

FCC TEST REPORT(15B)

for

AcrossTechs, LLC

GSM bar phone

Model Number: 201401,C101A

FCC ID: 2AAUA201401

Prepared for : AcrossTechs, LLC
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Date of Test : May 16~25, 2014
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Keyway Testing Technology Co., Ltd.

Applicant:	AcrossTechs, LLC		
Address:	13601 Preston Road, Suite W615, Dallas, TX 75240 USA		
Manufacturer:	Honsung International Industry Ltd.		
Address:	2FL, East Wing, WanYuan Building, Shangbu Industry Park, Hongli Road, Futian District, Shenzhen, PRC		
E.U.T:	GSM bar phone		
Model Number:	201401,C101A		
Trade Name:	AcrossTechs	Serial No.:	-----
Date of Receipt:	May 15, 2014	Date of Test:	May 16~25, 2014
Test Specification:	FCC Part 15, Subpart B: Oct. 1, 2013 ANSI C63.4:2009		
Test Result:	The equipment under test was found to be compliance with the requirements of the standards applied.		
Issue Date: May 25, 2014			
Tested by:	Reviewed by:	Approved by:	
			
Andy Gao / Engineer	Jade Yang/ Supervisor	Chris Du / Manager	
Other Aspects:	None.		
Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested			
This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Keyway Testing Technology Co., Ltd.			

1. TEST SUMMARY

Test Items	Test Requirement	Result
Conducted Emissions	15.207	PASS
Radiated Emissions	15.209	PASS

2. GENERAL PRODUCT INFORMATION

2.1. Product Function

Refer to Technical Construction Form and User Manual.

2.2. Description of Device (EUT)

Product Name:	GSM bar phone
Model No.:	201401,C101A
Operation Frequency:	Bluetooth:2402~2480MHz GSM 850MHz: Tx: 824.20 - 848.80MHz (at intervals of 200kHz); Rx: 869.20 - 893.80MHz (at intervals of 200kHz) GSM 1900MHz: Tx: 1850.20 - 1909.80MHz (at intervals of 200kHz); Rx: 1930.20 - 1989.80MHz (at intervals of 200kHz)
Channel numbers:	Bluetooth:79 Channels
Channel separation:	Bluetooth:1M
BT version:	2.0
Modulation technology:	Bluetooth: FHSS(GFSK 1Mbps) GSM Mode with GMSK Modulation
Antenna Type:	Integral Antenna
Antenna gain:	1dBi (BT),1.2dBi (GSM)
Power supply:	DC 5.2V from adapter Rechargeable lithium-ion battery 3.7V
Max operation frequency:	2480MHz

2.3. Difference between Model Numbers

The product different for model number and outlook color.

2.4. Independent Operation Modes

The basic operation modes are:

1	Music Playing
2	Video recording
3	Data transmitting

Note: we pretest all mode. The worst was mode 3, the data recording in the report.

2.5. Test Supporting System

AC Adapter:
Provide: Honsung International Industry Ltd.
M/N: HS-1000
I/P: AC 100~240V 0.2A
O/P: DC 5.2V 0.5A
FCC Approve: FCC VOC

2.6. Test Facilities

Lab Qualifications :

Certificated by Industry Canada
Registration No.: 9868A
Date of registration: December 8, 2011

Certificated by FCC, USA
Registration No.: 370994
Date of registration: February 21, 2012

Certificated by CNAS China
Registration No.: CNAS L5783
Date of registration: August 8, 2012

2.7. List of Test and Measurement Instruments

2.7.1. For conducted emission at the mains terminals test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCI	101156	Apr. 27,14	Apr. 27,15
Artificial Mains Network	Rohde&Schwarz	ENV216	101315	Apr. 27,14	Apr. 27,15
Artificial Mains Network (AUX)	Rohde&Schwarz	ENV216	101314	Apr. 27,14	Apr. 27,15
RF Cable	FUJIKURA	3D-2W	944 Cable	Apr. 27,14	Apr. 27,15

