EMC TEST REPORT



Report No.: 15050022-FCC-E

Applicant	b mobile HK Limited				
Product Name	Mobile Phone				
Model No.	AX600				
Serial No.	AX630				
Test Standard	FCC Part 1	FCC Part 15 Subpart B Class B:2014, ANSI C63.4: 2014			
Test Date	June 10 to June 24,2015				
Issue Date	June 24, 2015				
Test Result	Pass Fail				
Equipment complied with the specification					
Equipment did not comply with the specification					
Lucifer. He		David Huang			
Lucifer He		David Huang			
Test Engineer		Checked By			

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Test result presented in this test report is applicable to the tested sample only

Issued by:

SIEMIC (SHENZHEN-CHINA) LABORATORIES

Zone A, Floor 1, Building 2 Wan Ye Long Technology Park
South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108
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Laboratories Introduction



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Accreditations for Conformity Assessment

Country/Region	Scope	
USA	EMC, RF/Wireless, SAR, Telecom	
Canada	EMC, RF/Wireless, SAR, Telecom	
Taiwan	EMC, RF, Telecom, SAR, Safety	
Hong Kong	RF/Wireless, SAR, Telecom	
Australia	EMC, RF, Telecom, SAR, Safety	
Korea	EMI, EMS, RF, SAR, Telecom, Safety	
Japan	EMI, RF/Wireless, SAR, Telecom	
Singapore	EMC, RF, SAR, Telecom	
Europe	EMC, RF, SAR, Telecom, Safety	



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1. Report Revision History

Report No.	Report Version	Description	Issue Date
15050022-FCC-E	NONE	Original	June 24, 2015

2. Customer information

Applicant Name	b mobile HK Limited	
Applicant Add	Flat 18; 14/F Block 1; Golden Industrial Building;16-26 Kwai Tak Street; Kwai	
	Chung;New Territories; Hong Kong	
Manufacturer	b mobile HK Limited	
Manufacturer Add	Flat 18; 14/F Block 1; Golden Industrial Building;16-26 Kwai Tak Street; Kwai	
	Chung;New Territories; Hong Kong	

3. Test site information

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES		
	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park		
Lab Address	South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong		
	China 518108		
FCC Test Site No.	718246		
IC Test Site No.	4842E-1		
Test Software	Radiated Emission Program-To Shenzhen v2.0		



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4. Equipment under Test (EUT) Information

Description of EUT:	Mobile Phone
---------------------	--------------

Main Model: AX600

Serial Model: AX630

GSM850: -1.18dBi

PCS1900: 0.06dBi

UMTS-FDD Band V: -1.79dBi Antenna Gain:

UMTS-FDD Band II: -0.2dBi

Bluetooth/BLE:0.03dBi

WIFI: 0.03 dBi GPS: -1.76 dBi

Battery:

Model: AX600

Spec: 3.8V, 1250 mAh 4.75Wh

Input Power: Adapter:

Input: AC100 ~ 240V ,50/60Hz 0.15A

Output:DC5.0V, 0.7A

Trade Name: Bmobile

FCC ID: ZSW-30-009

Date EUT received: June 10, 2015



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Equipment Category: JBP

GSM / GPRS: GMSK EGPRS: GMSK, 8PSK

UMTS-FDD: QPSK, 16QAM

Type of Modulation: 802.11b/g/n: DSSS, OFDM

Bluetooth: GFSK, π /4DQPSK, 8DPSK

BLE: GFSK GPS:BPSK

GSM850 TX: 824.2 ~ 848.8 MHz; RX: 869.2 ~ 893.8 MHz

PCS1900 TX: 1850.2 ~ 1909.8 MHz; RX: 1930.2 ~ 1989.8 MHz

UMTS-FDD Band V TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz

UMTS-FDD Band II TX:1852.4 ~ 1907.6 MHz;

