

FCC

RF

TEST REPORT

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR
Mobile Phone

ISSUED TO
Shenzhen Huadoo Bright Group Limited

Room 13E, jinsong Buiding, Tai ran 4th Rood, chengong miao, Futian
District, Shenzhen



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Date: *Oct 31, 2014*

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Wei Yanquan
(Chief Engineer)

Date: *Oct 31, 2014*

Report No.: BL-SZ1480032-605

EUT Type: Mobile Phone

Model Name: Huadoo V3

Brand Name: Huadoo

Test Standard: 47 CFR Part 15 Subpart C

FCC ID: 2ACXS-V3

Test conclusion: PASS

Test Date: Aug 20, 2014 ~ Oct 16, 2014

Date of Issue: Oct 31, 2014

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Revision History

<u>Version</u>	<u>Issue Date</u>	<u>Revisions</u>
<u>Rev. 01</u>	<u>Oct 17, 2014</u>	<u>Initial Issue</u>
<u>Rev. 02</u>	<u>Oct 31, 2014</u>	<u>The Second Issue</u>

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1 ADMINISTRATIVE DATA (GENERAL INFORMATION)

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6683 3402
Fax Number	+86 755 6182 4271

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	<p>The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1.</p> <p>The laboratory has been listed by US Federal Communications Commission to perform electromagnetic emission measurements. The recognition numbers of test site are 832625.</p> <p>The laboratory has met the requirements of the IAS Accreditation Criteria for Testing Laboratories (AC89), has demonstrated compliance with ISO/IEC Standard 17025:2005. The accreditation certificate number is TL-588.</p> <p>The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.</p>
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Test Environment Condition

Ambient Temperature	15 to 35°C
Ambient Relative Humidity	30 to 60%
Ambient Pressure	86 to 106 kPa

1.4 Announce

- (1) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
- (2) The test report is invalid if there is any evidence and/or falsification.
- (3) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
- (4) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.
- (5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

2 PRODUCT INFORMATION

2.1 Applicant

Applicant	Shenzhen Huadoo Bright Group Limited
Address	Room 13E, jinsong Buiding, Tai ran 4th Rood, chegong miao, Futian Distrct, Shenzhen

2.2 Manufacturer

Manufacturer	Shenzhen Huadoo Bright Group Limited
Address	Room 13E, jinsong Buiding, Tai ran 4th Rood, chegong miao, Futian Distrct, Shenzhen

2.3 General Description for Equipment under Test (EUT)

EUT Type	Mobile Phone
Model Name	Huadoo V3
Hardware Version	GMAL
Software Version	Huadoo V1_Chinas_ENGLISH_13_V0.1_V2_20140708
Network and Wireless connectivity	2G Network GSM 850/900 / 1800/1900 3G Network WCDMA Band I/ V/IX
About the Product	The equipment is Mobile Phone, intended for used with information technology equipment.

2.4 Technical Information

Hardware Version	N/A
Software Version	N/A
Modulation Type	ASK
Frequency Range	13.56MHz
Receiver Categorization	3
Number of channel	1
Tested Channel	1
Antenna Type	PIFA Antenna
Antenna Gain	0dBi

Note: The above EUT information in section 2.3 and 2.4 was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

2.5 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	N/A
	Model No	V3
	Serial No	N/A
	Capacitance	2800mAh
	Rated Voltage	3.7V
	Extreme Voltage	Low: 3.5V / High:4.2V
Ancillary Equipment 2	Charger	
	Brand Name	N/A
	Model No	HJ-0501000
	Serial No	N/A
	Rated Input	~ 100-240V, 0.15A, 50/60Hz
	Rated Output	= 5V, 1000mA
Ancillary Equipment 3	Earphone	
Ancillary Equipment 4	USB Cable	

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 15, Subpart C (12-30-13 Edition)	Intentional Radiators
3	ANSI C63.4-2009	American National Standard for Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
4	ANSI C63.10-2009	American National Standard for Testing Unlicensed Wireless Devices

3.2 Verdict

No.	Description	FCC Part No.	Test Result	Verdict
1	Antenna Requirement	15.203	--	PASS ^{Note 1}
2	Emissions Bandwidth	2.1049	ANNEX A.1	PASS
3	Field Strength of Fundamental Emissions	15.225(a)	ANNEX A.2	PASS
4	Radiated Emissions	15.225(d) 15.209	ANNEX A.3	PASS
5	Frequency Stability	15.225(e)	ANNEX A.4	PASS
6	Conducted Emission	15.207	ANNEX A.5	PASS
Note 1: The EUT has a permanently and irreplaceable attached antenna, which complies with the requirement FCC 15.203.				

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

During the measurement, the normal environmental conditions were within the listed ranges:

Relative Humidity (%)	30 -60	
Atmospheric Pressure (kPa)	86-106	
Temperature	NT (Normal Temperature)	+20°C to +25°C
	LT (Low Temperature)	-20°C
	HT (High Temperature)	+55°C
Working Voltage of the EUT	NV (Normal Voltage)	3.7 V
	LV (Low Voltage)	3.5 V
	HV (High Voltage)	4.2 V

4.2 Test Equipment List

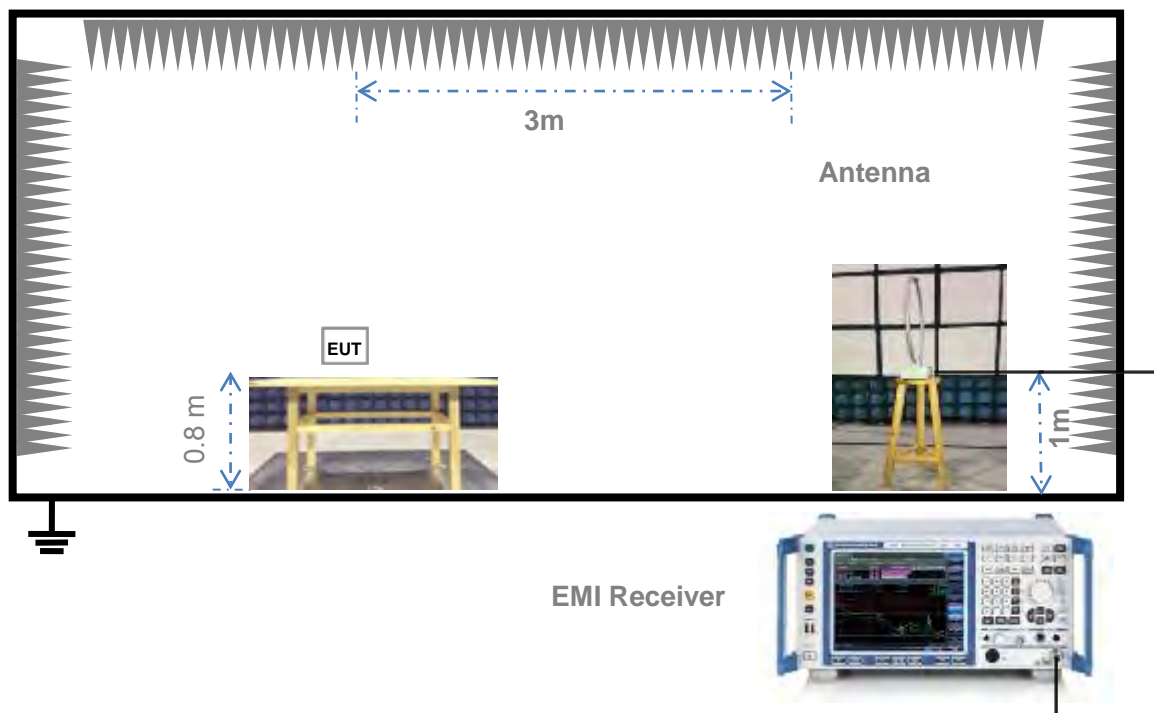
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	AGILENT	E4440A	MY45304434	2014.07.07	2015.07.06
Spectrum Analyzer	ROHDE&SCHWARZ	FSL3	103640/003	2014.07.07	2015.07.06
Bluetooth Tester	ROHDE&SCHWARZ	CBT	101005	2014.07.07	2015.07.06
Power Splitter	KMW	DCPD-LDC	1305003215	2014.07.07	2015.07.06
Power Sensor	ROHDE&SCHWARZ	NRP-Z21	103971	2014.07.07	2015.07.06
Attenuator (20dB)	KMW	ZA-S1-201	110617091	--	--
Attenuator (6dB)	KMW	ZA-S1-61	1305003189	--	--
DC Power Supply	ROHDE&SCHWARZ	HMP2020	018141664	2014.07.07	2015.07.06
Temperature Chamber	ANGELANTIONI SCIENCE	NTH64-40A	1310	2014.07.07	2015.07.06
Test Antenna-Loop(9kHz-30MHz)	SCHWARZBECK	FMZB 1519	1519-037	2013.07.03	2015.07.02
Test Antenna-Bi-Log(30MHz-3G Hz)	SCHWARZBECK	VULB 9163	9163-624	2013.07.02	2015.07.01
Test Antenna-Horn(1-18GHz)	SCHWARZBECK	BBHA 9120D	9120D-1148	2013.07.02	2015.07.01
Test Antenna-Horn(15-26.5GHz)	SCHWARZBECK	BBHA 9170	9170-305	2013.07.02	2015.07.01
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2014.10.07	2015.10.06

