FCC Test Report

Report No.: AGC00907130801FE08

FCC ID	:	ZFN-R091B
TYPE OF AUTHORIZATION	:	Declaration of Conformity
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	Mobile Internet Device
BRAND NAME	:	HKC
TEST MODEL	:	R091B
CLIENT	:	HuiKe Electronics (shenzhen) Co., Ltd.
DATE OF ISSUE	:	Aug.14,2013
STANDARD(S)	:	FCC Part 15 Rules
REPORT VERSION	:	V1.0

Attestation of ***G***lobal ***C***ompliance (Shenzhen) Co., Ltd

REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Aug.14,2013	Valid	Original Report

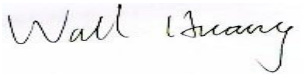
TABLE OF CONTENTS

1. VERIFICATION OF COMPLIANCE

Applicant	HuiKe Electronics (shenzhen) Co., Ltd.
Address	Building 1, 2, 3, Huike Industrial Park, Minying Industrial Zone, ShuiTian, ShiYan, Baoan, Shenzhen, China
Manufacturer	HuiKe Electronics (shenzhen) Co., Ltd.
Address	Building 1, 2, 3, Huike Industrial Park, Minying Industrial Zone, ShuiTian, ShiYan, Baoan, Shenzhen, China
Product Designation	Mobile Internet Device
Brand name:	HKC, ODYS, Xelio, Proscan, KLU, exper, MEDIACOM, Teach pad, artes, Advan, plaisio, XENO, Smart Touch, GHIA
Test Model	R091B,P096R,R091A,R091C,R091D,A092A,A092B,A092T,MV092A,MV092B,RXXXXX(Where X would any Arabian numerals or letters or blank or symbols)
Measurement Procedure	ANSI C63.4: 2003
Date of test:	Aug.07~ Aug.13,2013
Deviation:	None
Condition of Test Sample	Normal

The above equipment was tested by Attestation Of Global Compliance Co., Ltd. for compliance with the requirements set forth in the FCC Rules and Regulations Part 15, the measurement procedure according to ANSI C63.4:2003. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment are within the compliance requirements.

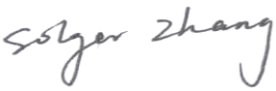
The test results of this report relate only to the tested sample identified in this report.

Test By: 

Wall Huang Aug.14,2013

Reviewed By: 

Forrest Lei Aug.14,2013

Authorized By: 

Solger Zhang Aug.14,2013

2. PRODUCT INFORMATION

Housing Type: Plastic

EUT Rating Voltage: DC 3.7V by battery or USB/Adapter Operated

I/O Port Information (☒Applicable ☐Not Applicable)

I/O Port of EUT			
I/O Port Type	**Q'TY**	**Cable**	**Tested with**
DC INPUT PORT	1	0.8m, unshielded	1
AUX PORT	1	0.8m, unshielded	1
USB PORT	1	0.8m, unshielded	1
HDMI PORT	1		

3. TEST FACILITY

Facility	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location:	2/F., Building 2, No.1-No.4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Bao'an District, Shenzhen, Guangdong, China
Description:	The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2003.
Site Filing:	The FCC Registration Number is 259865
Instrument Tolerance:	All measuring equipment is in accord with ANSI C63.4 requirements that meet industry regulatory agency and accreditation agency requirement.

4. SUPPORT EQUIPMENT LIST

Device Type	Manufacturer	Model Name	Serial No.	Data Cable	Power Cable
PC	Dell	INSPIRON	N/A	N/A	1.5m unshielded

**Note: All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.

5. SYSTEM DESCRIPTION

EUT test procedure:

1. Connect EUT and peripheral devices.
2. Power on the EUT, the EUT begins to work.
3. Running data transmission and make sure the EUT normal working.

Test Mode

1. USB (Data transmitting)

NOTE: Other modes have reflected in VOC program.

6. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§15.107	Conduction Emission	Compliant
§15.109	Radiated Emission	Compliant

7. FCC LINE CONDUCTED EMISSION TEST

7.1. TEST EQUIPMENT OF LINE CONDUCTED EMISSION TEST

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	Agilent	E4440A	US41421290	07/18/2013	07/17/2014
EMI Test Receiver	Rohde & Schwarz	ESCI	100694	07/18/2013	07/17/2014
LISN	Rohde & Schwarz	ESH2-Z5	862060/020	07/18/2013	07/17/2014

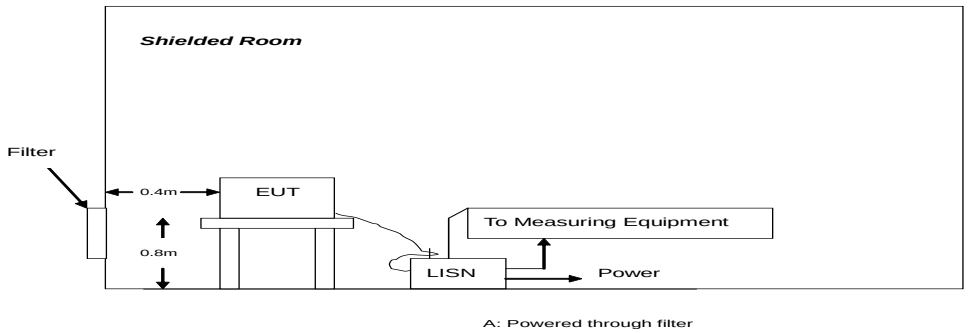
7.2 .LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