RF Operating Frequency (ies): RX: 1932.4 ~ 1987.6 MHz

WIFI:802.11b/g/n(20M): 2412-2472 MHz WIFI:802.11n(40M): 2422-2462 MHz Bluetooth& BLE: 2402-2480 MHz

GPS RX:1575.42 MHz

GSM 850: 124CH PCS1900: 299CH

UMTS-FDD Band V : 102CH UMTS-FDD Band II : 277CH

Number of Channels: WIFI :802.11b/g/n(20M): 13CH

WIFI :802.11n(40M): 9CH

Bluetooth: 79CH

BLE: 40CH

Port: Power Port, Earphone Port, USB Port

GPRS/EGPRS Multi-slot class 8/10/12



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5. Test Summary

The product was tested in accordance with the following specifications.

All testing has been performed according to below product classification:

FCC Rules	Description of Test	Result
§15.107; ANSI C63.4: 2014	AC Power Line Conducted Emissions	Compliance
§15.109; ANSI C63.4: 2014	Radiated Emissions	Compliance

Measurement Uncertainty

Emissions				
Test Item Description Uncertainty				
Band Edge and Radiated Spurious Emissions	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+5.6dB/-4.5dB		
-	-	-		



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6. Measurements, Examination And Derived Results

6.1 AC Power Line Conducted Emissions

Temperature	20°C
Relative Humidity	59%
Atmospheric Pressure	1017mbar
Test date :	June 17, 2015
Tested By:	Lucifer He

Requirement(s):

Spec	Item	Requirement Applicable					
47CFR§15.	For Low-power radio-frequency devices that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 [mu] H/50 ohms line impedance stabilization network (LISN). The lower limit applies at the boundary between the frequencies ranges.				₹		
107		Frequency ranges	Limit (dBμV)			
		(MHz)	QP	Average			
		0.15 ~ 0.5	66 – 56	56 – 46			
		0.5 ~ 5	56	46			
		5 ~ 30 60 50					
Test Setup	Vertical Ground Reference Plane EUT 80cm Horizontal Ground Reference Plane						
	Note: 1.Support units were connected to second LISN. 2.Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.						
Procedure	 The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m x 1m x 0.8m high, non-metallic table. The power supply for the EUT was fed through a 50W/50mH EUT LISN, connected to filtered mains. 						



Test Plot

Yes (See below)

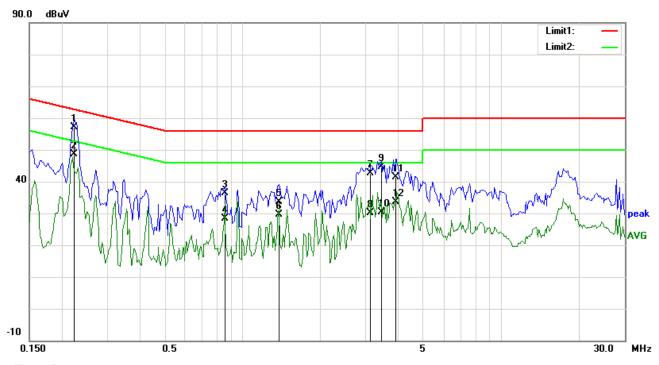
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	3. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss
	coaxial cable.
	4. All other supporting equipment were powered separately from another main supply.
	5. The EUT was switched on and allowed to warm up to its normal operating condition.
	6. A scan was made on the NEUTRAL line (for AC mains) or Earth line (for DC power)
	over the required frequency range using an EMI test receiver.
	7. High peaks, relative to the limit line, The EMI test receiver was then tuned to the
	selected frequencies and the necessary measurements made with a receiver bandwidth
	setting of 10 kHz.
	8. Step 7 was then repeated for the LIVE line (for AC mains) or DC line (for DC power).
Remark	
Result	Pass Fail
Test Data	Yes N/A