2.7.2. For radiated emission test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCI	101156	Apr. 27,14	Apr. 27,15
System Simulator	Agilent	E5515C	GB43130245	Apr. 30,14	Apr. 30,15
Power Splitter	Weinschel	1506A	NW425	Apr. 30,14	Apr. 30,15
Bilog Antenna	ETS-LINDGREEN	3142D	135452	Apr. 27,14	Apr. 27,15
Loop antenna	teseq	HLA6120	22032	Apr. 30,14	Apr. 30,15
Spectrum Analyzer	Agilent	E4411B	MY4511304	Apr. 27,14	Apr. 27,15
3m Semi-anechoic Chamber	ETS-LINDGREEN	966	KW01	Apr. 27,14	Apr. 27,15
Signal Amplifier	SONOMA	310	187016	Apr. 27,14	Apr. 27,15
Signal Amplifier	Agilent	8449B	3008A00251	Apr. 27,14	Apr. 27,15
RF Cable	IMRO	IMRO-400	966 Cable 1#	N/A	N/A
MULTI-DEVICE Controller	ETS-LINDGREEN	2090	126913	N/A	N/A
Horn Antenna	DAZE	ZN30701	11003	Apr. 27,14	Apr. 27,15
Horn Antenna	SCHWARZBECK	BBHA9170	9170-068	Apr. 27,14	Apr. 27,15
Spectrum Analyzer	Agilent	8593E	3911A04271	Apr. 27,14	Apr. 27,15
Spectrum Analyzer	Agilent	E4408B	MY44211125	Apr. 30,14	Apr. 30,15
Signal Amplifier	DAZE	ZN3380C	11001	Apr. 27,14	Apr. 27,15
High Pass filter	Micro	HPM50111	324216	Apr. 30,14	Apr. 30,15
Filter	COM-MW	ZBSF-C836.5-25-X	KW032	Apr. 30,14	Apr. 30,15
Filter	COM-MW	ZBSF-C1747.5-75-X2	KW035	Apr. 30,14	Apr. 30,15
Filter	COM-MW	ZBSF-C1880-60-X2	KW037	Apr. 30,14	Apr. 30,15
DC Power Supply	LongWei	PS-305D	010964729	Apr. 27,14	Apr. 27,15
Constant temperature and humidity box	GF	GTH-800-40-1P	MAA9906-005	Apr. 27,14	Apr. 27,15
Universal radio communication tester	Rohde&Schwarz	CMU200	3215420	Apr. 27,14	Apr. 27,15
Splitter	Agilent	11636B	0025164	Apr. 27,14	Apr. 27,15

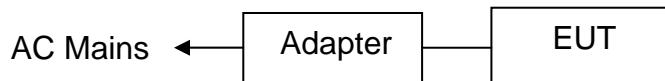
3. TEST SET-UP AND OPERATION MODES

3.1. Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

3.2. Block Diagram of Test Set-up

System Diagram of Connections between EUT and Simulators



3.3. Test Operation Mode and Test Software

None.

3.4. Special Accessories and Auxiliary Equipment

None.

3.5. Countermeasures to Achieve EMC Compliance

None.

4. EMISSION TEST RESULTS

4.1. Conducted Emission at the Mains Terminals Test

4.1.1. Limit 15.209 limits

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

4.1.2. Test Setup

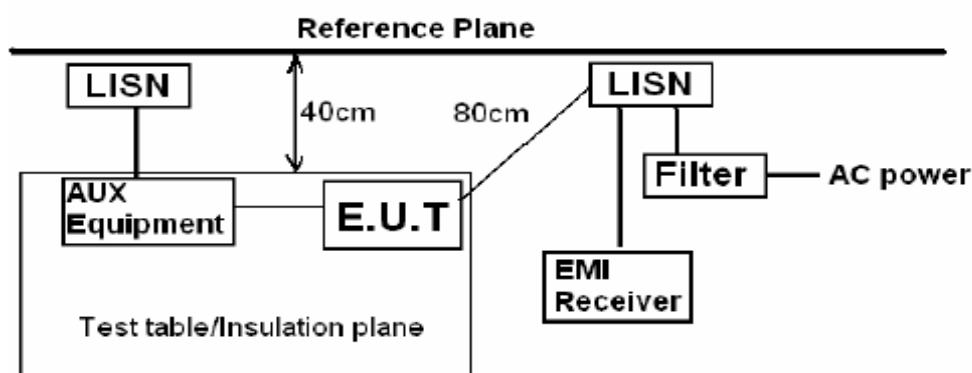
The EUT was put on a wooden table which was 0.8 m high above the ground and connected to the AC mains through the Artificial Mains Network (AMN). Where the mains cable supplied by the manufacture was longer than 0.8 m, the excess was folded back and forth parallel to the cable at the centre so as to form a bundle no longer than 0.4 m.