**Note: 1. The lower limit shall apply at the transition frequency.

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz

7.3. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



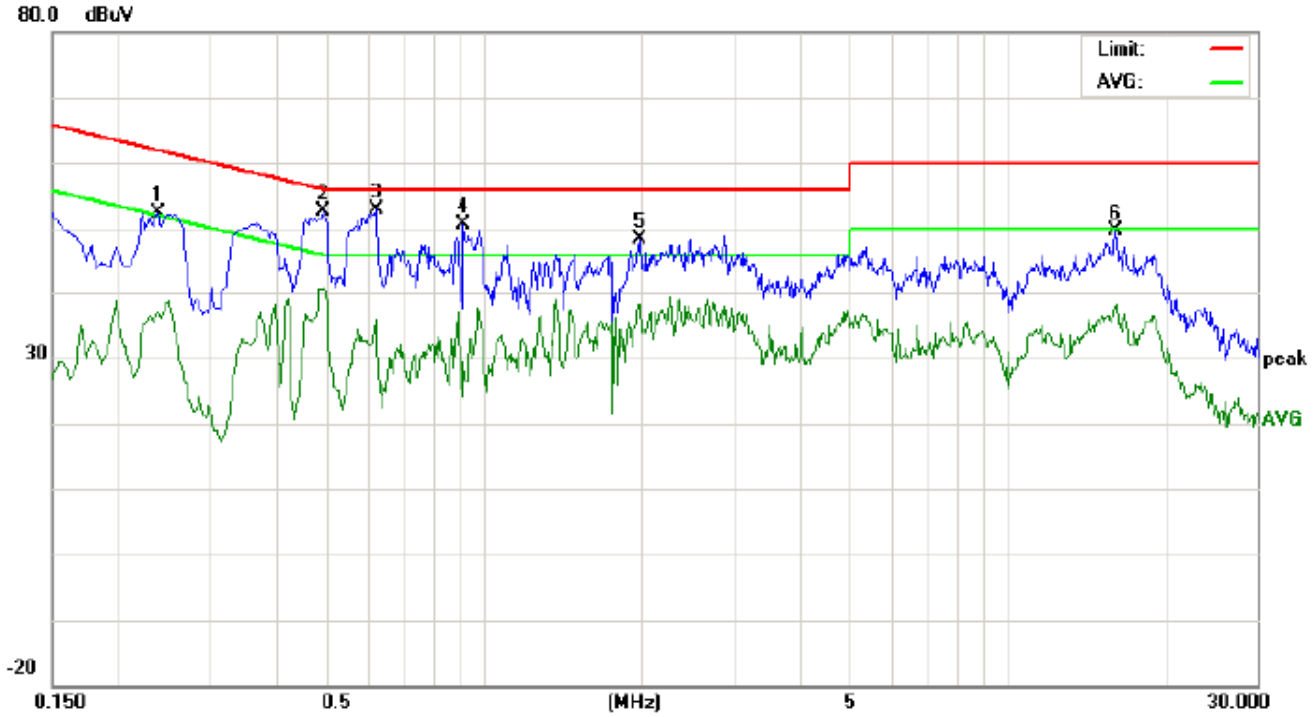
7.4. PROCEDURE OF LINE CONDUCTED EMISSION TEST

1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2) Support equipment, if needed, was placed as per ANSI C63.4.
3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
4) The EUT received charging power by PC. All support equipments received AC 120V/60Hz power from socket under the turntable, if any.
5) The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
6) Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
7) During the above scans, the emissions were maximized by cable manipulation.
8) A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions.
9) Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.

The test data of the worst case condition(mode 2) was reported on the following Data page.