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Test Mode 1: USB Mode



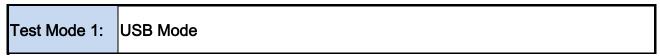
Test Data

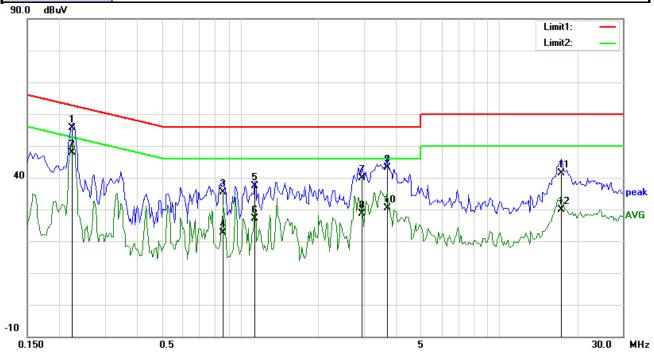
Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin	Comment
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)	
1	L1	0.2242	44.25	QP	12.92	57.17	62.66	-5.49	
2	L1	0.2242	35.69	AVG	12.92	48.61	52.66	-4.05	
3	L1	0.8531	24.80	QP	11.55	36.35	56.00	-19.65	
4	L1	0.8531	16.76	AVG	11.55	28.31	46.00	-17.69	
5	L1	1.3883	22.19	QP	11.40	33.59	56.00	-22.41	
6	L1	1.3883	18.20	AVG	11.40	29.60	46.00	-16.40	
7	L1	3.1250	31.25	QP	11.40	42.65	56.00	-13.35	
8	L1	3.1250	18.72	AVG	11.40	30.12	46.00	-15.88	
9	L1	3.4375	33.28	QP	11.40	44.68	56.00	-11.32	
10	L1	3.4375	18.90	AVG	11.40	30.30	46.00	-15.70	
11	L1	3.9141	29.86	QP	11.40	41.26	56.00	-14.74	
12	L1	3.9141	22.24	AVG	11.40	33.64	46.00	-12.36	



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Test Data

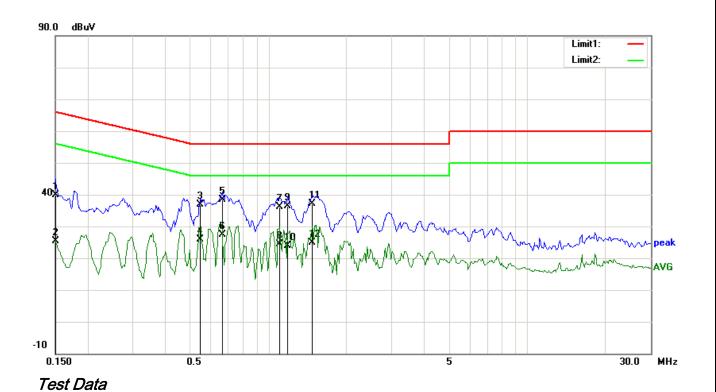
Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin	Comment
		(MHz)	(dBuV)		(dB)	(dBuV)	(dBuV)	(dB)	
1	N	0.2242	42.64	QP	12.92	55.56	62.66	-7.10	
2	N	0.2242	34.98	AVG	12.92	47.90	52.66	-4.76	
3	N	0.8609	23.72	QP	11.54	35.26	56.00	-20.74	
4	N	0.8609	11.09	AVG	11.54	22.63	46.00	-23.37	
5	N	1.1383	26.07	QP	11.42	37.49	56.00	-18.51	
6	N	1.1383	15.61	AVG	11.42	27.03	46.00	-18.97	
7	N	2.9547	28.22	QP	11.64	39.86	56.00	-16.14	
8	N	2.9547	17.05	AVG	11.64	28.69	46.00	-17.31	
9	N	3.6836	31.41	QP	11.74	43.15	56.00	-12.85	
10	N	3.6836	18.76	AVG	11.74	30.50	46.00	-15.50	
11	N	17.4297	26.75	QP	14.61	41.36	60.00	-18.64	
12	N	17.4297	15.32	AVG	14.61	29.93	50.00	-20.07	