The EUT was kept 0.4 m from any other earthed conducting surface. Both sides of AC line were checked to find out the maximum conducted emission levels according to the test procedure during the conducted emission test.

The frequency range from 150 kHz to 30 MHz was investigated.

The bandwidth of the test receiver was set at 9 kHz.

Measurement Uncertainty: ± 2.6 dB at a level of confidence 95%.



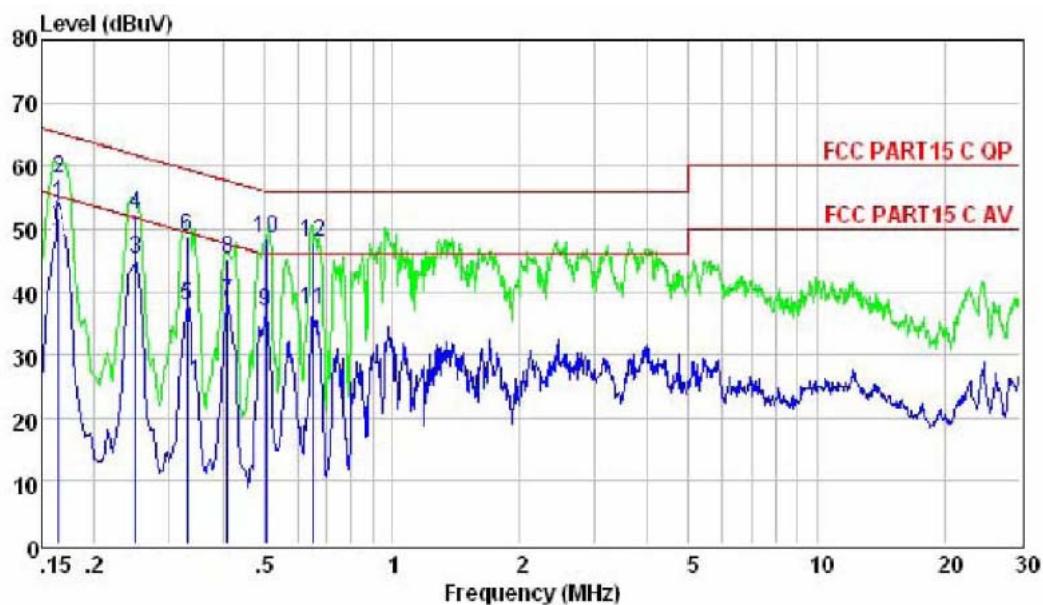
Remark:

E.U.T: Equipment Under Test

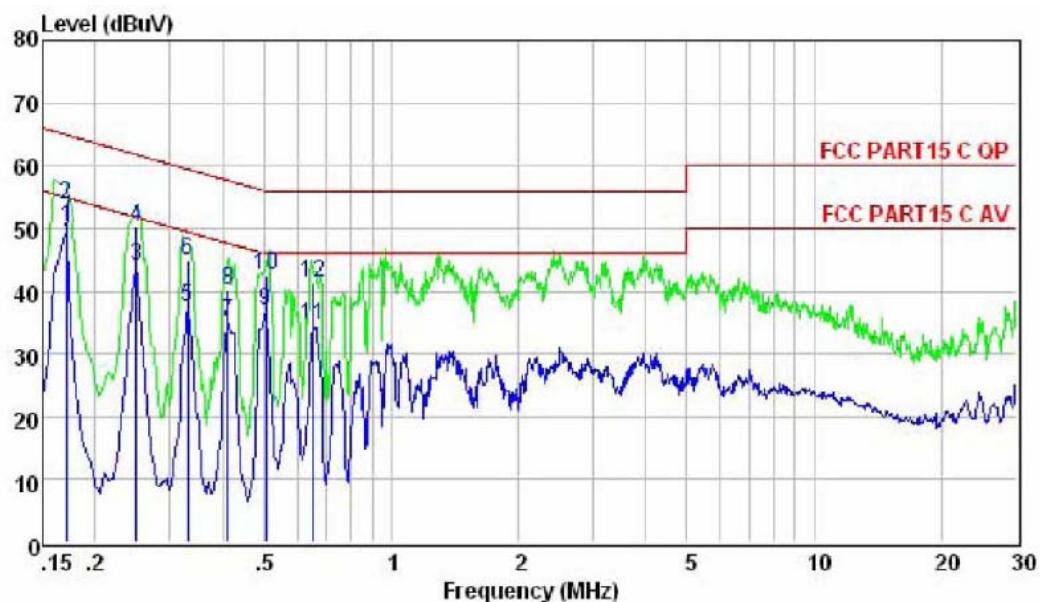
LISN: Line Impedance Stabilization Network

Test table height=0.8m

Line



Freq	Level	Limit	Over	Remark	
		Line	Limit		
		MHz	dBuV	dB	
1	0.165	54.16	55.21	-1.05	Average
2	0.165	57.96	65.21	-7.25	QP
3	0.249	45.11	51.78	-6.67	Average
4	0.249	52.30	61.78	-9.48	QP
5	0.330	37.76	49.44	-11.68	Average
6	0.330	48.70	59.44	-10.74	QP
7	0.410	38.43	47.64	-9.21	Average
8	0.410	45.30	57.64	-12.34	QP
9	0.505	36.80	46.00	-9.20	Average
10	0.505	48.60	56.00	-7.40	QP
11	0.651	37.05	46.00	-8.95	Average
12	0.651	47.90	56.00	-8.10	QP

Neutral

Freq	Level	Limit	Over
MHz	dBuV	dBuV	dB

1	0.170	53.40	54.94	-1.54	Average
2	0.170	53.80	64.94	-11.14	QP
3	0.249	44.06	51.78	-7.72	Average
4	0.249	50.30	61.78	-11.48	QP
5	0.330	37.34	49.44	-12.10	Average
6	0.330	44.80	59.44	-14.64	QP
7	0.410	35.12	47.64	-12.52	Average
8	0.410	40.20	57.64	-17.44	QP
9	0.505	36.90	46.00	-9.10	Average
10	0.505	42.60	56.00	-13.40	QP
11	0.654	34.55	46.00	-11.45	Average
12	0.654	41.30	56.00	-14.70	QP

4.2. Radiated Emission Test

4.2.1. Limit 15.209 limits

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		µV/m	dB(µV)/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(µV)/m (Peak) 54.0 dB(µV)/m (Average)	

4.2.2. Restricted bands of operation

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

4.2.3. Test setup

The EUT was placed on a turn table which was 0.8 m above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was set 3 m away from the receiving antenna which was mounted on an antenna tower. The measuring antenna moved up and down to find out the maximum emission level. It moved from 1 m to 4 m for both horizontal and vertical polarizations.