7.5 TEST RESULT OF LINE CONDUCTED EMISSION TEST

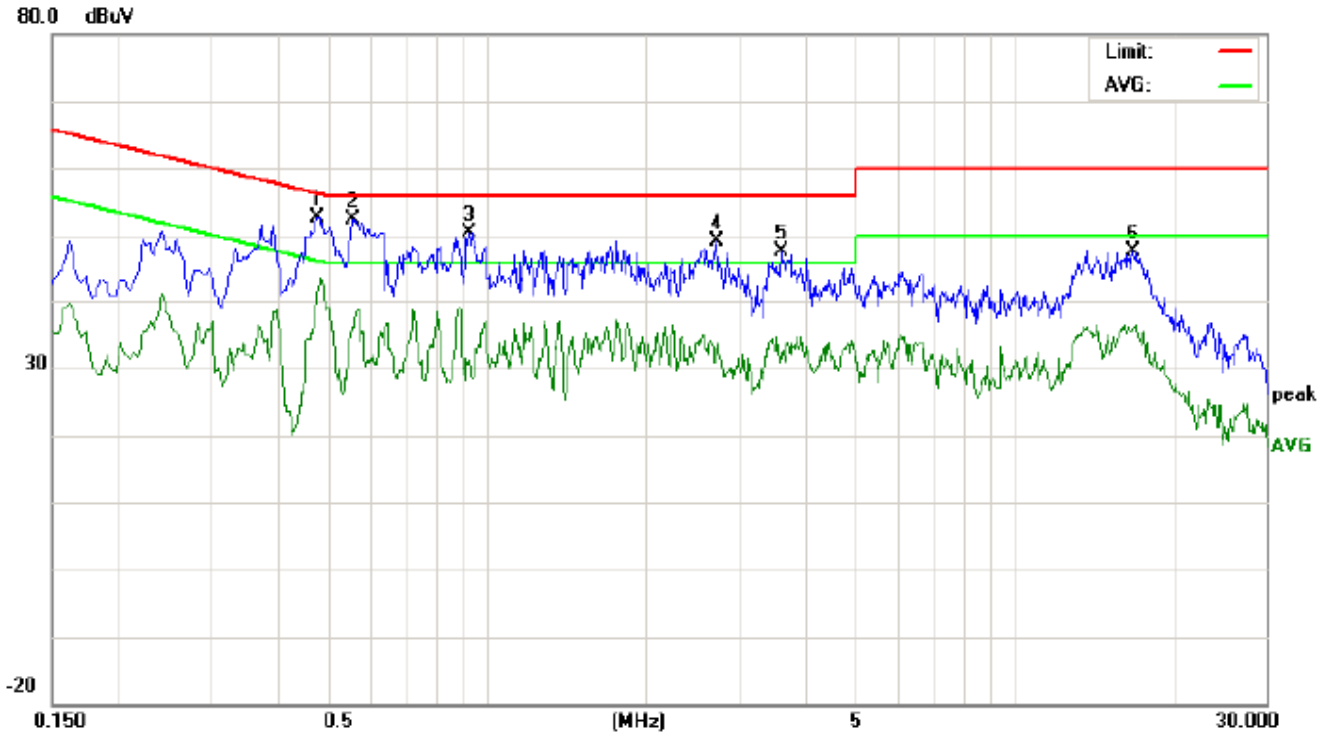
LINE CONDUCTED EMISSION - L



Site: Conduction
Phase: *L1*
Temperature: 26
Limit: FCC Class B Conduction(QP)
Power:
Humidity: 60 %
EUT: Mobile Internet Device
M/N: R091B
Mode: USB(Data transmitting)
Note:

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.2380	42.23		26.52	10.26	52.49		36.78	62.16	52.16	-9.67	-15.38	P	
2	0.4940	42.21		30.02	10.40	52.61		40.42	56.10	46.10	-3.49	-5.68	P	
3	0.6220	42.50		25.67	10.32	52.82		35.99	56.00	46.00	-3.18	-10.01	P	
4	0.9140	40.22		19.04	10.40	50.62		29.44	56.00	46.00	-5.38	-16.56	P	
5	1.9820	38.12		27.87	10.23	48.35		38.10	56.00	46.00	-7.65	-7.90	P	
6	16.1060	39.55		27.80	10.11	49.66		37.91	60.00	50.00	-10.34	-12.09	P	

LINE CONDUCTED EMISSION – N



Site: Conduction
Limit: FCC Class B Conduction(QP)
EUT: Mobile Internet Device
M/N: R091B
Mode: USB(Data transmitting)
Note:

Phase: *N*
Power:

Temperature: 26
Humidity: 60 %

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.4780	42.37		31.02	10.38	52.75		41.40	56.37	46.37	-3.62	-4.97	P	
2	0.5580	42.08		25.77	10.35	52.43		36.12	56.00	46.00	-3.57	-9.88	P	
3	0.9260	39.96		20.62	10.40	50.36		31.02	56.00	46.00	-5.64	-14.98	P	
4	2.7340	38.51		21.98	10.49	49.00		32.47	56.00	46.00	-7.00	-13.53	P	
5	3.6180	37.09		21.10	10.49	47.58		31.59	56.00	46.00	-8.42	-14.41	P	
6	16.7700	37.50		25.59	10.13	47.63		35.72	60.00	50.00	-12.37	-14.28	P	

8. FCC RADIATED EMISSION TEST

8.1. TEST EQUIPMENT OF RADIATED EMISSION

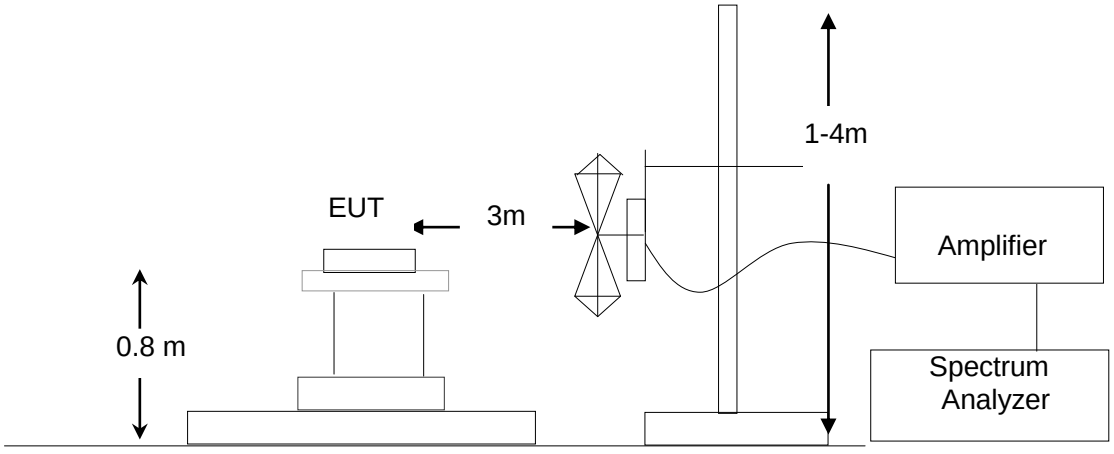
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
PSA SERIES SPECTRUM ANALYZER	AGILENT	E4440A	US41421290	07/18/2013	07/17/2014
ANTENNA	A.H.	SAS-521-4	26	07/18/2013	07/17/2014
HORN ANTENNA	EM	EM-AH-10180	67	04/21/2013	04/20/2014
AMPLIFIER	EM	EM30180	0607030	07/18/2013	07/17/2014
POSITIONING CONTROLLER	MF	MF-7802	MF780208147	07/18/2013	07/17/2014

8.2. LIMITS OF RADIATED EMISSION TEST

Frequency (MHz)	Distance (m)	Maximum Field Strength Limit (dBuV/m/ Q.P.)
30~88	3	40.0
88~216	3	43.5
216~960	3	46.0
Above 960	3	54.0