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Test Mode 1: USB Mode



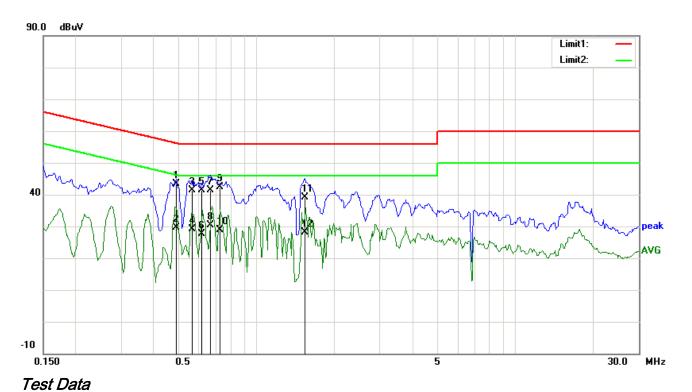
Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin	Comment
		(MHz)	(dBuV)		(dB)	(dBuV)	(dBuV)	(dB)	
1	L1	0.1500	26.61	QP	13.20	39.81	66.00	-26.19	
2	L1	0.1500	12.17	AVG	13.20	25.37	56.00	-30.63	
3	L1	0.5445	25.00	QP	11.86	36.86	56.00	-19.14	
4	L1	0.5445	14.01	AVG	11.86	25.87	46.00	-20.13	
5	L1	0.6617	26.53	QP	11.74	38.27	56.00	-17.73	
6	L1	0.6617	15.62	AVG	11.74	27.36	46.00	-18.64	
7	L1	1.1031	24.74	QP	11.40	36.14	56.00	-19.86	
8	L1	1.1031	12.94	AVG	11.40	24.34	46.00	-21.66	
9	L1	1.1891	25.00	QP	11.40	36.40	56.00	-19.60	
10	L1	1.1891	12.41	AVG	11.40	23.81	46.00	-22.19	
11	L1	1.4781	25.76	QP	11.40	37.16	56.00	-18.84	
12	L1	1.4781	13.42	AVG	11.40	24.82	46.00	-21.18	



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Test Mode 1: USB Mode



Phase Neutral Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin	Comment
		(MHz)	(dBuV)		(dB)	(dBuV)	(dBuV)	(dB)	
1	N	0.4898	31.32	QP	11.94	43.26	56.17	-12.91	
2	N	0.4898	17.66	AVG	11.94	29.60	46.17	-16.57	
3	N	0.5641	29.63	QP	11.84	41.47	56.00	-14.53	
4	N	0.5641	17.34	AVG	11.84	29.18	46.00	-16.82	
5	N	0.6140	29.69	QP	11.79	41.48	56.00	-14.52	
6	N	0.6140	15.93	AVG	11.79	27.72	46.00	-18.28	
7	N	0.6656	29.58	QP	11.73	41.31	56.00	-14.69	
8	N	0.6656	18.75	AVG	11.73	30.48	46.00	-15.52	
9	N	0.7236	30.75	QP	11.68	42.43	56.00	-13.57	
10	N	0.7236	17.10	AVG	11.68	28.78	46.00	-17.22	
11	N	1.5367	27.74	QP	11.47	39.21	56.00	-16.79	
12	N	1.5367	16.58	AVG	11.47	28.05	46.00	-17.95	



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6.2 Radiated Emissions

Temperature	20°C
Relative Humidity	59%
Atmospheric Pressure	1017mbar
Test date :	June 17, 2015
Tested By:	Lucifer He

Requirement(s):

Spec	Item	Requirement		Applicable				
47CFR§15. 107(d)	a) edges Frequency range (MHz) Field Strength (μV/m) 30 - 88 100 88 - 216 150							
		216 960	200					
		Above 960	500					
Test Setup		Ant. Tower Support Units Turn Table Ground Plane Test Receiver						
Test Setup Procedure	2.	The EUT was switched on and allowed. The test was carried out at the selected characterization. Maximization of the changing the antenna polarization, and manner: a. Vertical or horizontal polarization.	ed frequency points obtained from emissions, was carried out by rot	the EUT ating the EUT, the following				