4.3 Test Configurations

Test Configurations (TC) NO.	Description	
	Signal Description	Operating Frequency
Transmitter		
TC01	ASK	13.56MHz

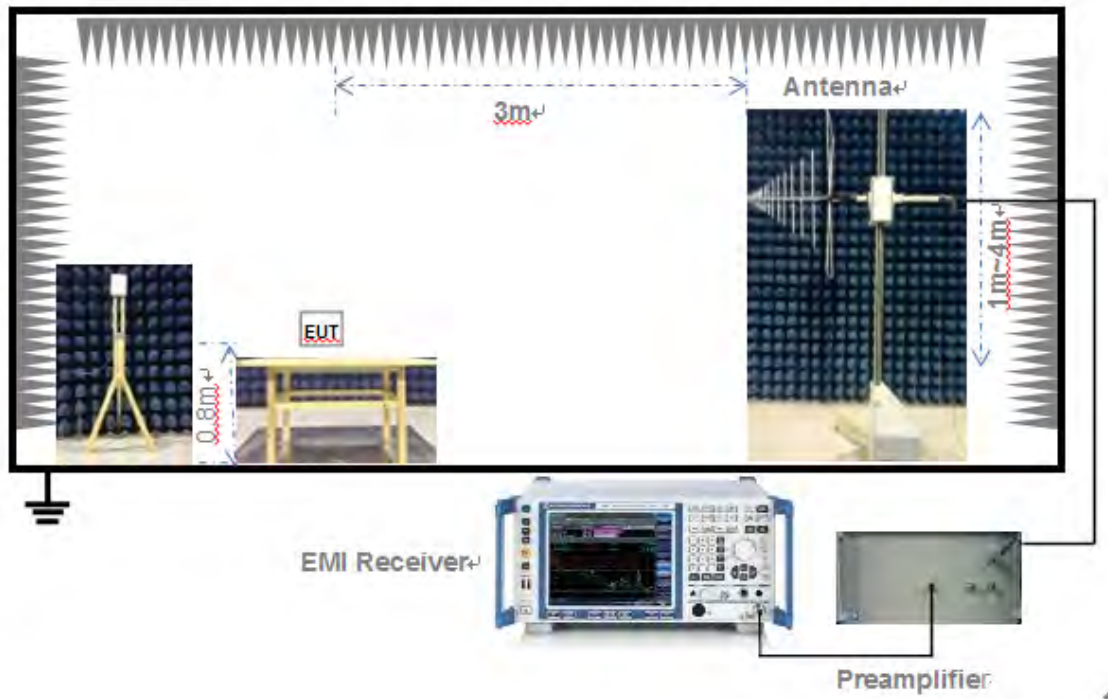
4.4 Description of Test Setup

4.4.1 For Radiated Test (Below 30MHz)



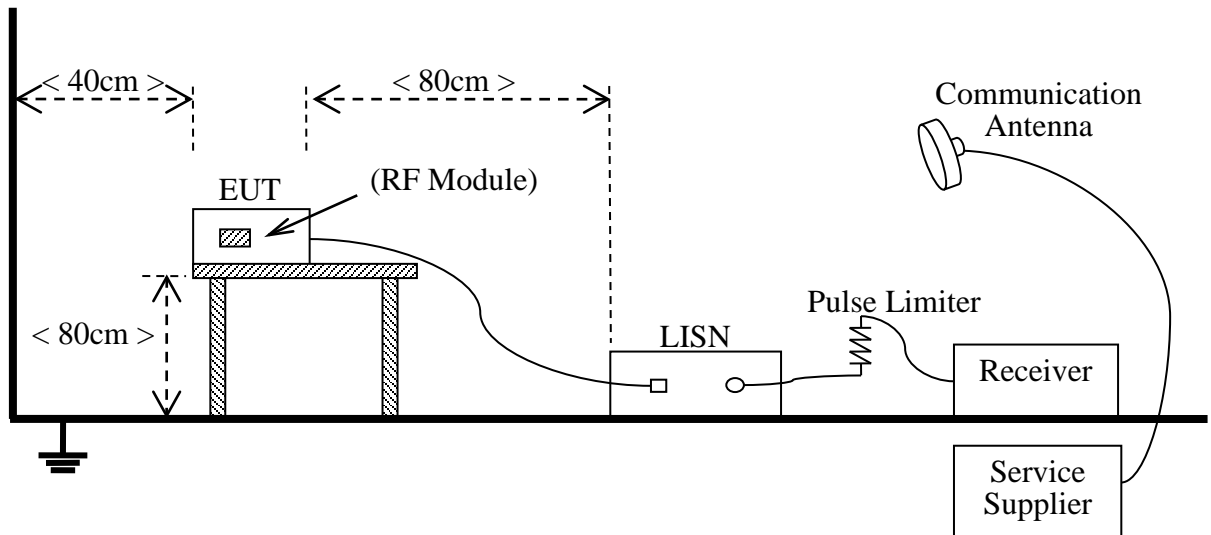
(Diagram 1)

4.4.2 For Radiated Test (30MHz-1GHz)



(Diagram 2)

4.4.3 For AC Power Supply Port Test



(Diagram 3)

4.5 Test Conditions

Test Case	Test Conditions		
	Test Env.	Test Setup ^{Note 1}	Test Configuration ^{Note 2}
Emissions Bandwidth	NTNV	Test Setup 1	TC01
Field Strength of Fundamental Emissions	NTNV	Test Setup 1	TC01
Radiated Emissions	NTNV	Test Setup 1 Test Setup 2	TC01
Frequency Stability	NTNV	Test Setup 1	TC01
Conducted Emission	NTNV	Test Setup 3	TC01
Note: 1. Please refer to section 4.4 for test setup details. 2. Please refer to section 4.3 for test setup details.			

5 TEST ITEMS

5.1 Antenna Requirements

5.1.1 Standard Applicable

FCC §15.203 & 15.247(b)

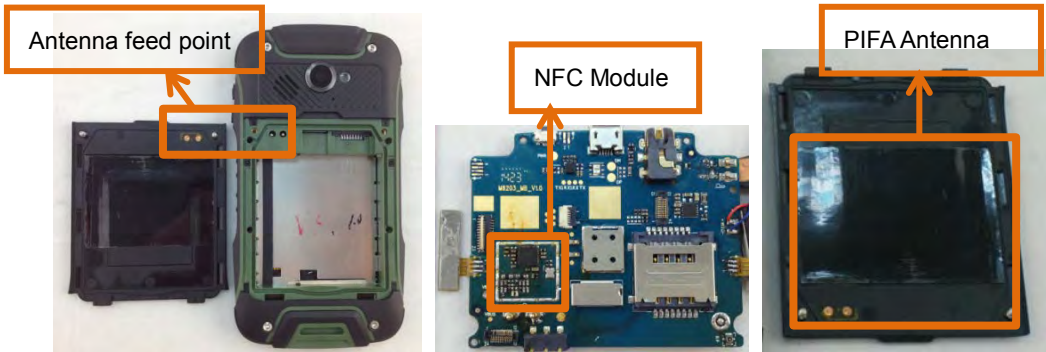
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of § 15.211, § 15.213, § 15.217, § 15.219, or § 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

5.1.2 Antenna Anti-Replacement Construction

The Antenna Anti-Replacement as following method:

Protected Method	Description
The antenna is An embedded-in	An embedded-in antenna design is used.

Reference Documents	Item
Photo	 <p>Antenna feed point</p> <p>NFC Module</p> <p>PIFA Antenna</p>

5.1.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

5.2 Emission Bandwidth

5.2.1 Definition

FCC §2.1049&15.215(c)

Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency.

5.2.2 Test Procedure

The 20dB bandwidth is measured with a spectrum analyzer connected via a receiver antenna placed near the EUT while the EUT is operating in transmission mode.