**Note: The lower limit shall apply at the transition frequency.

8.3 BLOCK DIAGRAM OF RADIATED EMISSION TEST



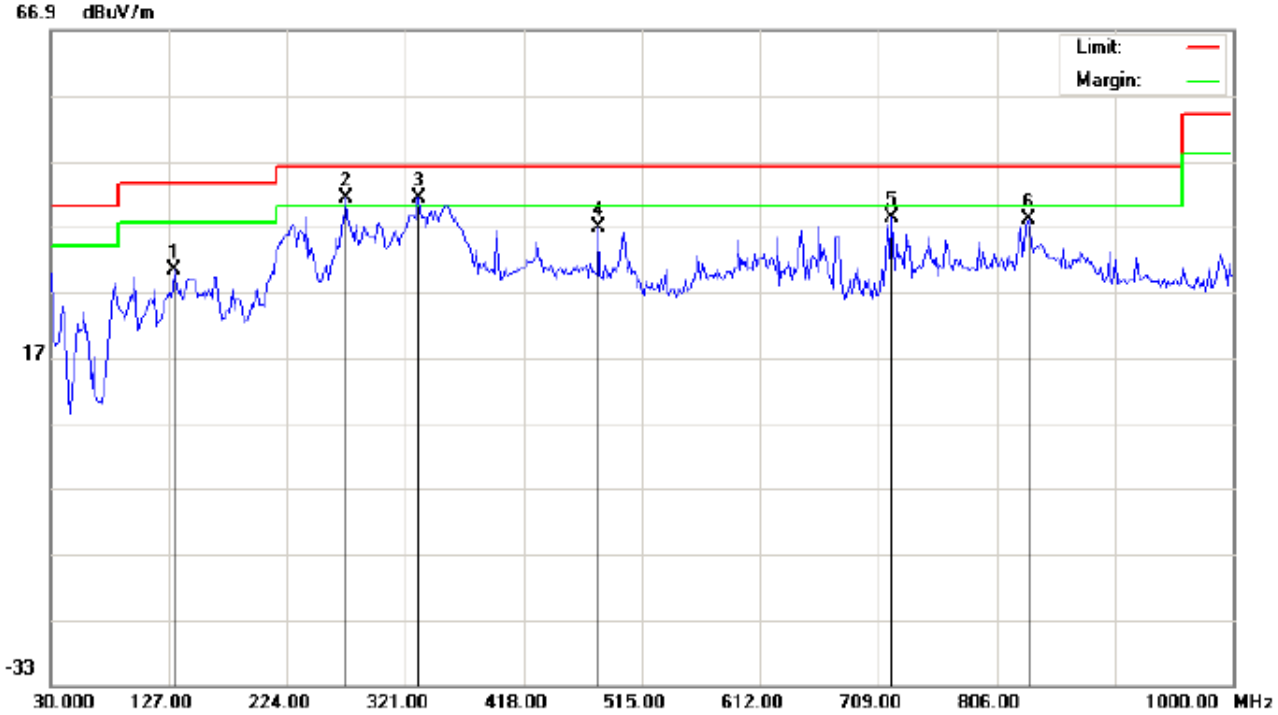
8.4 PROCEDURE OF RADIATED EMISSION TEST

1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2) Support equipment, if needed, was placed as per ANSI C63.4.
3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
4) The EUT received charging power by PC. All support equipments received AC 120V/60Hz power from socket under the turntable, if any.
5) The antenna was placed at 3 meter away from the EUT as stated in FCC Part 15. The antenna connected to the Analyzer via a cable and at times a pre-amplifier would be used.
6) The Analyzer / Receiver quickly scanned from 30MHz to 1000MHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
7) The test mode(s) were scanned during the test:
8) Recorded at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and Q.P./Peak reading is presented.

The test data of the worst case condition(mode 1) was reported on the following Data page

8.5 TEST RESULT OF RADIATED EMISSION TEST

Radiated Emission Test –Horizontal -3m



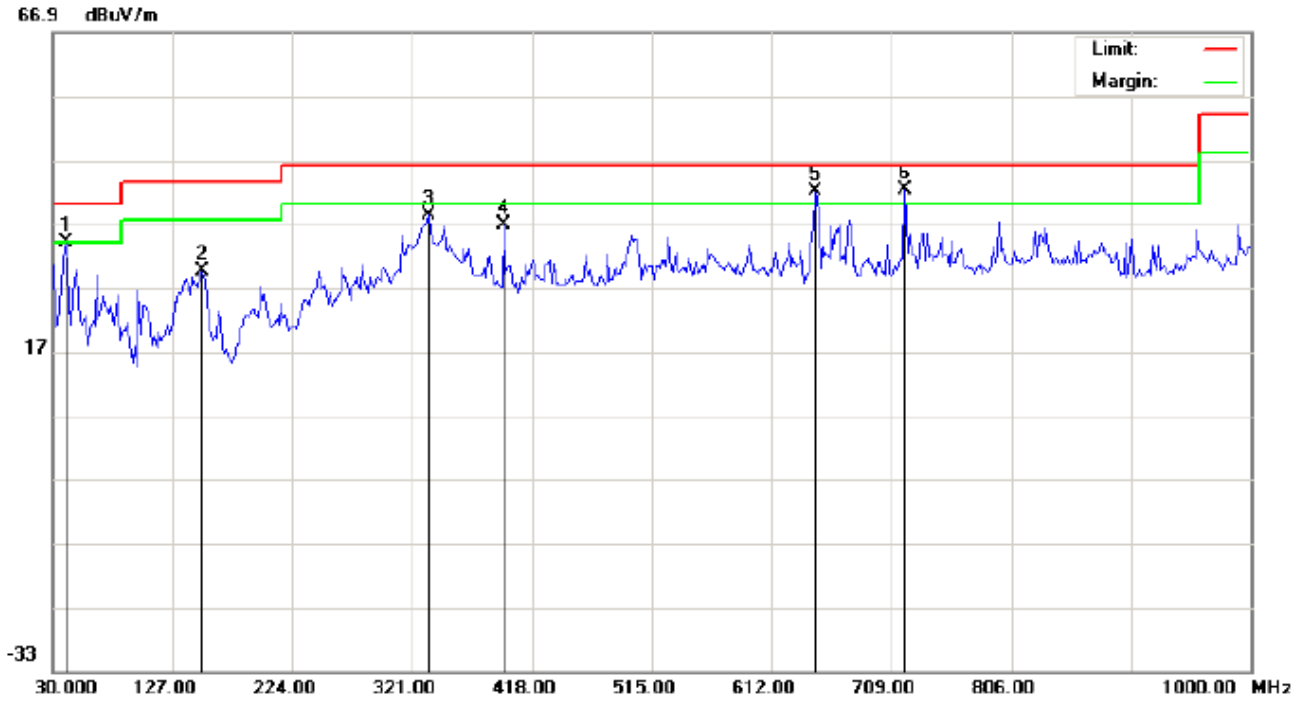
Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Mobile Internet Device
M/N: R091B
Mode: USB(Data transmitting)
Note:

Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		131.8500	24.63	5.71	30.34	43.50	-13.16	peak			
2	!	272.5000	24.10	17.06	41.16	46.00	-4.84	peak			
3	*	332.3167	21.31	19.87	41.18	46.00	-4.82	peak			
4		479.4333	15.13	21.67	36.80	46.00	-9.20	peak			
5		720.3167	12.71	25.55	38.26	46.00	-7.74	peak			
6		831.8667	6.63	31.50	38.13	46.00	-7.87	peak			

Radiated Emission Test –Vertical -3m



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Mobile Internet Device
M/N: R091B
Mode: USB(Data transmitting)
Note:

Polarization: *Vertical*
Power:
Distance: 3m

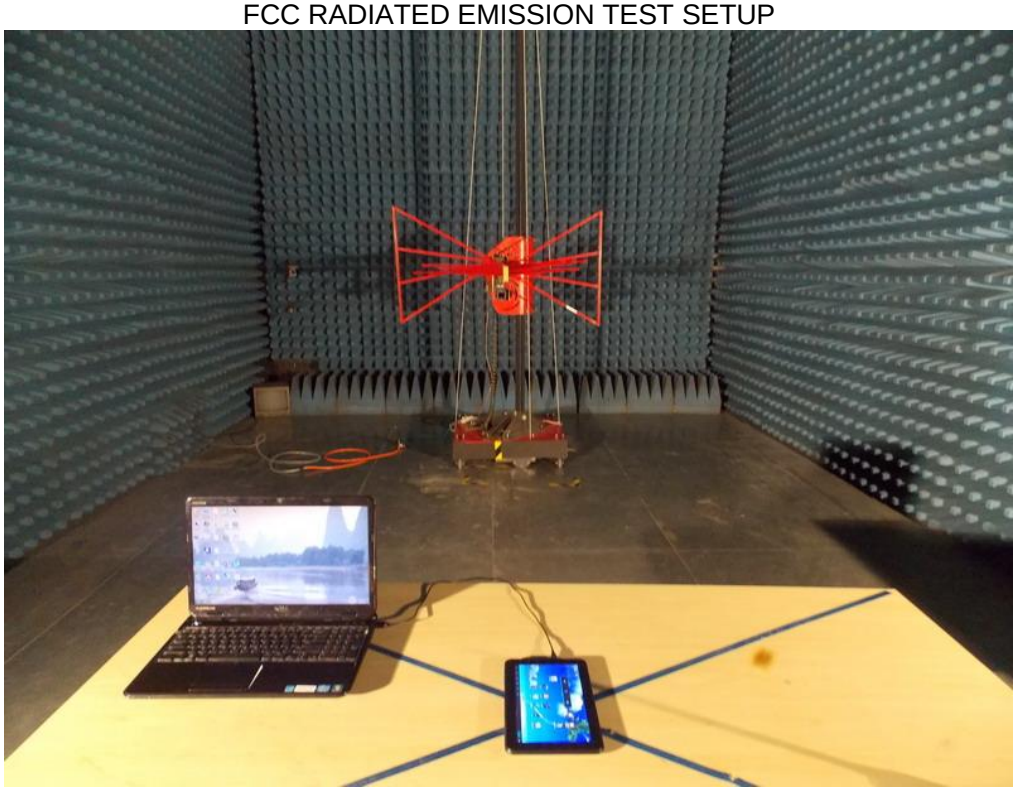
Temperature: 26
Humidity: 60 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	!	41.3167	27.59	6.45	34.04	40.00	-5.96	peak			
2		151.2500	22.48	7.04	29.52	43.50	-13.98	peak			
3		333.9333	18.29	19.96	38.25	46.00	-7.75	peak			
4		395.3667	17.70	19.17	36.87	46.00	-9.13	peak			
5	!	647.5665	16.40	25.60	42.00	46.00	-4.00	peak			
6	*	720.3167	14.84	27.55	42.39	46.00	-3.61	peak			

