	20.0	-11.1	40.00	15.77
147.000625	28.19	180.0	H	286.0	-7.8	40.00	11.81

Note:

1. Corrected Amplitude = Meter Reading + Correction Factor
2. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain
3. Margin = Limit – Corrected Amplitude

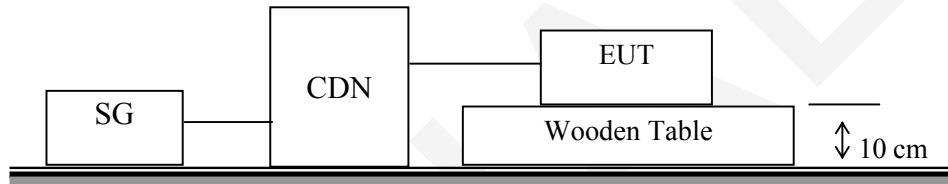
**EN 55020 §4.5 & §4.6.1- RF VOLTAGE COMMON MODE**

**Test Equipment**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EM Test	C/S Tester	CWS500	303277	2015-11-03	2016-11-03
EM Test	CDN	M3	1201-05	2015-11-03	2016-11-03
EM Test	Attenuator	6 dB	120518	2015-11-12	2016-11-12

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

**Test Setup**



**Test Standard**

EN 55020:2007 + A11:2011 (IEC 61000-4-6:2008)

**Test Level**

Parameter	Test specification	Frequency (MHz)	Level dB(μV) (c.m.f.)
RF voltage Common mode AM modulated signal	1 kHz, 80 % depth	0.15-30	130
		30-100	120
		100-150	120-110 <sup>a</sup>

Note: a represents decreasing linearly with the logarithm of the frequency.

**Performance Criterion: A**

## Test Procedure

- 1) Let the EUT work in test mode and test it.
- 2) The EUT are placed on an insulating support 0.1 m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3 m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).
- 3) The disturbance signal described below is injected to EUT through CDN.
- 4) The EUT operates within its operational mode(s) under intended climatic conditions after power on.
- 5) The frequency range is swept from 150 kHz to 150 MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1 kHz sine wave.
- 6) The rate of sweep shall not exceed  $1.5 \times 10^{-3}$  decades/s. Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.
- 7) Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

## Test Data and Setup Photo

### Environmental Conditions

<b>Temperature:</b>	24 °C
<b>Relative Humidity:</b>	59 %
<b>ATM Pressure:</b>	101.0 kPa

The testing was performed by Joson Xiao on 2016-03-23.

Test mode: Charging & FM

Parameter	Test Specification	Frequency (MHz)	Level dB(μV) (e.m.f.)	Test Result
RF voltage Common mode AM modulated signal	1 kHz, 80 % depth	0.15-10	130	Pass
		10-30	120	
		30-150	120-110	
Note: a represents Decreasing linearly with the logarithm of the frequency.				



**Test setup photo**

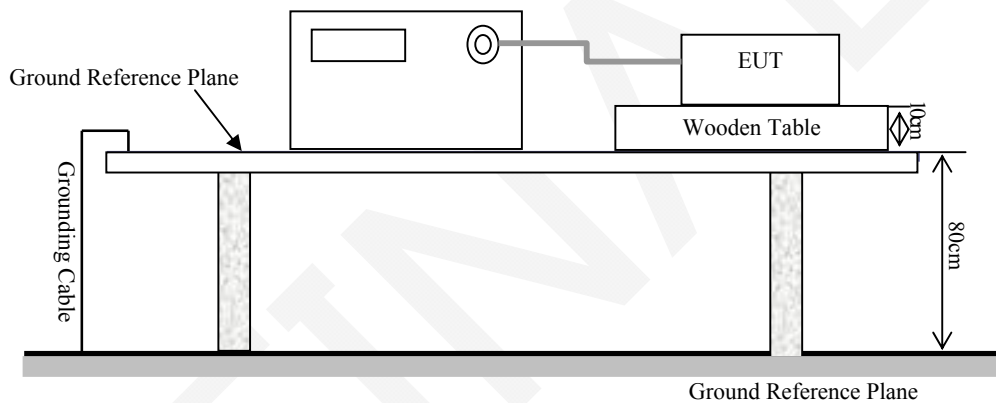
**EN 55020 §4.5- ELECTRICAL FAST TRANSIENTS**

**Test Equipment**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EM Test	EMS Combination Tester	UCS 500 M6	V0939105172	2015-11-03	2016-11-03
EM TEST	AC Source	MV2616	V0939105173	2015-11-03	2016-11-03
EM Test	Test Software	Iec. Control	V5.1.3.0	NCR	NCR

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

**Test System Setup**



**Test Standard**

EN 55020:2007 + A11:2011 (IEC 61000-4-4:2012)  
 Test level 2 at 1 kV

**Test Level**

Open Circuit Output Test Voltage ±10%		
Level	On Power Supply Lines	On I/O (Input/Output) Signal data and control lines
1	0.5 kV	0.25 kV
2	1 kV	0.5 kV
3	2 kV	1 kV
4	4 kV	2 kV
X	Special	Special

**Performance Criterion: B**

**Test Procedure**

The EUT was arranged for Power Line Coupling and for I/O Line Coupling through a capacitive clamp, where applicable. (Note: The I/O coupling test using a capacitive clamp is performed on the I/O interface cables that are longer in length than 3 meters.) A metal ground plane 2.4 meter by 2.0 meter was placed between the floor and the table and is connected to the earth by a 2.0 meter ground rod. The ground rod is connected to the test facility’s electrical earth.

**Test Data and Setup Photo**

**Environmental Conditions**

<b>Temperature:</b>	24 °C
<b>Relative Humidity:</b>	59 %
<b>ATM Pressure:</b>	101.0 kPa

The testing was performed by Joson Xiao on 2016-03-23.