Use the following spectrum analyzer settings:

Span = approximately 2 to 3 times the 20 dB bandwidth

RBW \geq 1% of the 20 dB bandwidth

VBW \geq RBW

Sweep = auto

Detector function = peak

Trace = max hold

5.3 Field Strength of Fundamental Emissions and Radiated Emissions

5.3.1 Limit

FCC §15.225(a), (b), (c)

According to FCC section 15.225, for <30MHz, Radiated emissions were measured according to ANSIC63.4. The EUT was set to transmit at the highest output power. The EUT was set 10 meter away from the measuring antenna. The loop antenna was positioned 1 meter above the ground from the center of the loop. The measuring bandwidth was set to 10KHz. (Note: During testing the receive antenna was rotated about its axis to maximize the emission from the EUT)

There was no detected Restricted bands and Radiated suprious emission below 30MHz. The 30m limit was converted to 3m Limit using square factor(x) as it was found by measurements as follows; 3 m Limit(dBuV/m) = $20\log(X)+40\log(30/3)= 20\log(15848)+40\log(30/3) = 124\text{dBuV}$

Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency range (MHz)	Field Strength@30m		Field Strength@3m
	$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$
Below 13.110	30	29.5	69.5
13.110 ~ 13.410	106	40.5	80.5
13.410 ~ 13.553	334	50.5	90.5
13.553 ~13.567	15.848	84	124
13.567 ~ 13.710	334	50.5	90.5
13.710 ~14.010	106	40.5	80.5
Above 14.010	30	29.5	69.5

NOTE:

1. Field Strength ($\text{dB}\mu\text{V/m}$) = $20*\log[\text{Field Strength } (\mu\text{V/m})]$.
2. In the emission tables above, the tighter limit applies at the band edges.

FCC §15.225(d)

According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)
0.009 - 0.490	2400/F(kHz)
0.490 - 1.705	24000/F(kHz)
1.705 - 30.0	30
30 - 88	100
88 - 216	150
216 - 960	200
Above 960	500

Note:

- For Above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.
- For above 1000MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK).

5.3.2 Test Procedure

The measurement frequency range is from 9kHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented. The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz

VBW \geq RBW

Sweep = auto

Detector function = peak

Trace = max hold

5.4 Frequency Tolerance

5.4.1 Limit

FCC §15.225(e)

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency over a temperature variation of -20 degrees to $+50$ degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

5.4.2 Test Procedure

1. The test is performed in a Temperature Chamber.
2. The EUT is configured as MS + DC Power Supply.

5.5 Conducted Emission

5.5.1 Limit

FCC §15.207

For an intentional radiator 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 within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 Ω line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dB μ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
0.50 - 30	60	50

5.5.2 Test Procedure

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.

ANNEX A TEST RESULT

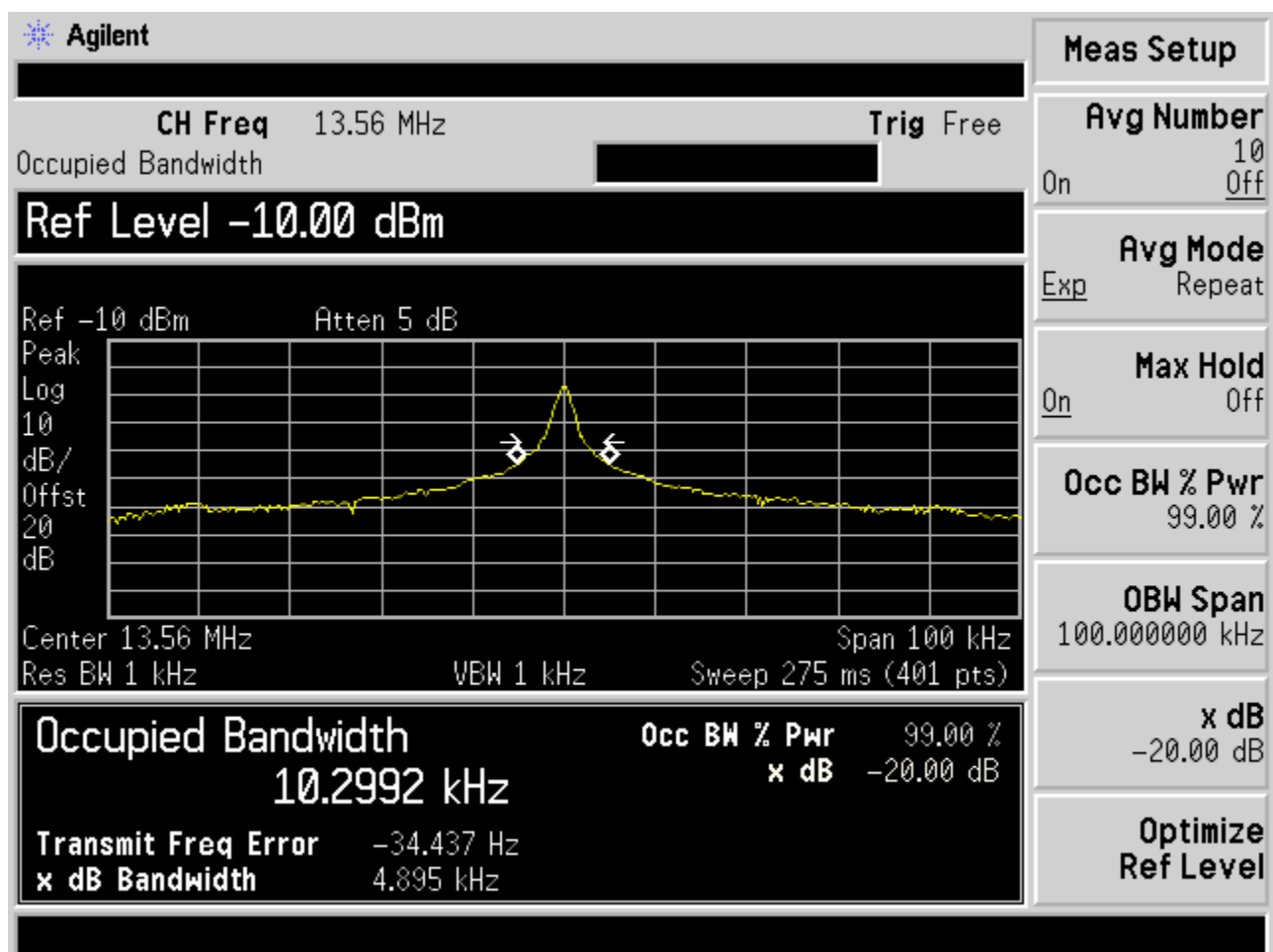
A.1 Emission Bandwidth

Test Data

Frequency (MHz)	Emission Bandwidth (kHz)
13.56	4.895

Test plots

Emission Bandwidth



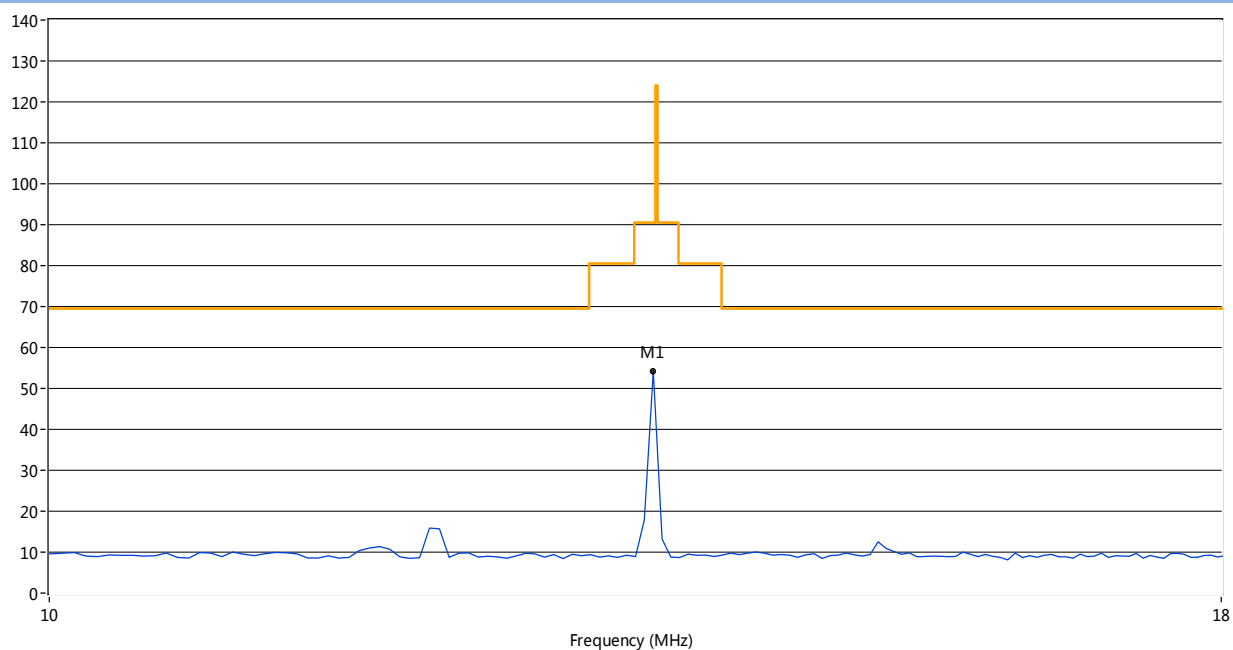
A.2 Field Strength of Fundamental Emissions