APPENDIX 1
PHOTOGRAPHS OF TEST SETUP

FCC LINE CONDUCTED EMISSION TEST SETUP

FCC RADIATED EMISSION TEST SETUP

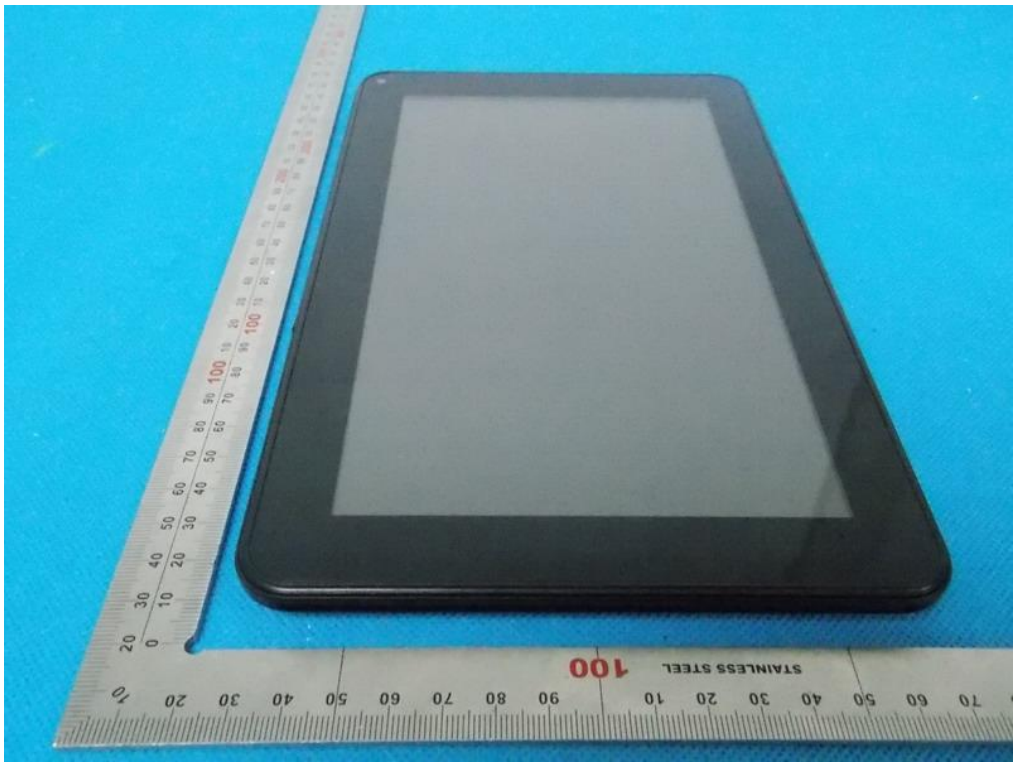


APPENDIX 2
PHOTOGRAPHS OF EUT

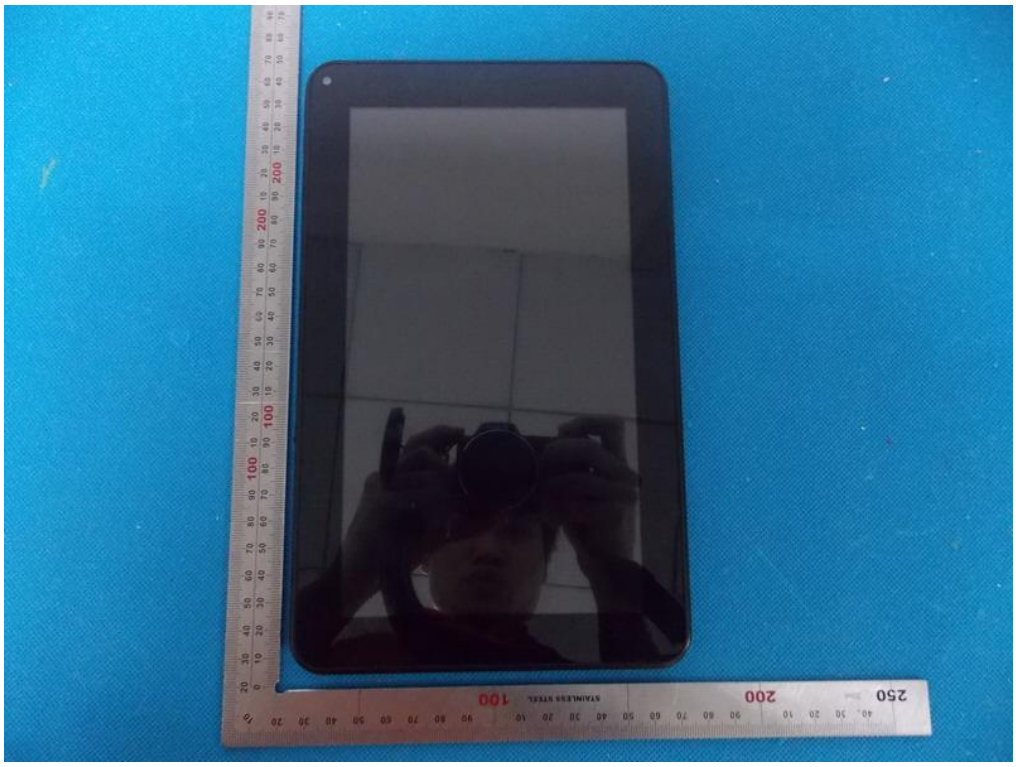