Test mode: Charging &FM

IEC 61000-4-4 Test Points		Test Levels (kV)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
AC mains power input ports	L1	/	/	/	/	/	/	/	/
	N	/	/	/	/	/	/	/	/
	PE	/	/	/	/	/	/	/	/
	L1/N	/	/	A	A	/	/	/	/
	L1/PE	/	/	/	/	/	/	/	/
	N/PE	/	/	/	/	/	/	/	/
	L1/N/PE	/	/	/	/	/	/	/	/



**Test Setup Photo**

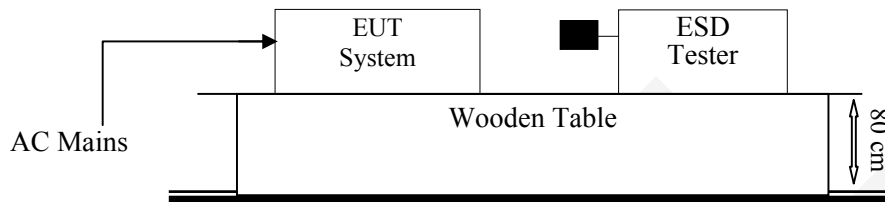


**EN 55020 §4.7 - IMMUNITY REQUIREMENTS FOR THE ENCLOSURE PORT (ELECTROSTATIC DISCHARGE IMMUNITY TEST) (IEC 61000-4-2)**

**Test Equipment**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EM Test	ESD Tester	Dito	302105	2015-11-04	2016-11-04

**Test System Setup**



Remark: ■ is the tip of the electrode

IEC 61000-4-2 specifies that floor mounted equipment shall be placed on an insulating support approximately 10 centimeters above a ground plane. During the tests, the EUT is positioned over a ground reference plane in conformance with this requirement.

The VCP is placed on the table and connected to the ground plane via a metal strap with two 470 k Ohms resistors in series. The EUT and attached cables are isolated from this metal sheet by 0.5-millimeter thick insulating material.

**Test Standard**

EN 55020:2007 + A11:2011 (IEC 61000-4-2:2008)

Air Discharge at ±2 kV, ±4 kV, ±8 kV

Contact Discharge at ±2 kV, ±4 kV

**Test Level**

Level	Test Voltage Contact Discharge (±kV)	Test Voltage Air Discharge (±kV)
1.	2	2
2.	4	4
3.	6	8
4.	8	15
X.	Special	Special

**Performance criterion: B**

## Test Procedure

### Air Discharge:

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

### Contact Discharge:

All the procedure shall be same as Section 8.3.1 of EN 61000-4-2, except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

### Indirect discharge for horizontal coupling plane

At least 50 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT. The discharge electrode positions vertically at a distance of 0.1 m from the EUT and with the discharge electrode touching the coupling plane.

### Indirect discharge for vertical coupling plane

At least 50 single discharges shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m × 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

## Test Data and Setup Photo

### Environmental Conditions

<b>Temperature:</b>	24 °C
<b>Relative Humidity:</b>	59 %
<b>ATM Pressure:</b>	101.0 kPa

*The testing was performed by Joson Xiao on 2016-03-23.*

*Test mode: Charging & FM*

**Table 1: Electrostatic Discharge Immunity (Air Discharge)**

IEC 61000-4-2 Test Points		Test Levels							
		-2 kV	+2 kV	-4 kV	+4 kV	-8 kV	+8 kV	-15 kV	+15 kV
Front	(8 points)	A	A	A	A	A	A	/	/
Rear	(3 points)	A	A	A	A	A	A	/	/
Left	(3 points)	A	A	A	A	A	A	/	/
Right	(2 points)	A	A	A	A	A	A	/	/
Top	(2 points)	A	A	A	A	A	A	/	/
Bottom	(2 points)	A	A	A	A	A	A	/	/

**Table 2: Electrostatic Discharge Immunity (Direct Contact)**

IEC 61000-4-2 Test Points		Test Levels							
		-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV
/		/	/	/	/	/	/	/	/

**Table 3: Electrostatic Discharge Immunity (Indirect Contact HCP)**

IEC 61000-4-2 Test Points		Test Levels							
		-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV
Front Side		A	A	A	A	/	/	/	/
Back Side		A	A	A	A	/	/	/	/
Left Side		A	A	A	A	/	/	/	/
Right Side		A	A	A	A	/	/	/	/

**Table 4: Electrostatic Discharge Immunity (Indirect Contact VCP)**

IEC 61000-4-2 Test Points		Test Levels							
		-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV
Front Side		A	A	A	A	/	/	/	/
Back Side		A	A	A	A	/	/	/	/
Left Side		A	A	A	A	/	/	/	/
Right Side		A	A	A	A	/	/	/	/



Note:  represents air discharge,  represents direct contact



**Test Setup Photo**

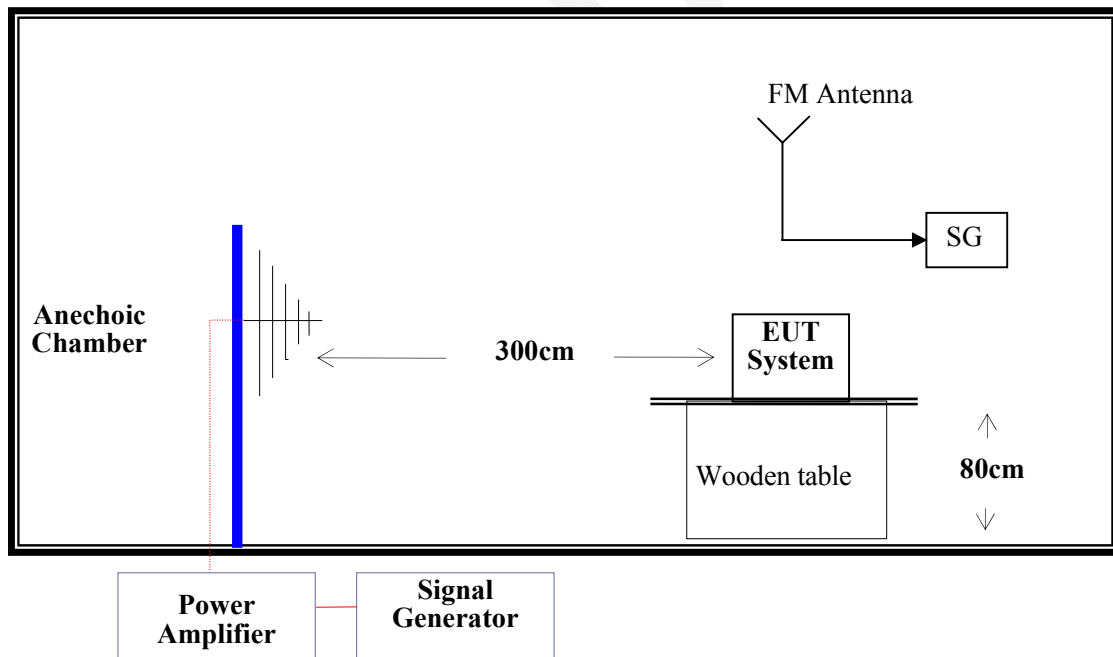
**EN 55020 §4.7 - IMMUNITY REQUIREMENTS FOR THE ENCLOSURE PORT (RF E.M. FIELD KEYED CARRIER) (IEC 61000-4-3)**