Test Data

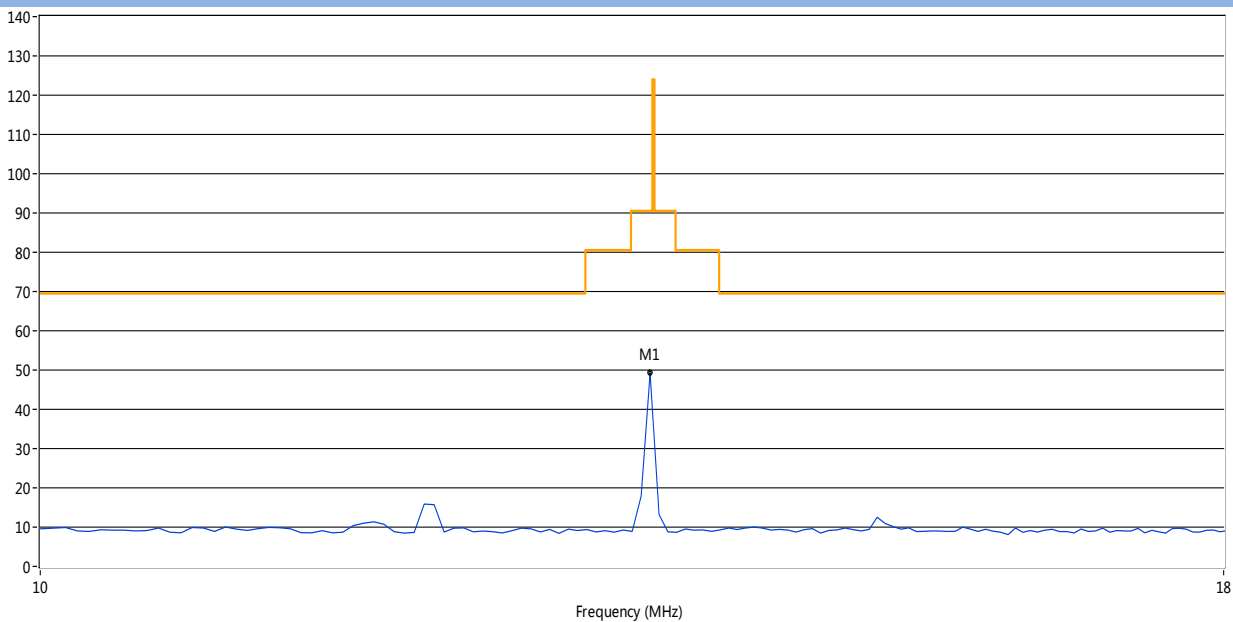
Field Strength of Fundamental Emissions Value					
Frequency (MHz)	Detector	Field Strength (dBuV/m)	Limit @3m (dBuV/m)	Antenna	Margin (dB)
13.56	PEAK	54.21	124	Vertical	69.79
13.56	PEAK	48.67	124	Horizontal	75.33

Test Plot

ANT-LOOP Vertical



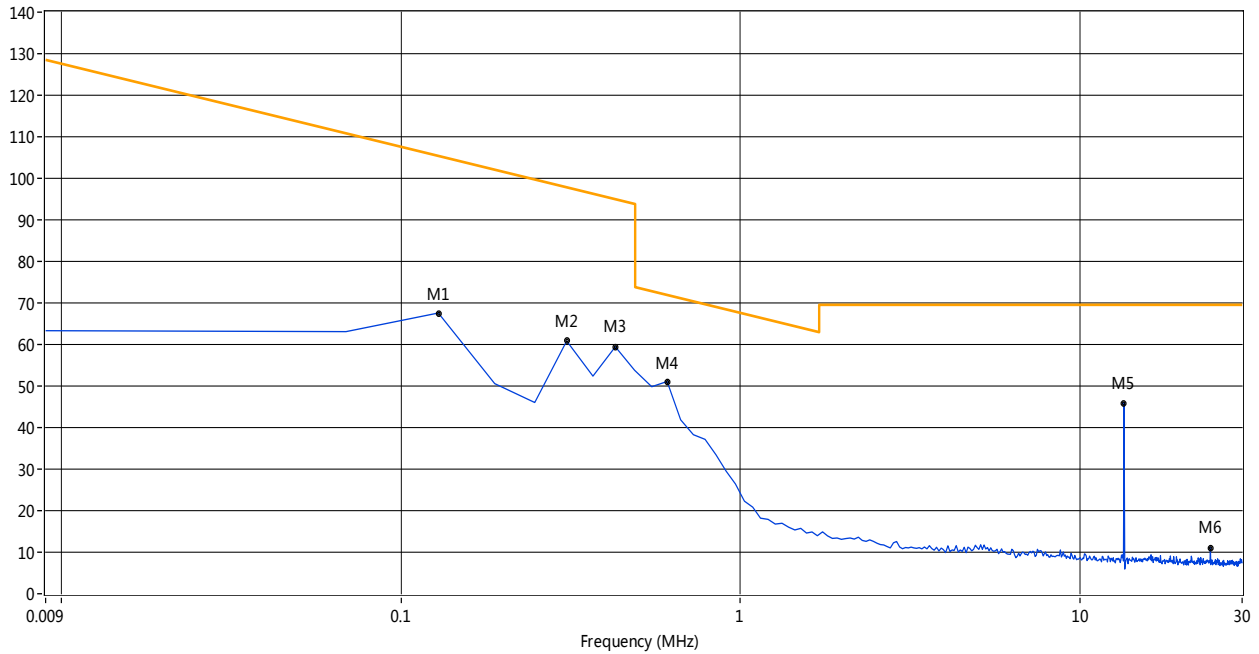
ANT-LOOP Horizontal



A.3 Radiated Emissions

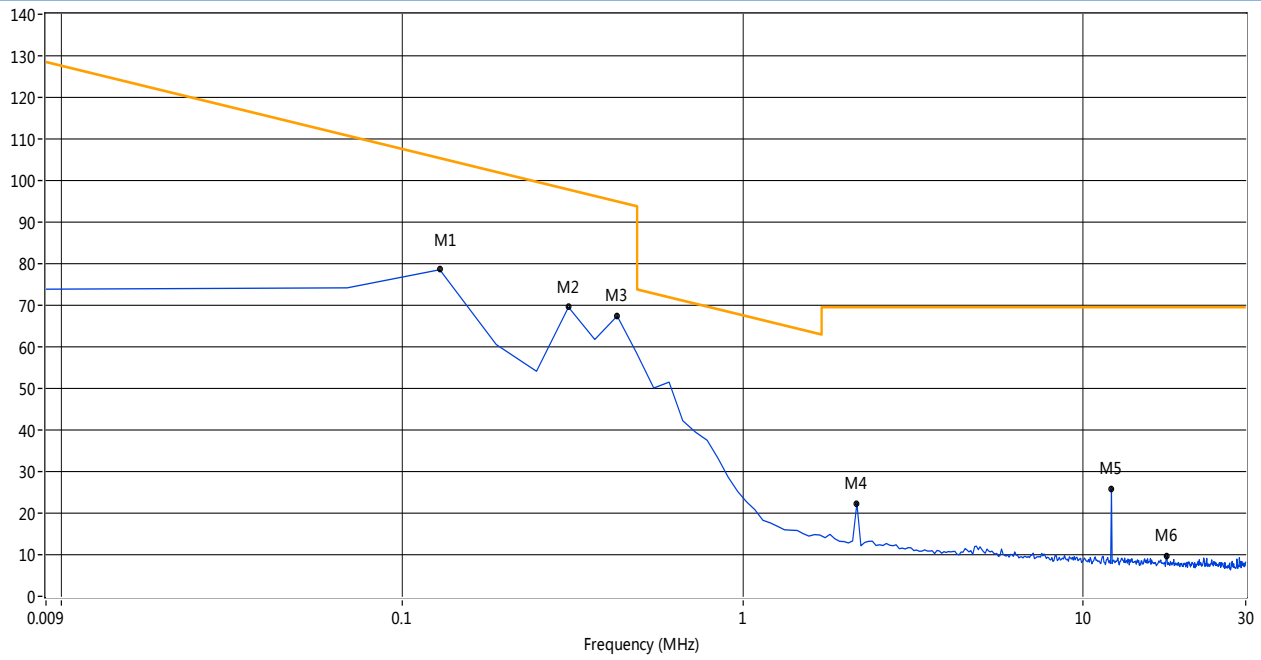
The worst data of 9 kHz to 30MHz

Below 30MHz ANT V



Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
0.13	67.56			17.48	--	119.8	--	52.24	291.40	100	Vertical	PASS
0.31	60.85			21.86	--	106.9	--	46.05	354.20	100	Vertical	PASS
0.43	59.45			30.16	--	98.3	--	38.85	135.90	100	Vertical	PASS
0.61	51.08			26.30	--	72.7	--	21.62	239.70	100	Vertical	PASS
13.48	45.93			-34.07	--	69.5	--	23.57	360.00	100	Vertical	PASS
24.19	11.07			-33.66	--	69.5	--	58.43	282.90	100	Vertical	PASS