TOTAL VIEW OF EUT

TOP VIEW OF EUT

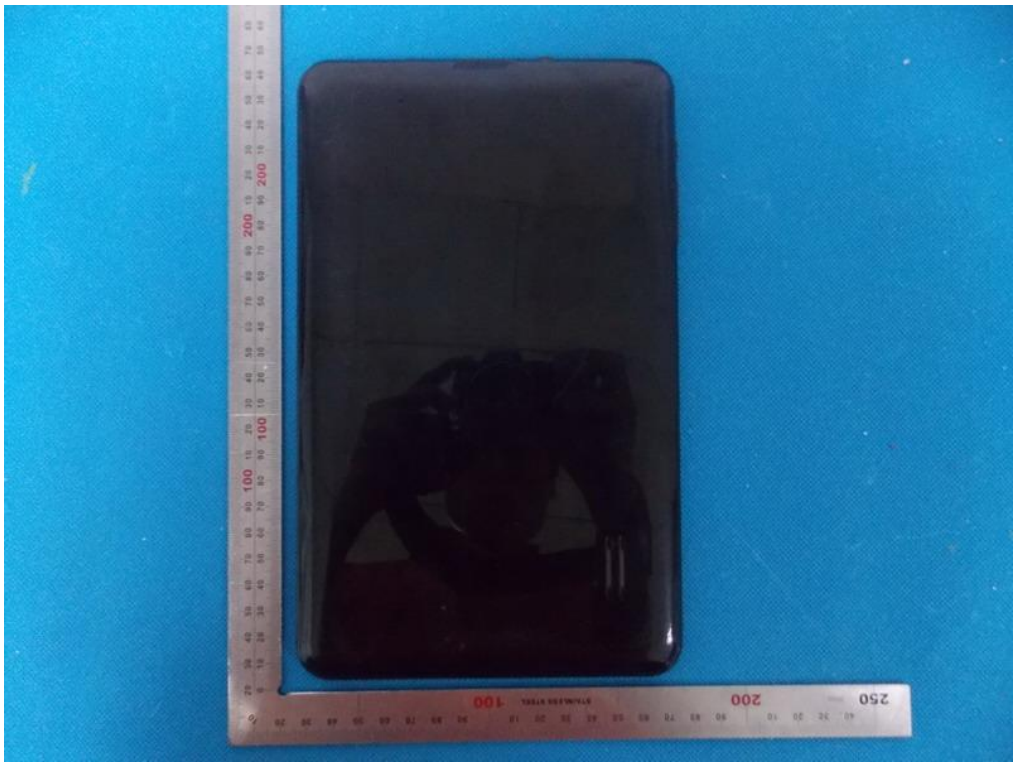
BOTTOM VIEW OF EUT



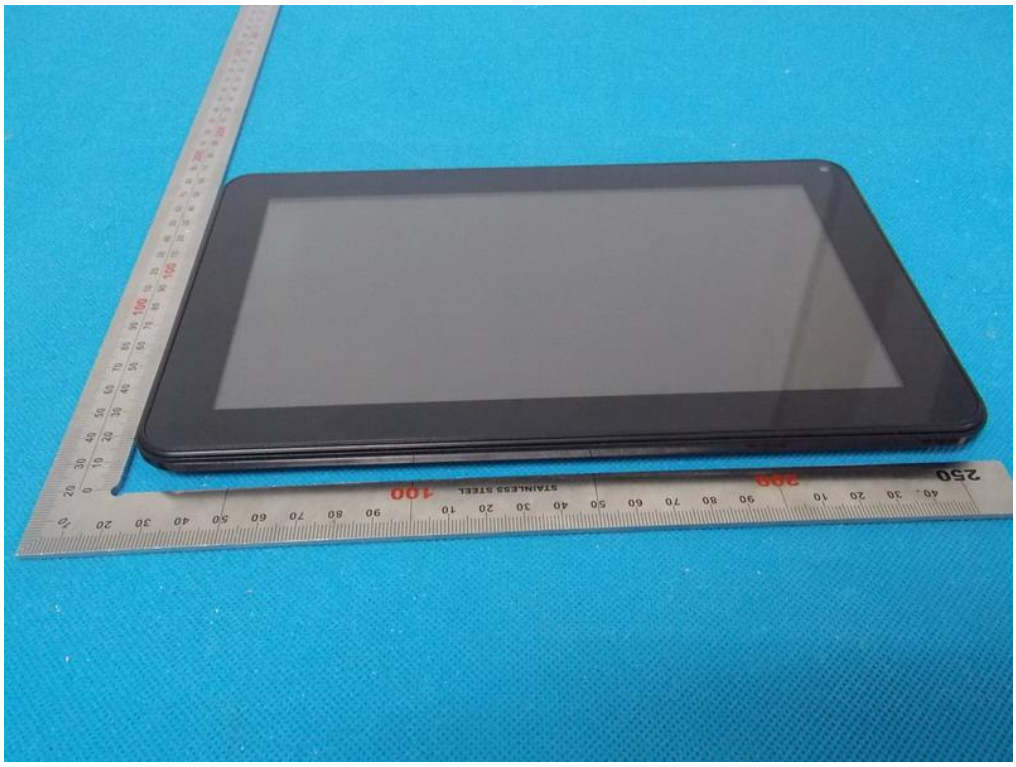
FRONT VIEW OF EUT



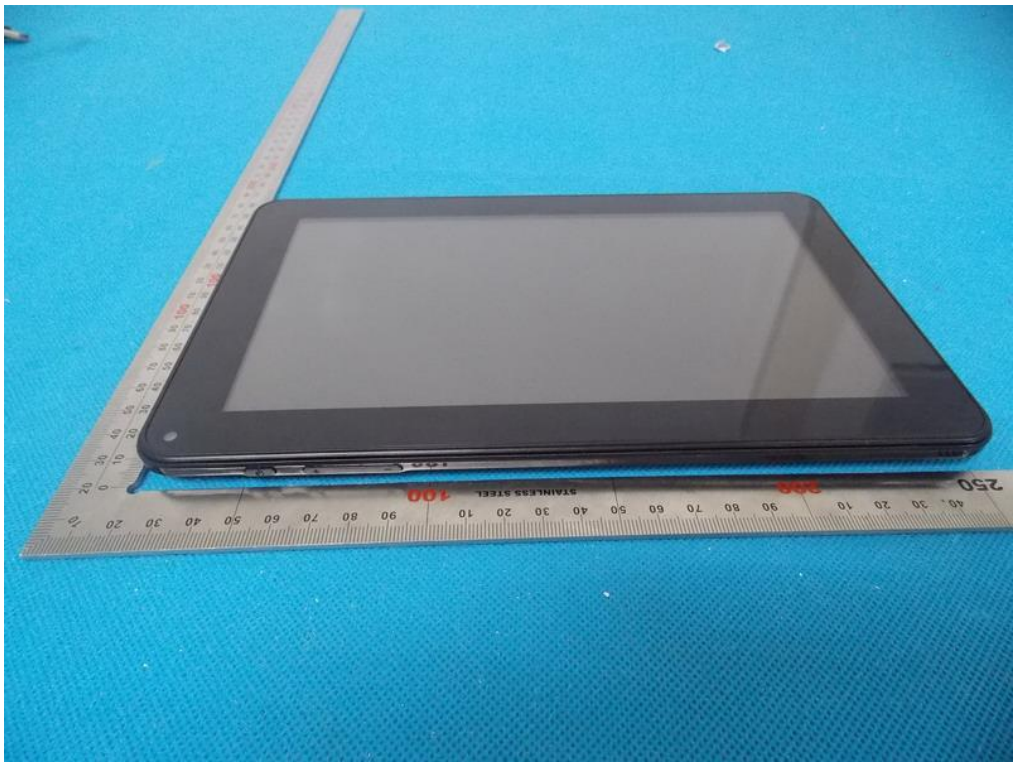
BACK VIEW OF EUT



LEFT VIEW OF EUT