**Test Equipment**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Signal Generator	8648C	3426A01345	2015-06-09	2016-06-09
Amplifier Research	Field Monitor	FM5004	302149	2016-01-08	2019-01-08
ETS-Lindgreen	Isotropic Field Probe	HI-6005	69461	2016-01-08	2019-01-08
Amplifier Research	Amplifier Input/Output	200W1000/M2	H1004497	2015-11-12	2016-11-12
Sunol Sciences	Bi-log Antenna	JB1	A040904-1	NCR	NCR
ETS	Fully Anechoic Chamber	A017	3943A017	2013-05-26	2016-05-25
Frank Hoppert	RS Test Software	RSUS	V2.133	NCR	NCR

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

**Test System Setup**



**Test Standard**

EN 55020:2007 + A11:2011 (IEC 61000-4-3:2010)

**Test Level**

Parameter	Frequency (MHz)	Level (dBµV/m)
RF e.m. field AM modulated carrier	0.15 to 150	125
	Except frequency bands: ( $f_i - 0.5$ ) to ( $f_i + 0.5$ )	101
	( $f_o - 0.5$ ) to ( $f_o + 0.5$ )	109
	( $f_{im} - 0.5$ ) to ( $f_{im} + 0.5$ )	109
	87.5 to 108 <sup>a</sup>	109
RF e.m. field Keyed carrier	900MHz, duty cycle 1/8, 217 Hz repetition frequency	3 V/m
Note: $f_i$ is the intermediate frequency (= 10.7 MHz) $f_o = f_i \pm f_i$ is local oscillator frequency $f_{im} = f_i \pm 2f_i$ is the image frequency $f_i$ is the tuned frequency where sign "+" applies when $f_o > f_i$ sign "-" applies when $f_o < f_i$		
a: The frequency range 87.5 MHz to 108 MHz can be varied depending on the use of the FM frequency band on a national basis.		

**Performance criterion: A**

**Test Procedure**

The EUT and its simulators are placed on a turn table which is 0.8 meter above the ground. The EUT is set 3 meters away from the transmitting antenna which is mounted on an antenna tower. Both horizontal and vertical polarization of the antenna is set on test. Each of the four sides of EUT must be faced this transmitting antenna and measured individually. In order to judge the EUT performance, a CCD is used to monitor the EUT.

All the scanning conditions are as follows:

**Test Data and Setup Photo**

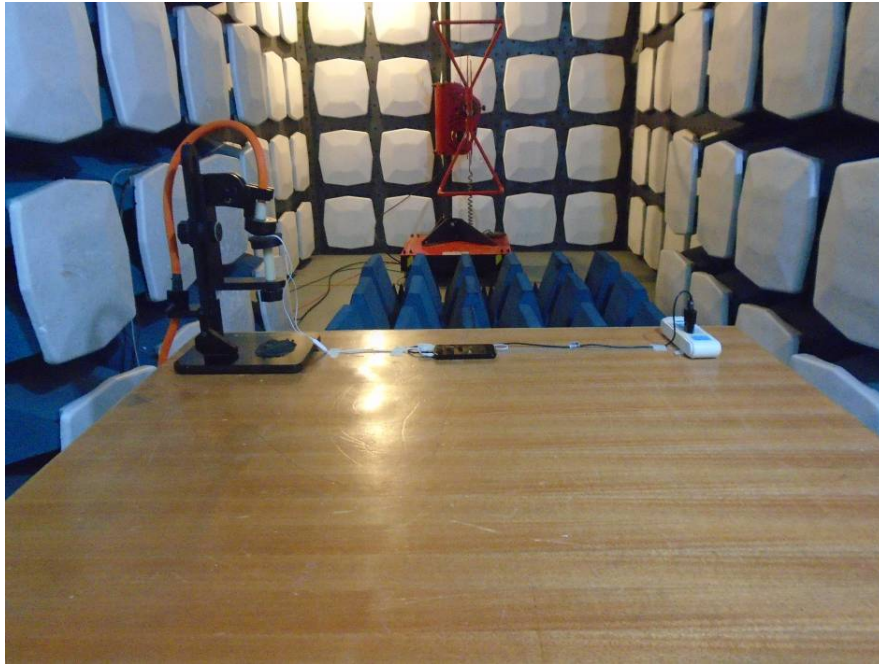
**E Environmental Conditions**

<b>Temperature:</b>	24 °C
<b>Relative Humidity:</b>	59 %
<b>ATM Pressure:</b>	101.0 kPa

The testing was performed by Joson Xiao on 2016-03-23.

Test mode: Charging & FM

Frequency Range (MHz)	Front Side (3 V/m)		Rear Side (3 V/m)		Left Side (3 V/m)		Right Side (3 V/m)	
	VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
0.15-150	A	A	A	A	A	A	A	A
900	A	A	A	A	A	A	A	A



**Test Setup Photo**



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## **EN 61000-3-2 – HARMONIC CURRENT EMISSIONS**

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According to EN 61000-3-2:2006 + A1:2009 + A2:2009 section 7: Equipment with a rated power of 75 W or less, other than lighting equipment, are not included in this standard.