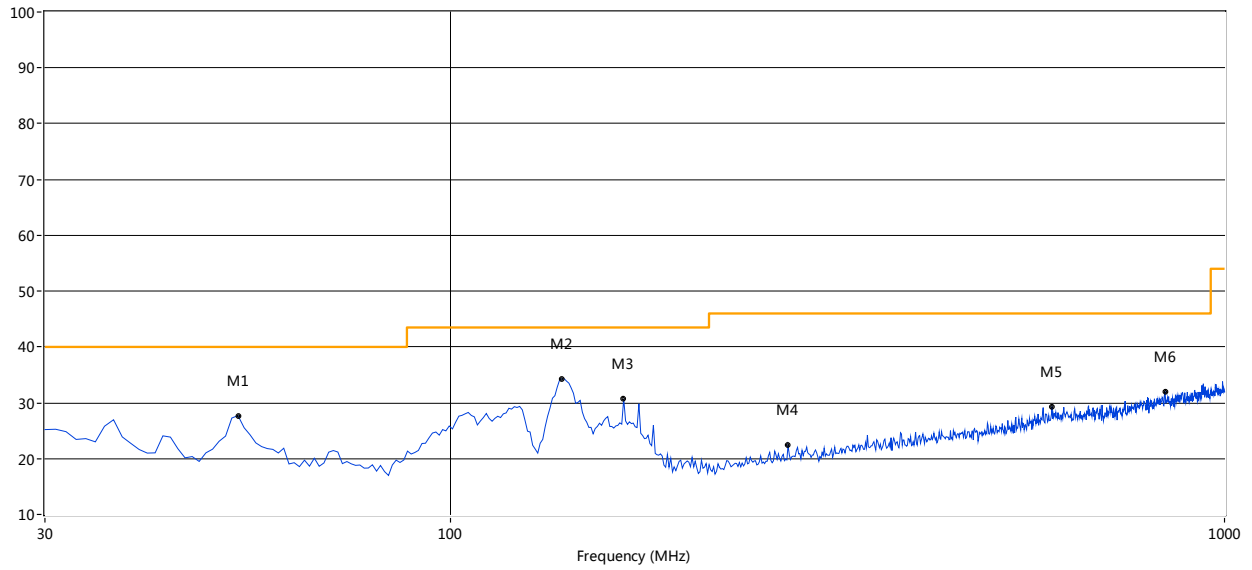
Below 30MHz ANT H



Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
0.13	78.55			28.56	--	119.8	--	41.25	75.50	100	Vertical	PASS
0.31	69.54			30.64	--	106.9	--	37.36	49.10	100	Vertical	PASS
0.43	67.41			38.29	--	98.3	--	30.89	19.10	100	Vertical	PASS
2.16	22.36			-27.64	--	69.5	--	47.14	122.90	100	Vertical	PASS
13.56	25.85			-34.15	--	69.5	--	43.65	192.30	100	Vertical	PASS
17.61	9.69			-33.87	--	69.5	--	59.81	359.70	100	Vertical	PASS

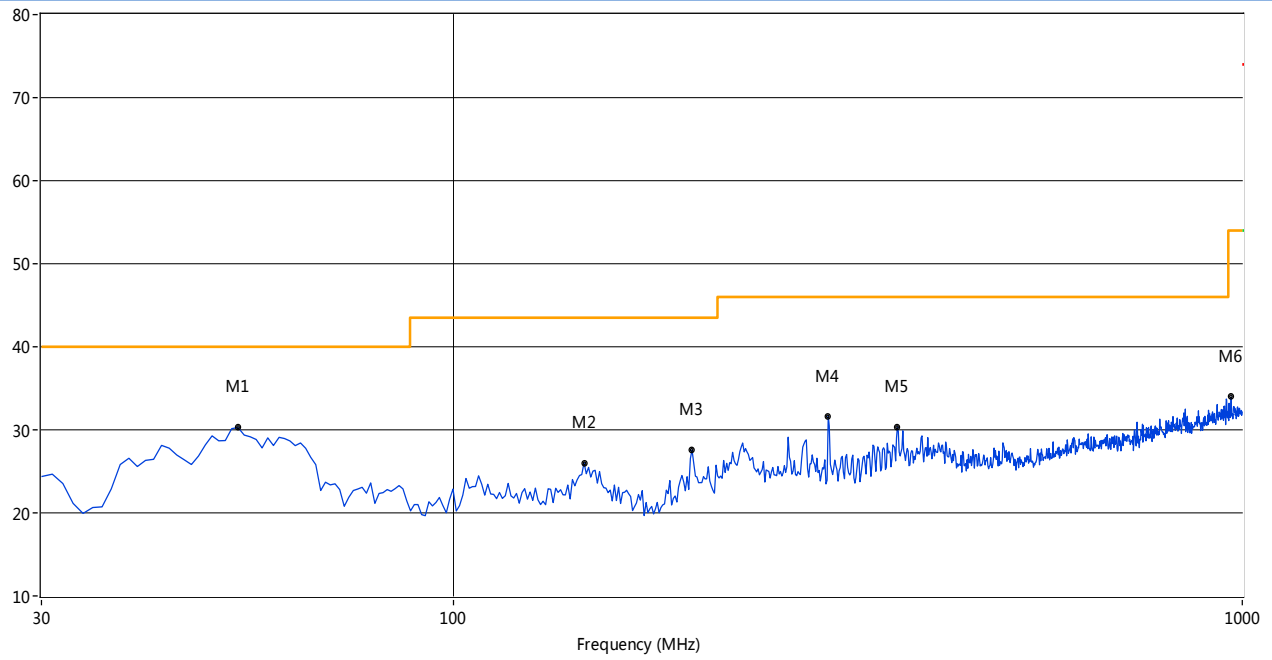
Test Data and Plots (30MHz ~ 10th Harmonic)

30MHz to 1GHz, ANT V



Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
53.26		27.17		-18.11	--	40.0	--	12.83	99.40	100	Vertical	PASS
139.50		33.73		-23.09	--	43.5	--	9.77	129.90	100	Vertical	PASS
167.60		29.93		-22.25	--	43.5	--	13.57	69.40	100	Vertical	PASS
273.23		21.49		-17.94	--	46.0	--	24.51	104.60	100	Vertical	PASS
598.82		28.94		-10.25	--	46.0	--	17.06	356.60	100	Vertical	PASS
838.17		31.34		-6.24	--	46.0	--	14.66	-0.00	100	Vertical	PASS

30MHz to 1GHz, ANT H



Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
53.26		30.95		-18.11	--	40.0	--	9.05	132.00	100	Horizontal	PASS
146.28		25.12		-23.11	--	43.5	--	18.38	71.60	100	Horizontal	PASS
200.55		27.26		-19.86	--	43.5	--	16.24	231.20	200	Horizontal	PASS
298.42		31.14		-17.33	--	46.0	--	14.86	-0.00	200	Horizontal	PASS
365.28		29.95		-15.56	--	46.0	--	16.05	212.10	100	Horizontal	PASS
968.02		33.32		-4.36	--	54.0	--	20.68	-0.00	100	Horizontal	PASS