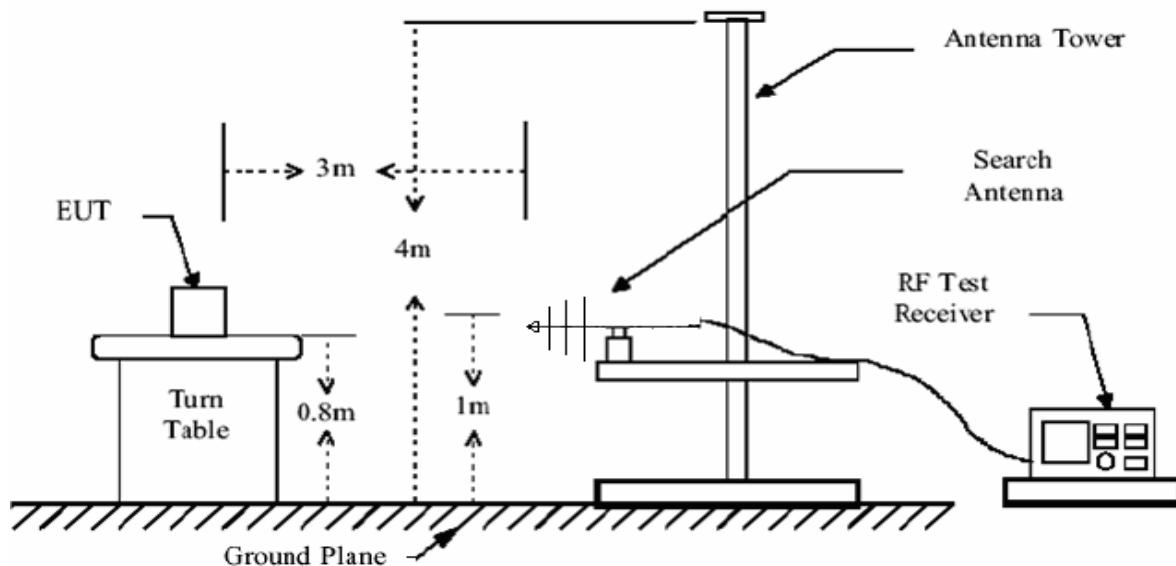
The EUT was tested in the Chamber Site. It was pre-scanned with a Peak detector from the spectrum, and all the final readings from the test receiver were measured with the Quasi-Peak detector.

The bandwidth of the EMI test receiver is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's VBW is set at 3MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz.

Notes:

1. Emission Level = Antenna Factor + Cable Loss + Meter Reading-Preamp Factor.
2. Measurement Uncertainty: ± 3.2 dB at a level of confidence of 95%.
3. For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.
4. For emissions below 1GHz, pretest for all mode, The test data of the worst case condition(s) was reported on the following pages.
- 5: The Max operation frequency of EUT is 2480MHz, the test frequency is up to 13GHz
- 6: The emission of below 30MHz is background, the data no show it.



Below 1GHz**Horizontal polarizations**

Freq	Preamp Factor	Read	CableAntenna		Limit Level	Line	Over Limit	Remark
		Level	Loss Factor	dB/m				
MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	185.20	31.14	54.23	1.39	10.24	34.72	43.50	-8.78 QP
2	359.80	30.62	42.49	2.18	16.11	30.16	46.00	-15.84 QP
3	390.84	30.63	51.62	2.37	16.26	39.62	46.00	-6.38 QP
4	445.16	30.61	50.67	2.62	17.50	40.18	46.00	-5.82 QP
5	495.60	30.59	48.73	2.77	18.63	39.54	46.00	-6.46 QP
6	755.56	30.67	36.99	4.12	22.78	33.22	46.00	-12.78 QP

Vertical polarizations

Freq	Preamp Factor	Read	CableAntenna		Limit Level	Line	Over Limit	Remark
		Level	Loss Factor	dB/m				
MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	34.85	31.38	48.01	0.56	15.94	33.13	40.00	-6.87 QP
2	90.14	31.35	53.18	0.94	9.11	31.88	43.50	-11.62 QP
3	144.46	31.23	52.91	1.22	8.67	31.57	43.50	-11.93 QP
4	177.44	31.17	50.80	1.39	10.32	31.34	43.50	-12.16 QP
5	390.84	30.63	49.19	2.37	16.26	37.19	46.00	-8.81 QP
6	495.60	30.59	50.13	2.77	18.63	40.94	46.00	-5.06 QP