F I N A L

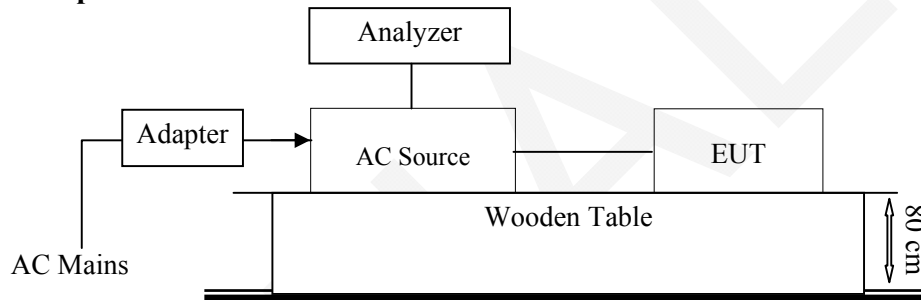
## EN 61000-3-3 – VOLTAGE FLUCTUATION AND FLICKER

### Test Equipment

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EM Test	Harmonic/Flicker Analyzer	DPA 500N	V0939105176	2015-11-12	2016-11-12
EM Test	AC Source	ACS500	303276	2015-11-12	2016-11-12
EM Test	Test Software	DPA. Control	V5.0.3.0	NCR	NCR

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

### Test System Setup



### Test Standard

EN 61000-3-3:2013

### Flicker Test Limits:

The limits shall be applicable to voltage fluctuations and flicker at the supply terminals of the equipment under test, measured or calculated according to clause 4 under test conditions described in clause 6 and annex A. Tests made to prove compliance with the limits are considered to be type tests.

The following limits apply:

- the value of Pst shall not be greater than 1,0;
- the value of Plt shall not be greater than 0,65;
- the value of d(t) during a voltage change shall not exceed 3,3 % for more than 500 ms;
- the relative steady-state voltage change, dc, shall not exceed 3,3 %;
- the maximum relative voltage change dmax, shall not exceed
  - a) 4 % without additional conditions;
  - b) 6 % for equipment which is:
    - switched manually, or
    - switched automatically more frequently than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds), or manual restart, after a power supply interruption.

NOTE: The cycling frequency will be further limited by the Pst and Plt limit. For example: a dmax of 6 % producing a rectangular voltage change characteristic twice per hour will give a Plt of about 0.65.

c) 7 % for equipment which is

- attended whilst in use (for example: hair dryers, vacuum cleaners, kitchen equipment such as mixers, garden equipment such as lawn mowers, portable tools such as electric drills), or
- switched on automatically, or is intended to be switched on manually, no more than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds) or manual restart, after a power supply interruption.

In the case of equipment having several separately controlled circuits in accordance with 6.6, limits b) and c) shall apply only if there is delayed or manual restart after a power supply interruption; for all equipment with automatic switching which is energized immediately on restoration of supply after a power supply interruption, limits a) shall apply; for all equipment with manual switching, limits b) or c) shall apply depending on the rate of switching. Pst and Plt requirements shall not be applied to voltage changes caused by manual switching. The limits shall not be applied to voltage changes associated with emergency switching or emergency interruptions.

## Test Data and Setup Photo

### Environmental Conditions

<b>Temperature:</b>	24 °C
<b>Relative Humidity:</b>	59 %
<b>ATM Pressure:</b>	101.0 kPa

*The testing was performed by Joson Xiao on 2016-03-23.*

Test mode: Charging & FM

<b>Date of test:</b>	14:52 23.Mar 2016
<b>Tester:</b>	Joson Xiao
<b>Standard used:</b>	EN/IEC 61000-3-3 Flicker
<b>Short time (Pst):</b>	10 min
<b>Observation time:</b>	120 min (12 Flicker measurements)
<b>Flicker meter:</b>	230V / 50Hz
<b>Customer:</b>	Advanced Technologies SRL
<b>E. U. T.:</b>	Smartphone Xylo
<b>Model:</b>	Xylo Q
<b>Test mode:</b>	Charging & FM

#### Maximum Flicker results

	<b>EUT values</b>	<b>Limit</b>	<b>Result</b>
<b>Pst</b>	0.028	1.00	Pass
<b>Plt</b>	0.028	0.65	Pass
<b>dc [%]</b>	0.017	3.30	Pass
<b>dmax [%]</b>	0.243	4.00	Pass
<b>dt [s]</b>	0.000	0.50	Pass



**Test Setup photo**

## EXHIBIT A - PRODUCT LABELING

### Proposed CE Label Format



**Specifications:** The marking set out above must be affixed to the apparatus or to its data plate and have a minimum height of 5 mm. The elements should be easily readable and indelible. They may be placed anywhere on the apparatus case or in its battery compartment. No tool should be needed to view the marking.