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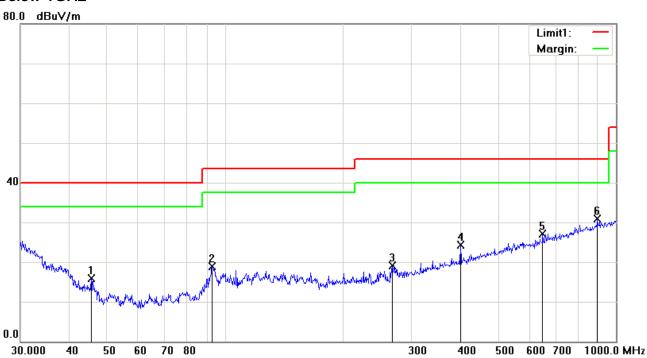
			over a full rotation of the EUT) was chosen.					
		b.	The EUT was then rotated to the direction that gave the maximum					
			emission.					
		C.	Finally, the antenna height was adjusted to the height that gave the maximum					
			emission.					
	3.	The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer						
		120 kHz for Quasiy Peak detection at frequency below 1GHz.						
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and v								
		bandwi	dth is 3MHz with Peak detection for Peak measurement at frequency above					
		1GHz.						
	solution bandwidth of test receiver/spectrum analyzer is 1MHz and the video							
		bandw	vidth with Peak detection for Average Measurement as below at frequency					
		above	1GHz.					
		■ 1 kF	Hz (Duty cycle < 98%) □ 10 Hz (Duty cycle > 98%)					
	5.	5. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency						
		points v	were measured.					
Remark								
Result	☑ Pa	SS	☐ Fail					
	7							
Test Data	Yes		N/A					
Test Plot	Yes (S	ee belo	w) N/A					



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Test Mode: USB Mode

Below 1GHz



Test Data

Horizontal Polarity Plot @3m

No.	P/L	Frequency	Readin g	Detector	Corrected	Result	Limit	Margin	Height	Degree	Comme nt
		(MHz)	(dBuV/ m)		(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	()	
1	Н	45.5348	27.05	peak	-11.18	15.87	40.00	-24.13	200	356	
2	Н	92.7872	31.64	peak	-12.68	18.96	43.50	-24.54	200	198	
3	Н	267.5455	27.54	peak	-8.39	19.15	46.00	-26.85	100	108	
4	Н	400.4319	28.52	peak	-4.29	24.23	46.00	-21.77	100	157	
5	Н	649.6597	26.34	peak	0.81	27.15	46.00	-18.85	100	123	
6	Н	896.9965	26.25	peak	4.64	30.89	46.00	-15.11	162	360	

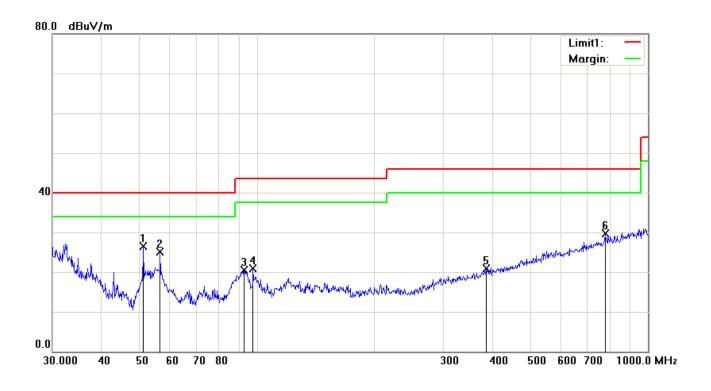
Above 1GHz

Note: The frequency that above 1GHz is mainly from the environment noise.