Above 1GHz**Horizontal polarizations**

Freq	Preamp Factor	Read	Cable		Antenna	Limit	Over Line	Over Limit	Remark
		Level	Loss	Factor	Level				
MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	dB	
1	3352.00	26.67	33.44	9.97	30.34	47.08	74.00	-26.92	Peak
2	5932.00	27.69	25.40	16.25	35.05	49.01	74.00	-24.99	Peak
3	7036.00	27.91	24.15	16.60	37.21	50.05	74.00	-23.95	Peak
4	8236.00	28.17	23.22	16.71	36.59	48.35	74.00	-25.65	Peak
5	10312.00	28.83	22.28	17.03	38.91	49.39	74.00	-24.61	Peak
6	11296.00	28.93	22.27	17.22	39.74	50.30	74.00	-23.70	Peak

Vertical polarizations

Freq	Preamp Factor	Read	Cable		Antenna	Limit	Over Line	Over Limit	Remark
		Level	Loss	Factor	Level				
MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	dB	
1	2680.00	26.40	36.15	8.38	29.24	47.37	74.00	-26.63	Peak
2	4924.00	27.56	30.41	12.28	33.23	48.36	74.00	-25.64	Peak
3	6784.00	27.86	25.12	16.60	36.62	50.48	74.00	-23.52	Peak
4	8476.00	28.24	24.09	16.76	36.79	49.40	74.00	-24.60	Peak
5	9436.00	28.57	23.09	16.92	37.92	49.36	74.00	-24.64	Peak
6	10756.00	28.88	22.27	17.12	39.36	49.87	74.00	-24.13	Peak

5. PHOTOGRAPHS OF TEST SET-UP

Conducted Emission



Radiated Emission

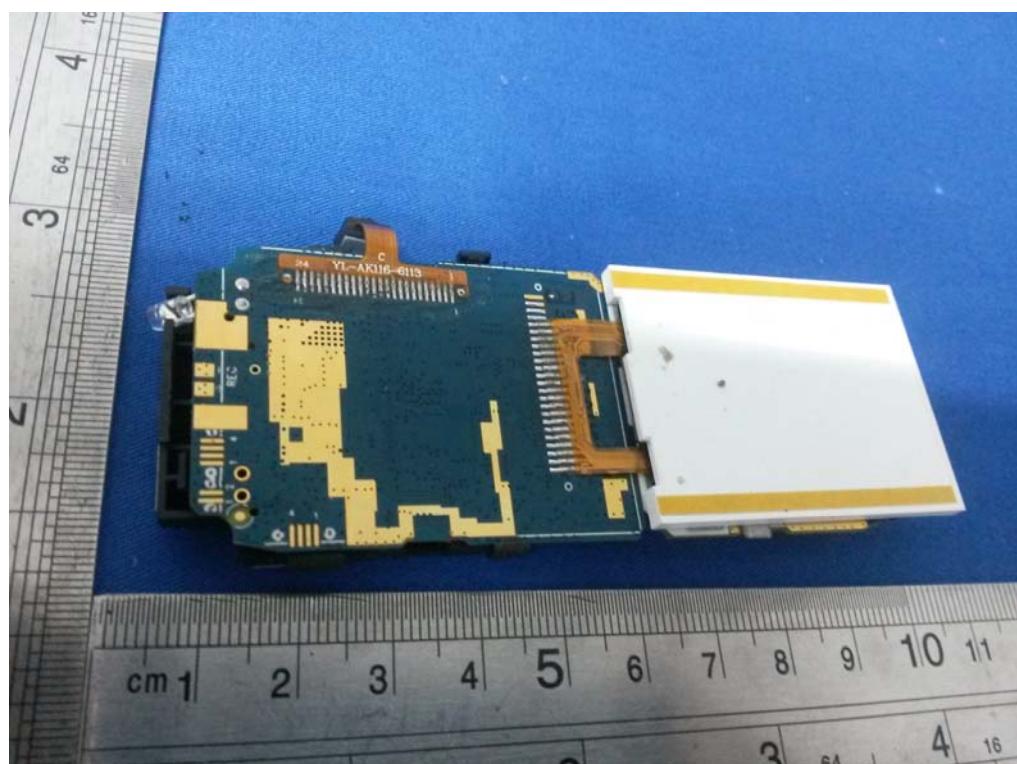


6. PHOTOGRAPHS OF THE EUT









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