### Proposed Label Location on EUT



Model: Xylo Q

Model: Xylo X

## EXHIBIT B - EUT PHOTOGRAPHS

Model: Xylo Q

EUT – Front View



EUT – Rear View



**EUT – Top View**



**EUT – Bottom View**





**EUT –Left Side View**



**EUT – Right Side View**



**EUT –Cover off View 1**



**EUT –Cover off View 2**



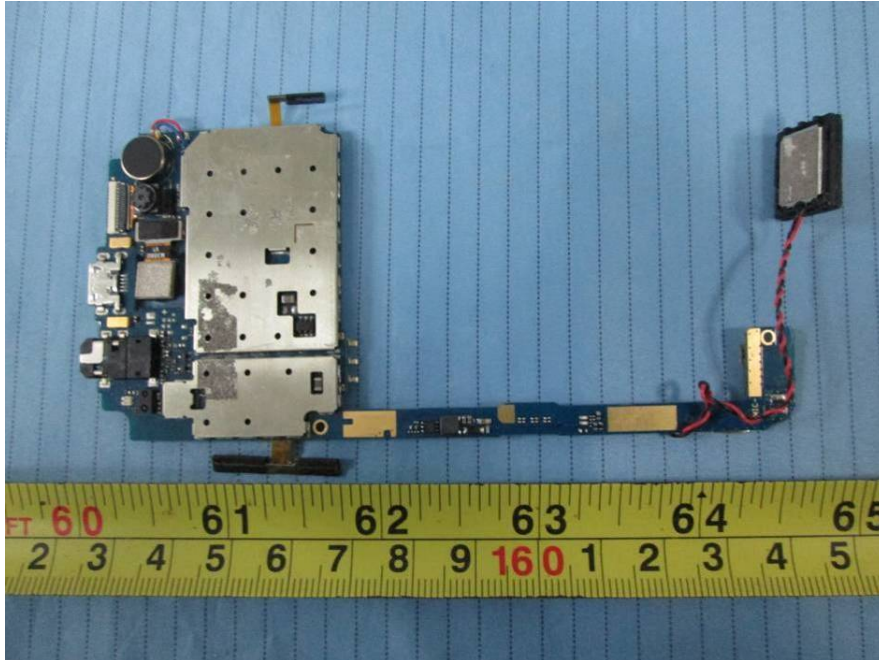
**EUT –Cover off View 3**



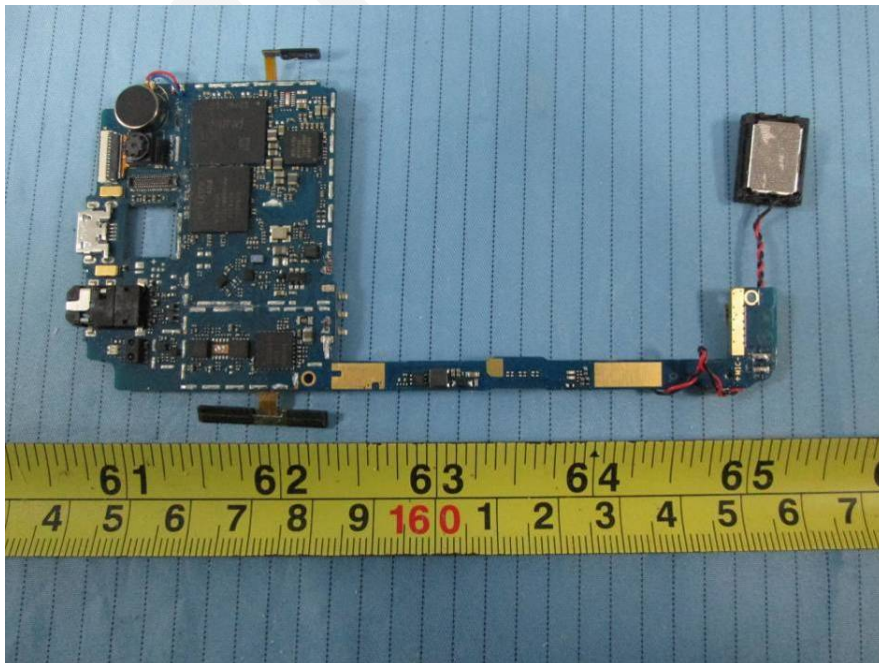
**EUT –Cover off View 4**



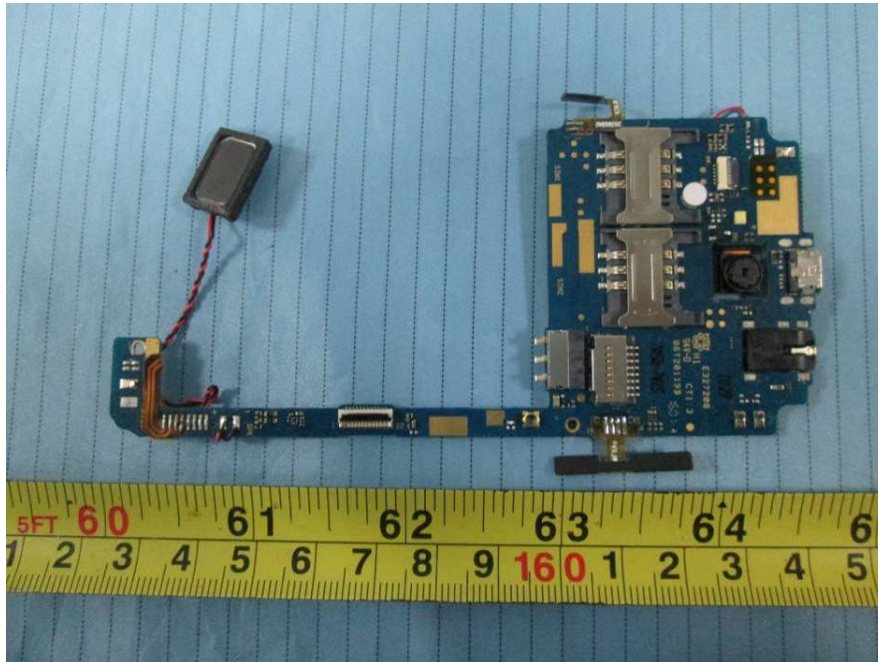
**EUT – Main Board Top View**



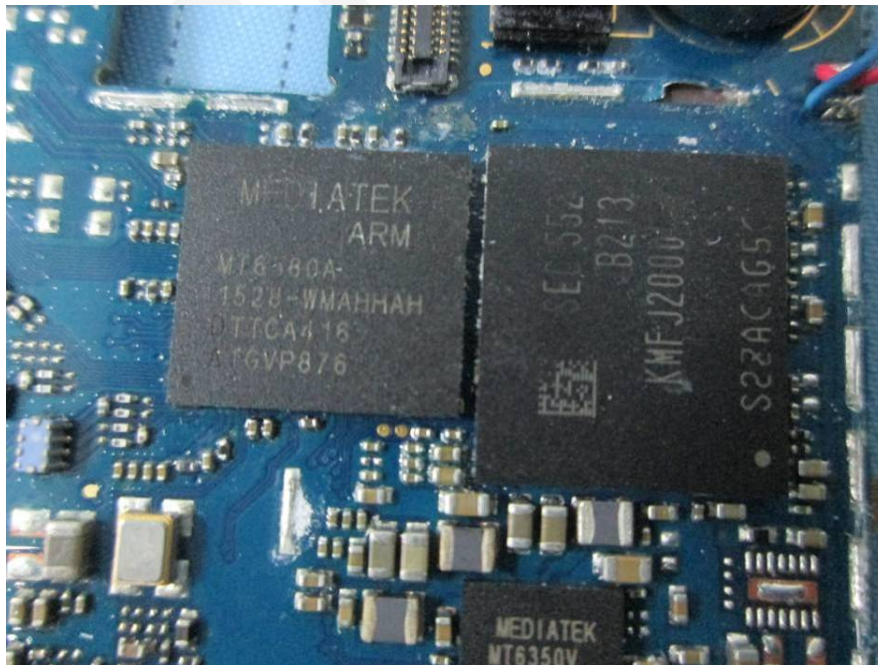
**EUT – Main Board Top Shielding off View**