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Below 1GHz



Test Data

Vertical Polarity Plot @3m

No.	P/L	Frequency	Readin g	Detector	Corrected	Result	Limit	Margin	Height	Degree	Comme
		(MHz)	(dBuV/ m)		(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	()	
1	V	51.3005	39.80	peak	-13.33	26.47	40.00	-13.53	200	205	
2	V	56.5929	39.01	peak	-13.96	25.05	40.00	-14.95	100	22	
3	V	92.7872	33.11	peak	-12.68	20.43	43.50	-23.07	100	195	
4	V	97.7983	32.26	peak	-11.39	20.87	43.50	-22.63	100	218	
5	V	385.2805	25.57	peak	-4.64	20.93	46.00	-25.07	100	117	
6	V	776.8778	26.78	peak	2.84	29.62	46.00	-16.38	200	66	

Above 1GHz

Note: The frequency that above 1GHz is mainly from the environment noise.



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Annex A. TEST INSTRUMENT

Instrument	Model	Serial#	Cal Date	Cal Due	In use		
AC Line Conducted Emis	AC Line Conducted Emissions						
EMI test receiver	ESCS30	8471241027	09/18/2014	09/17/2015	>		
Line Impedance Stabilization Network	LI-125A	191106	09/26/2014	09/25/2015	>		
Line Impedance Stabilization Network	LI-125A	191107	09/26/2014	09/25/2015	(
LISN	ISN T800	34373	09/26/2014	09/25/2015	<		
Transient Limiter	LIT-153	531118	09/02/2014	09/01/2015	<		
Radiated Emissions	Radiated Emissions						
EMI test receiver	ESL6	100262	09/18/2014	09/17/2015	>		
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	09/02/2014	09/01/2015	>		
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	03/25/2015	03/24/2016	>		
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/22/2014	09/21/2015	\		
Double Ridge Horn Antenna	AH-118	71259	09/25/2014	09/24/2015	\		



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Annex B. EUT And Test Setup Photographs

Annex B.i. Photograph: EUT External Photo





Whole Package - Top View









EUT - Rear View

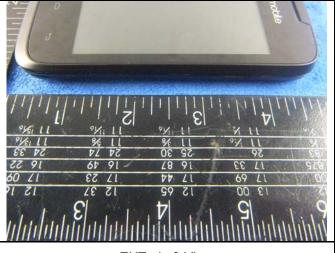


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EUT - Top View

EUT - Bottom View



EUT - Left View



EUT - Right View



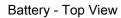
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Annex B.ii. Photograph: EUT Internal Photo





Cover Off - Top View









Mainborad With Shielding - Front View



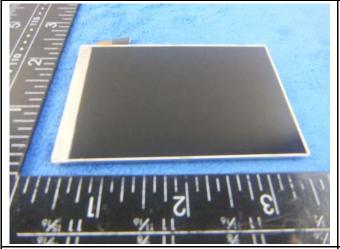
Mainborad Without Shielding - Front View



Mainborad - rear View



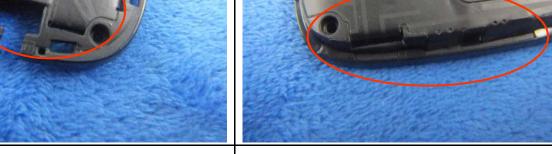
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LCD - Front View LCD - Rear View

LCD - Rear View





WIFI/BT/BLE - Antenna View

GSM/PCS/UMTS-FDD Antenna View



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Annex B.iii. Photograph: Test Setup Photo