A.4 Frequency Stability

OPERATING FREQUENCY: 13560000 Hz

REFERENCE VOLTAGE: 3.7 V

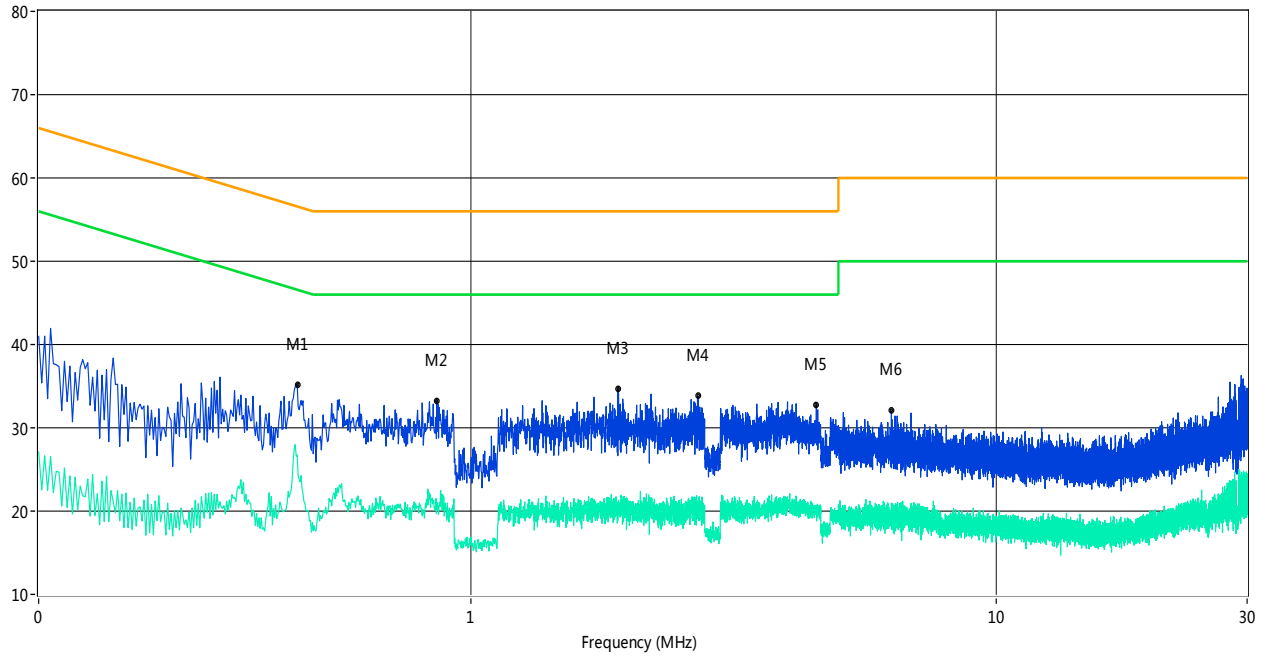
DEVIATION LIMIT: $\pm 0.01\%$

VOLTAGE(%)	Test Conditions		Frequency(Hz)	Deviation(ppm)	Verdict
	Power (VDC)	Temperature (°C)			
100	3.7	+20°C(Ref)	13560265	-0.00001954	PASS
100		-20	13560339	-0.00002500	
100		-10	13560568	-0.00004189	
100		0	13560674	-0.00004971	
100		+10	13560549	-0.00004049	
100		+20	13560268	-0.00001976	
100		+25	13560318	-0.00002345	
100		+30	13560667	-0.00004919	
100		+40	13560619	-0.00004565	
100		+50	13560467	-0.00003444	
Battery End Point	3.5	+20	13560603	-0.00004447	
115	4.2	+20	13560547	-0.00004034	

A.5 Conducted Emissions

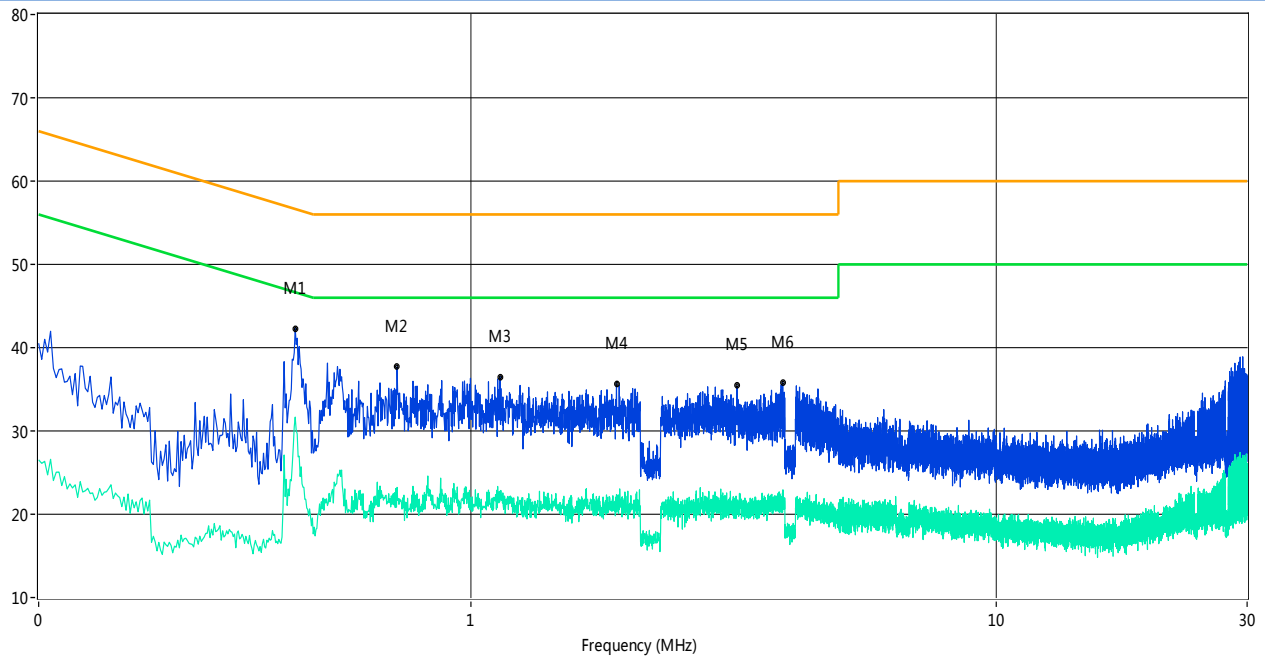
Test Data and Plots

PHASE L



Frequency (MHz)	Peak (dBm)	Q-peak (dBuV)	Average (dBuV)	Factor (dB)	QP Limit (dBuV)	AV Limit (dBuV)	Margin (dB)	Line	Verdict
0.47	--	35.2	26.7	10.00	57.0	47.0	20.30	L Line	PASS
0.86	--	33.3	21.1	10.00	56.0	46.0	24.90	L Line	PASS
1.90	--	34.7	21.1	10.00	56.0	46.0	24.90	L Line	PASS
2.70	--	33.8	20.8	10.00	56.0	46.0	25.20	L Line	PASS
4.54	--	32.8	20.5	10.00	56.0	46.0	25.50	L Line	PASS
6.31	--	32.0	20.5	10.00	60.0	50.0	29.50	L Line	PASS