**EUT – Main Board Bottom View**



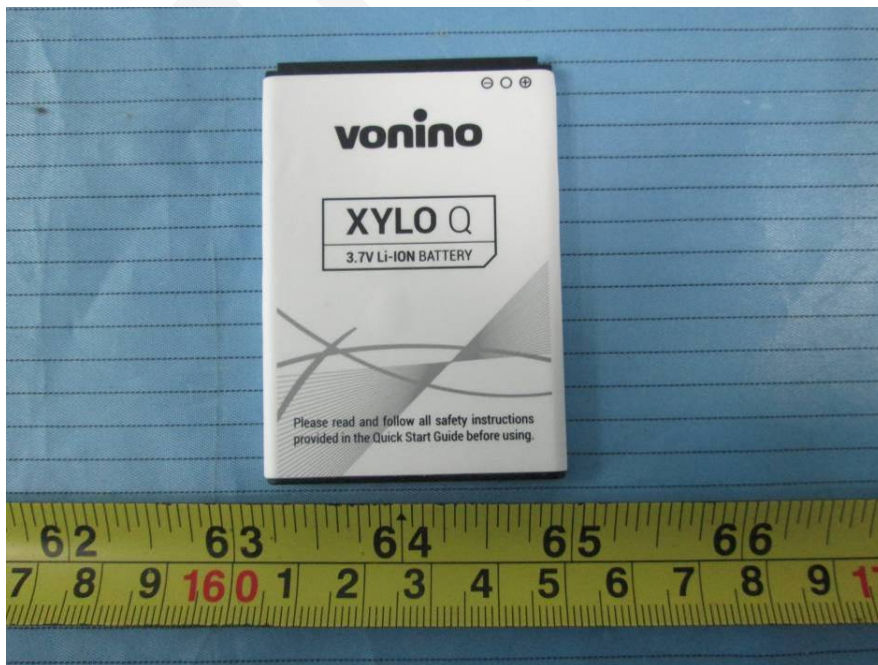
**EUT – IC Chip View**



### EUT – Battery Top View

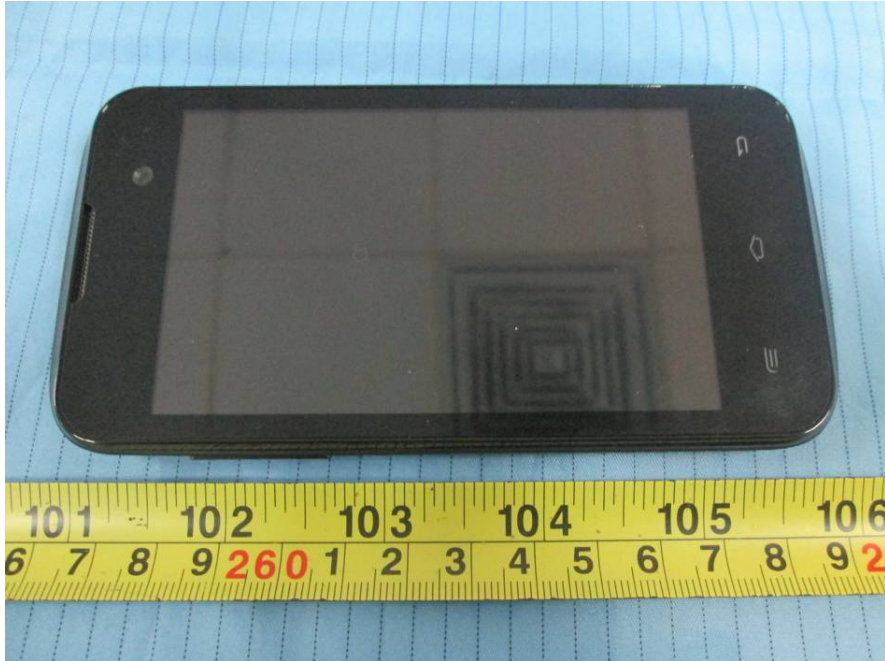


### EUT – Battery Bottom View



**Model: Xylo X**

**EUT – Front View**



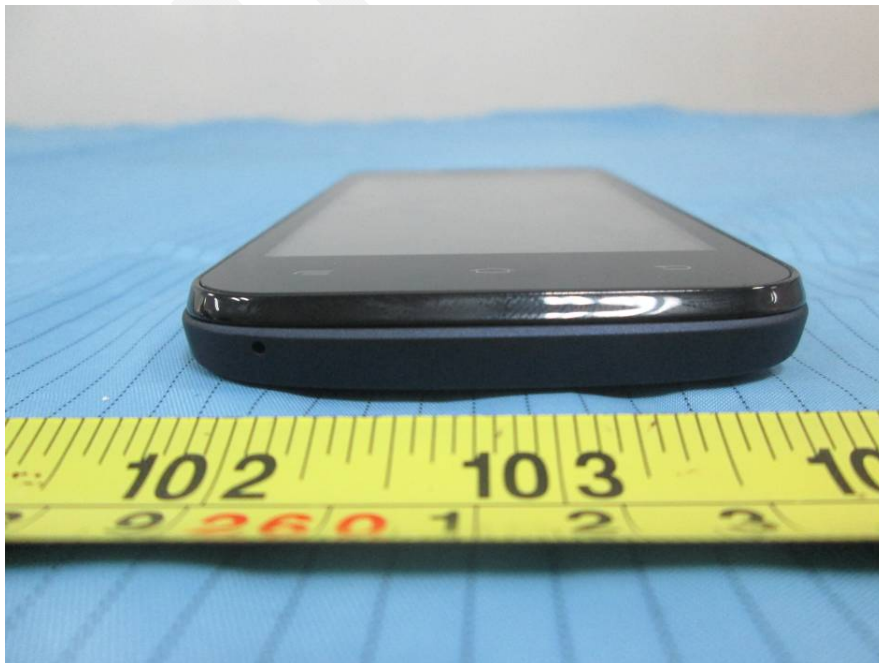
**EUT – Rear View**



**EUT – Top View**



**EUT – Bottom View**





**EUT –Left Side View**



**EUT – Right Side View**



**EUT –Cover off View 1**



**EUT –Cover off View 2**



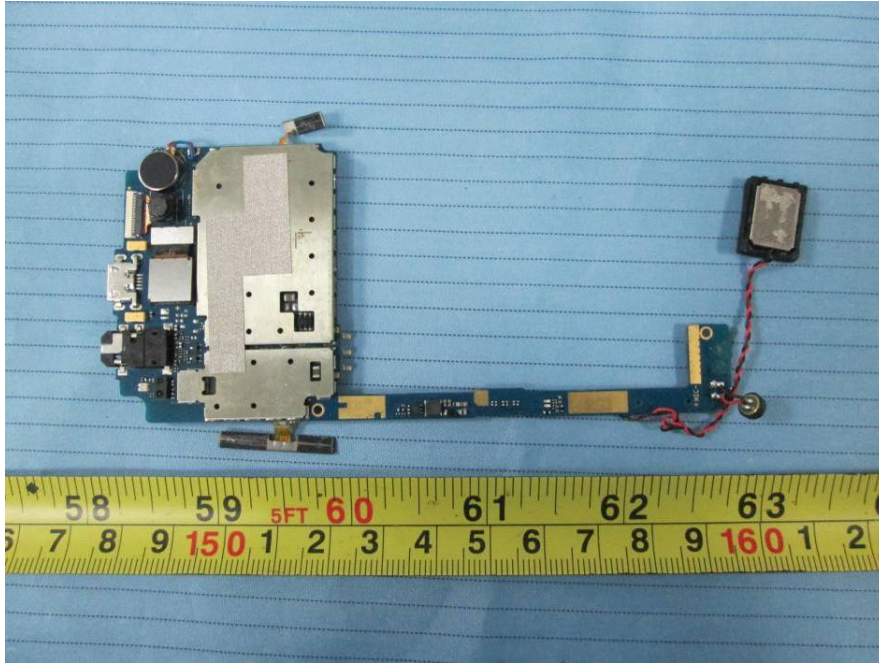
**EUT –Cover off View 3**



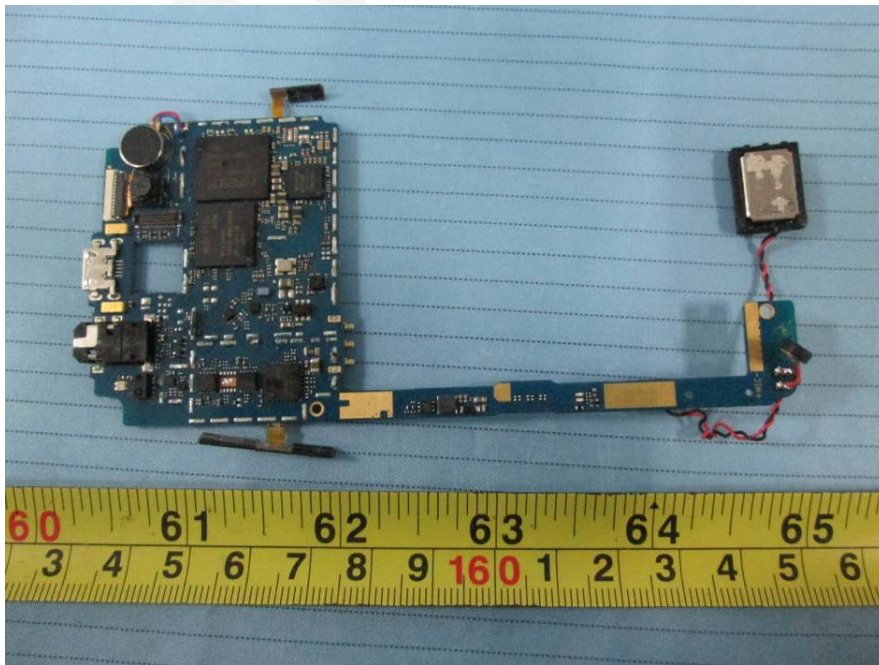
**EUT –Cover off View 4**



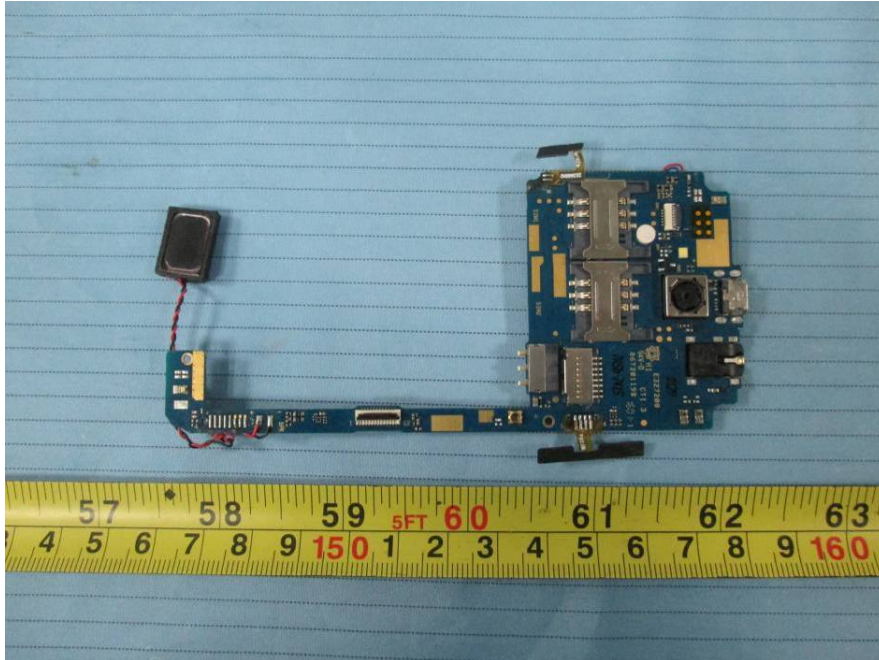
**EUT – Main Board Top View**



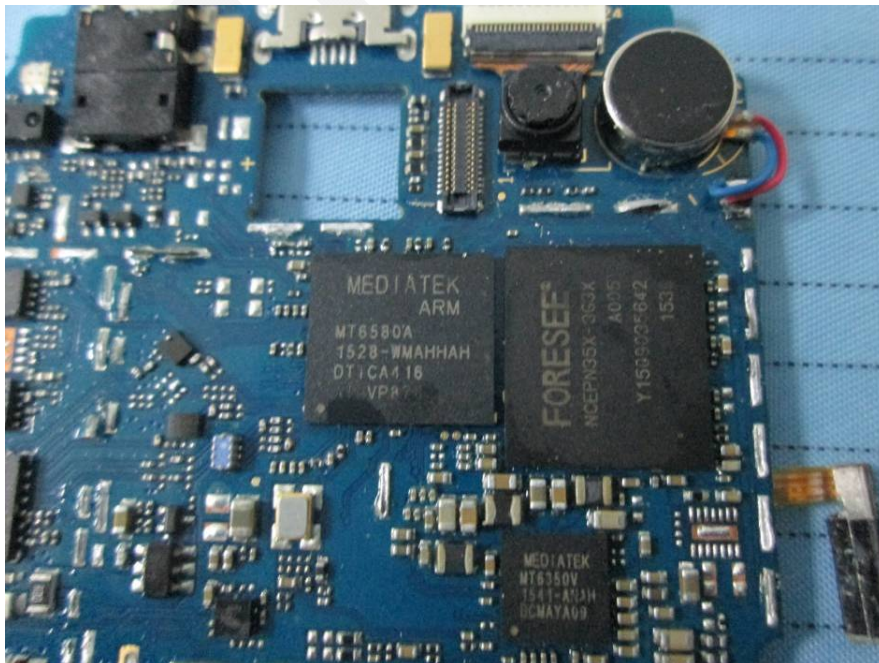