Conducted Emissions Test Setup - Front View



Conducted Emissions Test Setup - Side View



Radiated Spurious Emissions Test Setup Below 1GHz



Radiated Spurious Emissions Test Setup Above 1GHz

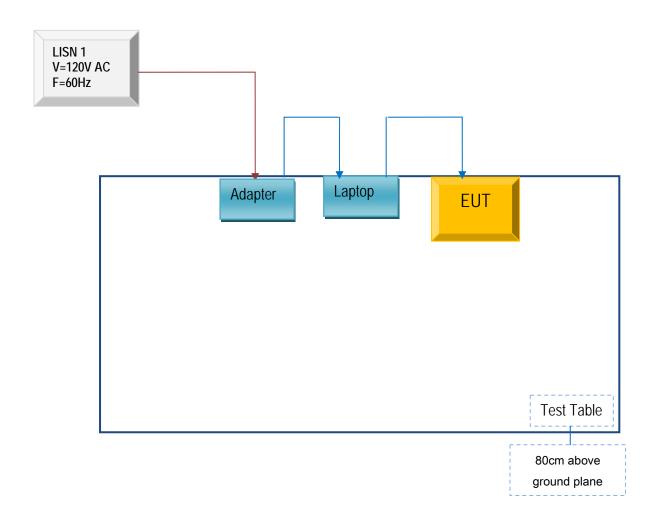


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Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.ii. TEST SET UP BLOCK

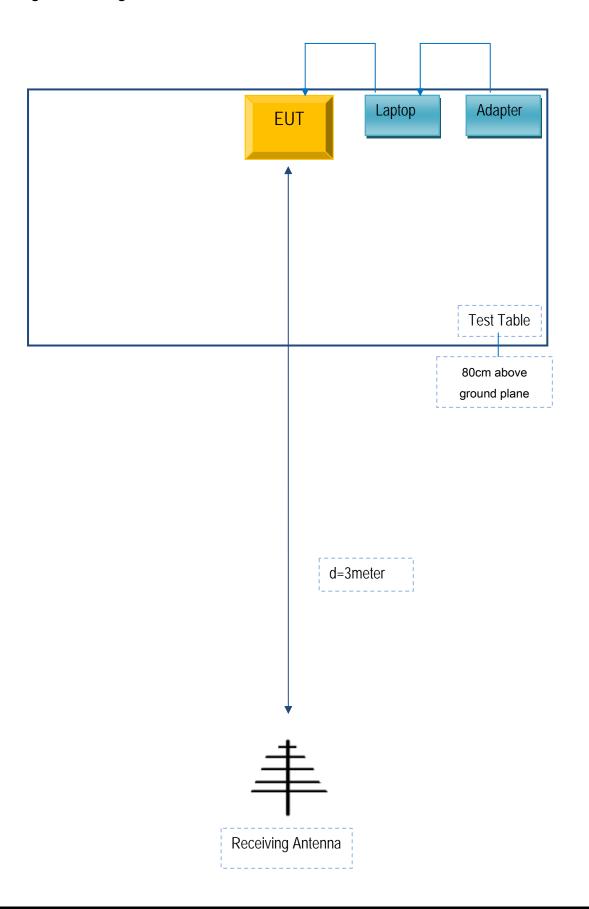
Block Configuration Diagram for Conducted Emissions





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Block Configuration Diagram for Radiated Emissions





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Annex C. il. SUPPORTING EQUIPMENT DESCRIPTION

The following is a description of supporting equipment and details of cables used with the EUT.

Manufacturer	Equipment Description	Model	Calibration Date	Calibration Due Date
Lenovo	Lenovo Laptop	E40& 0579A52	N/A	N/A



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Annex D. User Manual / Block Diagram / Schematics / Partlist

Please see Attachment



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Annex E. DECLARATION OF SIMILARITY

b Mobile HK Limited

To SIEMIC Inc 775 Montague Expressway Milpitas, CA 95035.

Statement

We, b Mobile HK Limited apply a multiple-listing certification for the below models.

Product Name: Mobile phone

Model number: AX600/ AX630

FCC ID: ZSW-30-009

We hereby state that these models are identical in interior structure, electrical circuits and components, and just model name is different for the marketing requirement.

Your assistance on this matter is highly appreciated.

Sincerely,

Signature:

Name: KA SHING LAM

Title: Director

ľK Limited