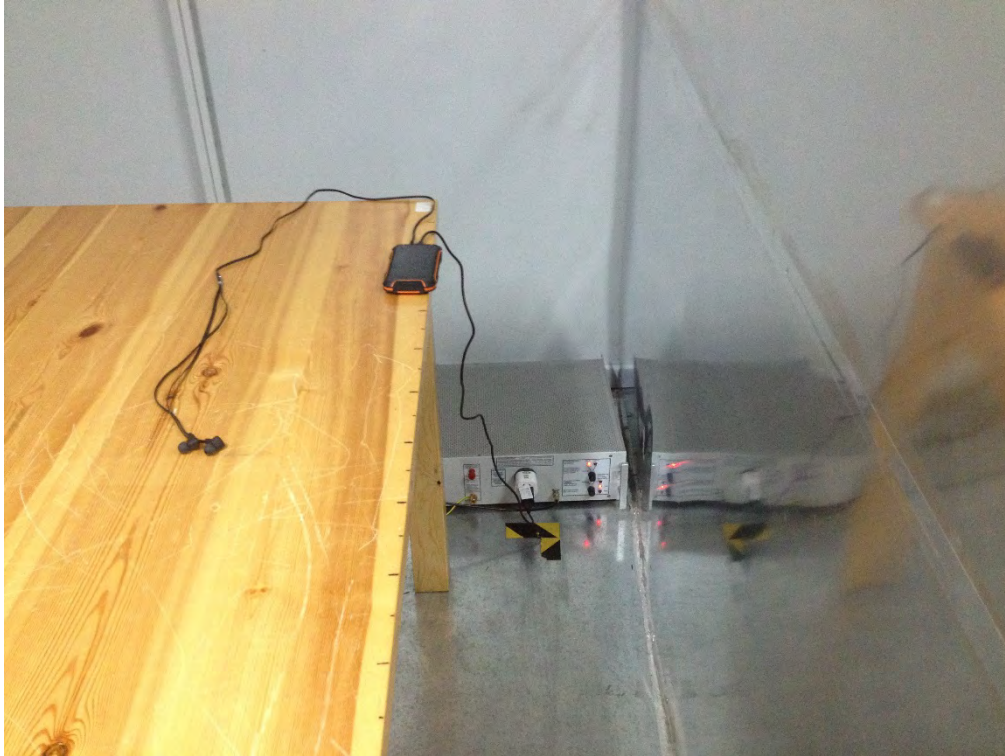
PHASE N



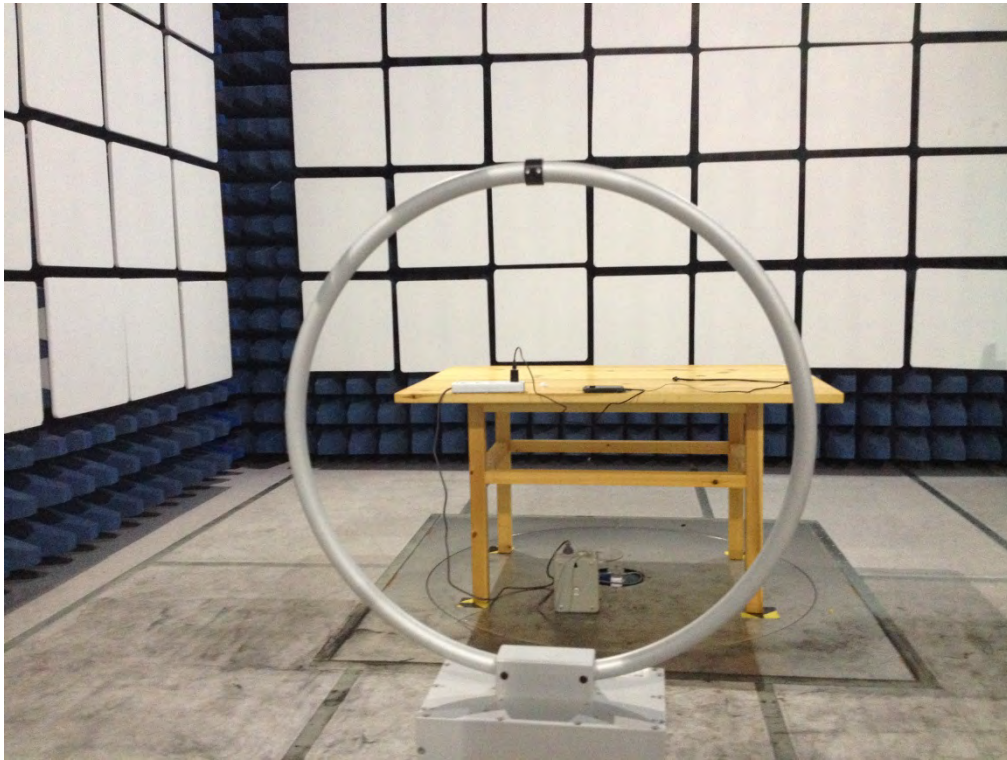
Frequency (MHz)	Peak (dBm)	Q-peak (dBuV)	Average (dBuV)	Factor (dB)	QP Limit (dBuV)	AV Limit (dBuV)	Margin (dB)	Line	Verdict
0.46	--	42.3	31.7	10.00	57.1	47.1	15.40	N Line	PASS
0.72	--	37.7	23.2	10.00	56.0	46.0	22.80	N Line	PASS
1.13	--	36.5	22.8	10.00	56.0	46.0	23.20	N Line	PASS
1.89	--	35.7	22.4	10.00	56.0	46.0	23.60	N Line	PASS
3.20	--	35.4	20.7	10.00	56.0	46.0	25.30	N Line	PASS
3.92	--	35.8	22.5	10.00	56.0	46.0	23.50	N Line	PASS