**EUT – Main Board Top Shielding off View**



**EUT – Main Board Bottom View**



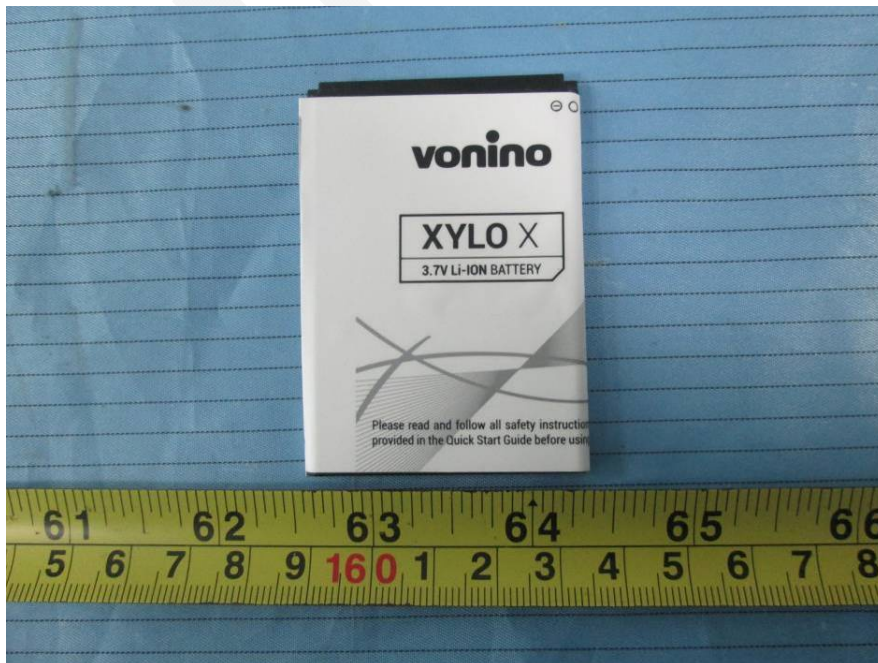
**EUT – IC Chip View**



### EUT – Battery Top View



### EUT – Battery Bottom View



## **EXHIBIT C - TEST SETUP PHOTOGRAPHS**

**Conducted Disturbance - Front View**



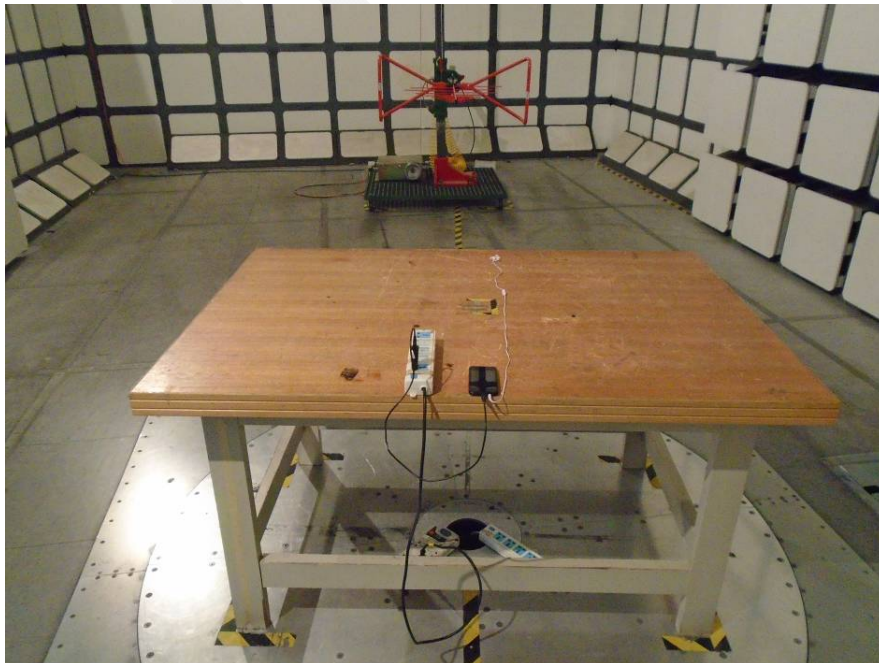
**Conducted Disturbance - Side View**



### Radiated Emission - Front View



### Radiated Emission - Rear View





## **PRODUCT SIMILARITY DECLARATION LETTER**

Advanced Technologies SRL  
Address: Ion Heliade Radulescu nr 26, Bucharest 021255, ROMANIA  
Tel: +40 (21) 569 85 33/34 Fax: +40 (31) 814 61 12  
E-mail: marius.chirca@advanced.ro

2016-3-30

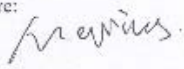
### **Product Similarity Declaration**

To Whom It May Concern,

We, Advanced Technologies SRL, hereby declare that we have a product named as Smartphone Xylo (Model number: Xylo Q) was tested by BACL. meanwhile, for our marketing purpose, we would like to list a series models (Xylo X) on reports and certificate, the difference of these models is the memory of flash, since the model Xylo Q is 512M and Xylo X is 1G. The pixels of camera are different since Xylo Q is equipped with 200W and Xylo X is equipped with 500W. No other changes are made to them.

We confirm that all information above is true, and we'll be responsible for all the consequences. Please contact me if you have any question.

Signature:

Marius   
Purchasing Manager

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