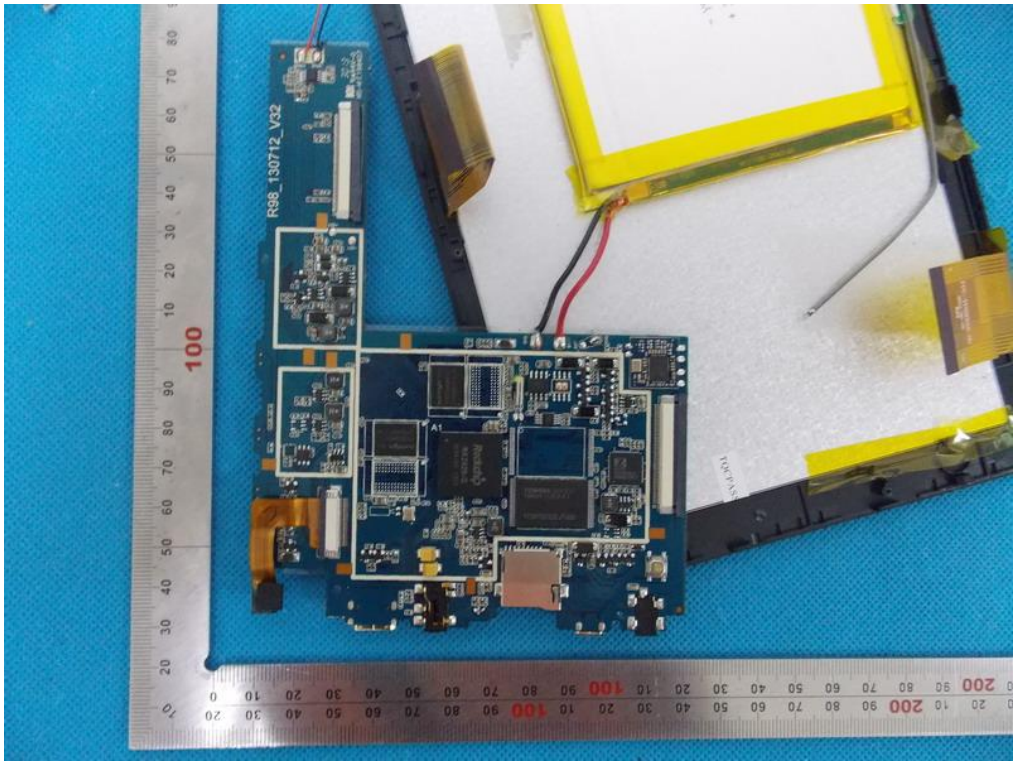


RIGHT VIEW OF EUT

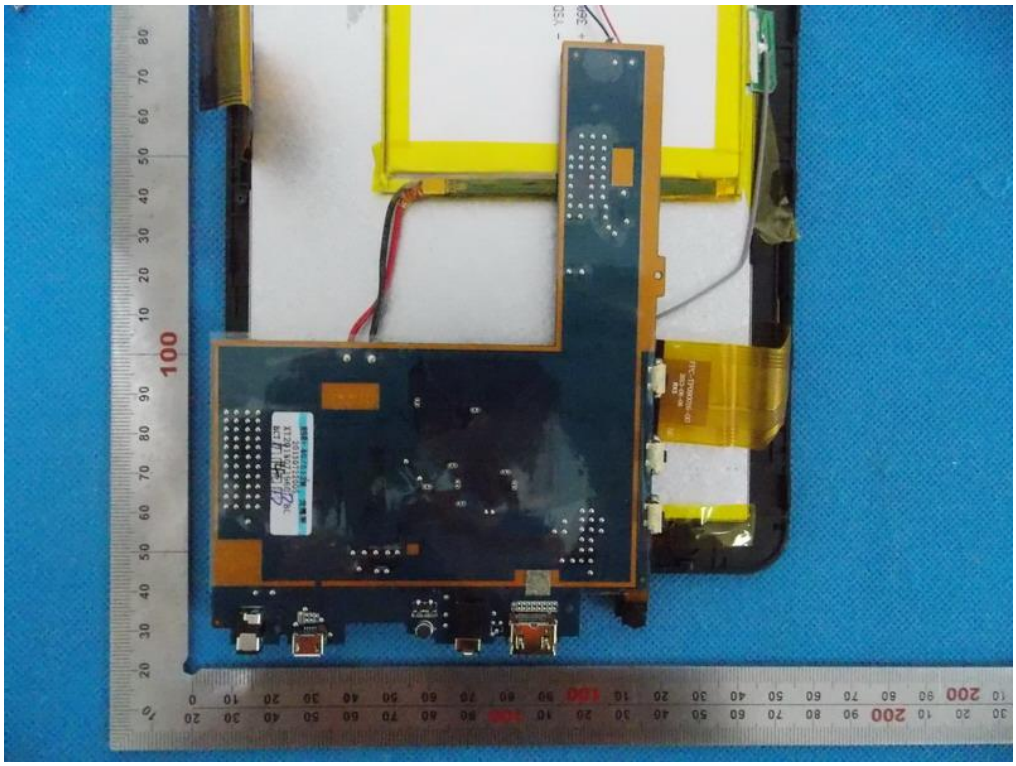


OPEN VIEW OF EUT-1

INTERNAL VIEW OF EUT-1



INTERNAL VIEW OF EUT-2



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