ANNEX B TEST SETUP PHOTOS

B.1 Conducted Emissions Test Photo



B.2 Radiated Test Photo



Below 30MHz



30MHz to 1GHz

ANNEX C EUT PHOTOS

C.1 Appearance of the EUT



THE FRONT OF EUT



THE BACK OF EUT



THE LEFT OF EUT



THE RIGHT OF EUT



THE UP OF EUT



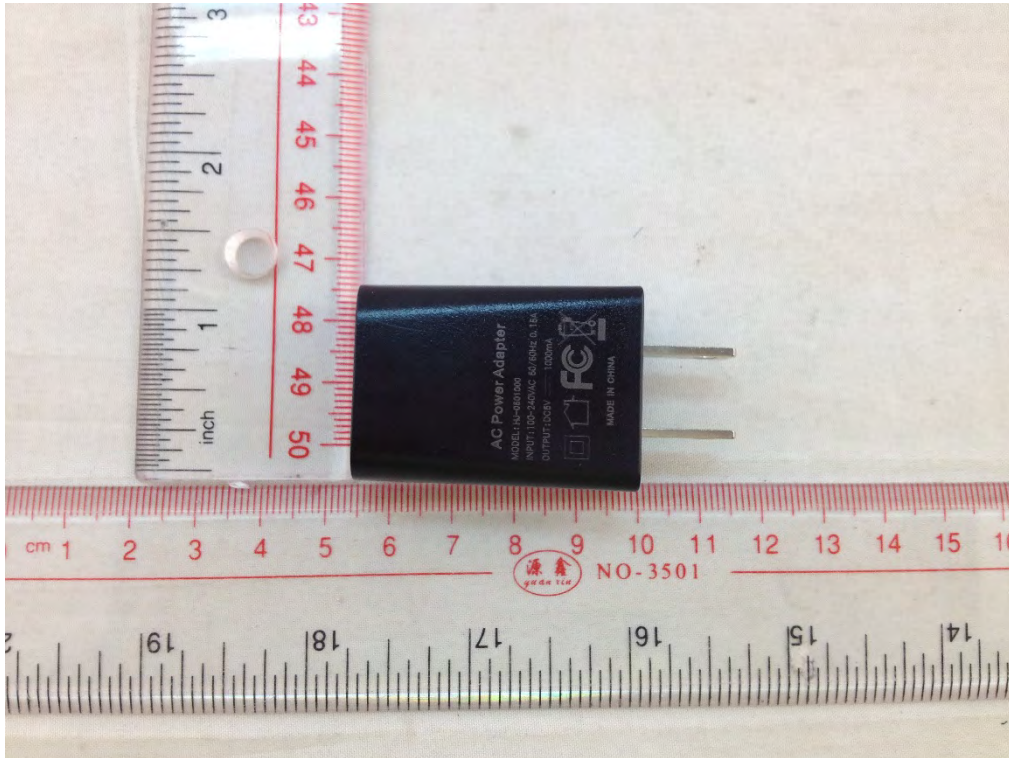
THE DOWN OF EUT



THE EARPHONE



THE USB CABLE



THE CHARGER

C.2 Inside of the EUT



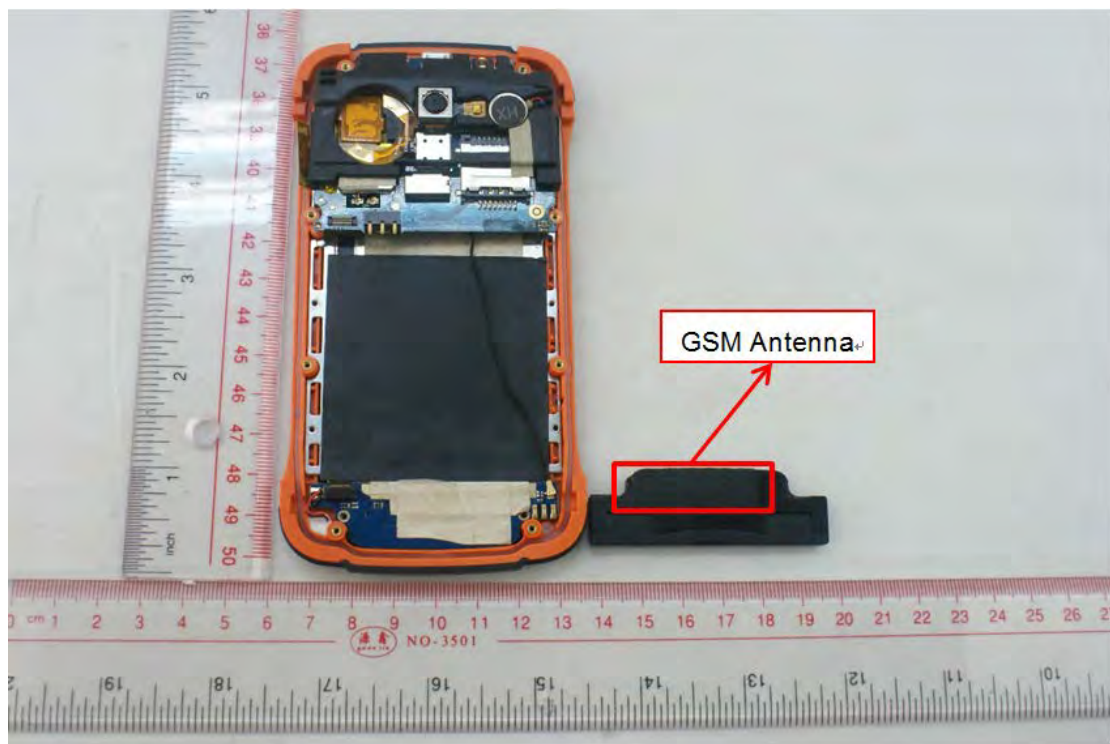
OPEN THE EUT PHOTO 1



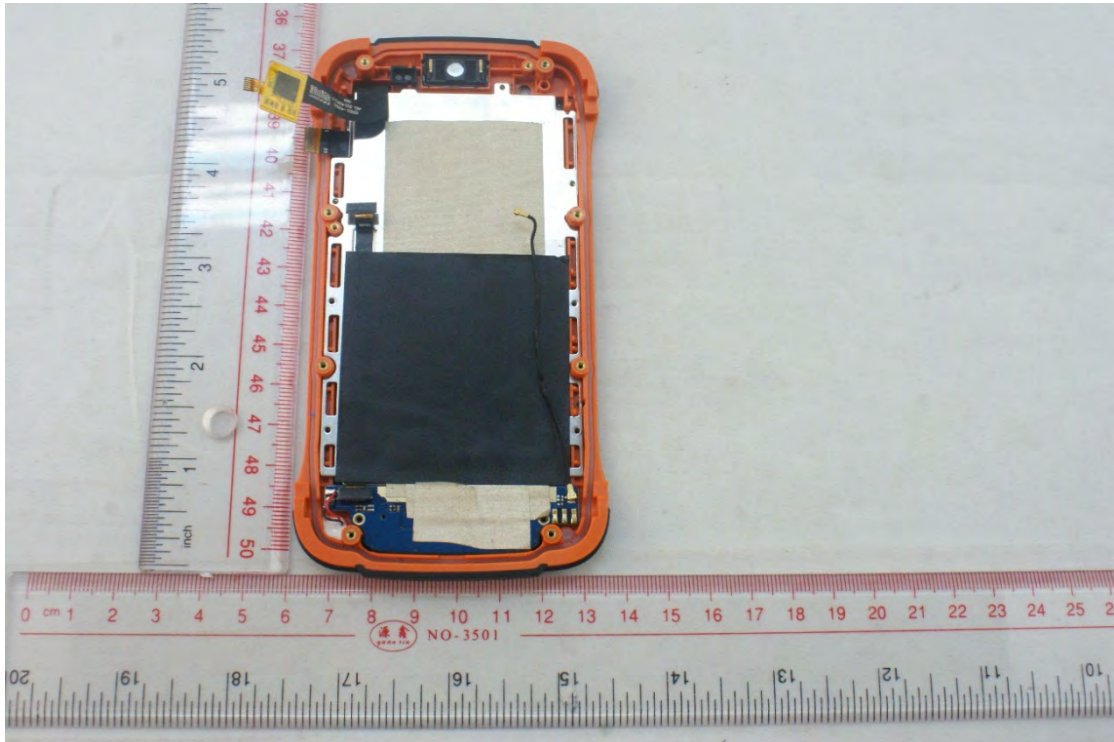
OPEN THE EUT PHOTO 2



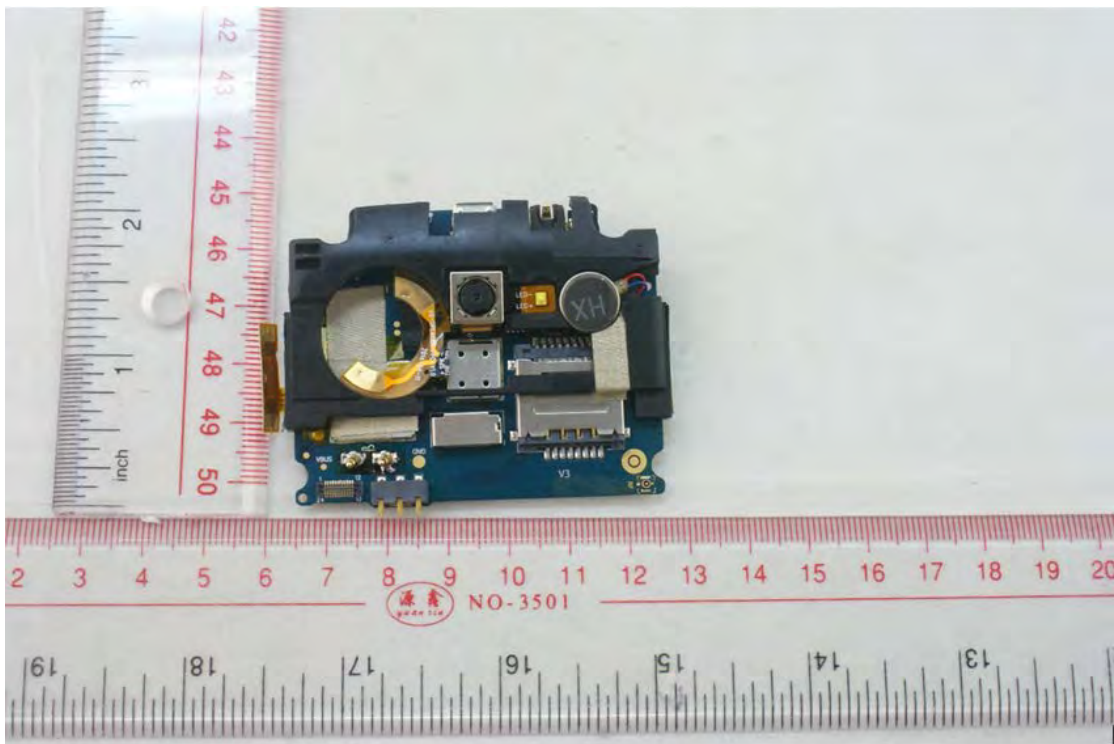
OPEN THE EUT PHOTO 3



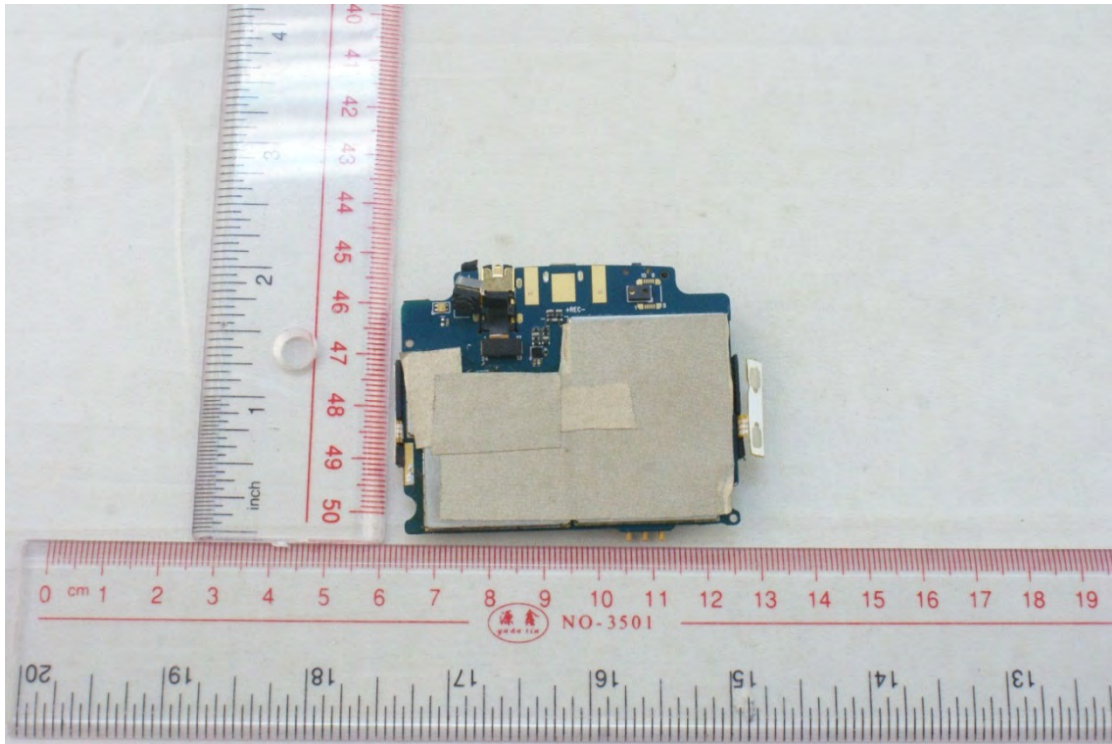
OPEN THE EUT PHOTO 4



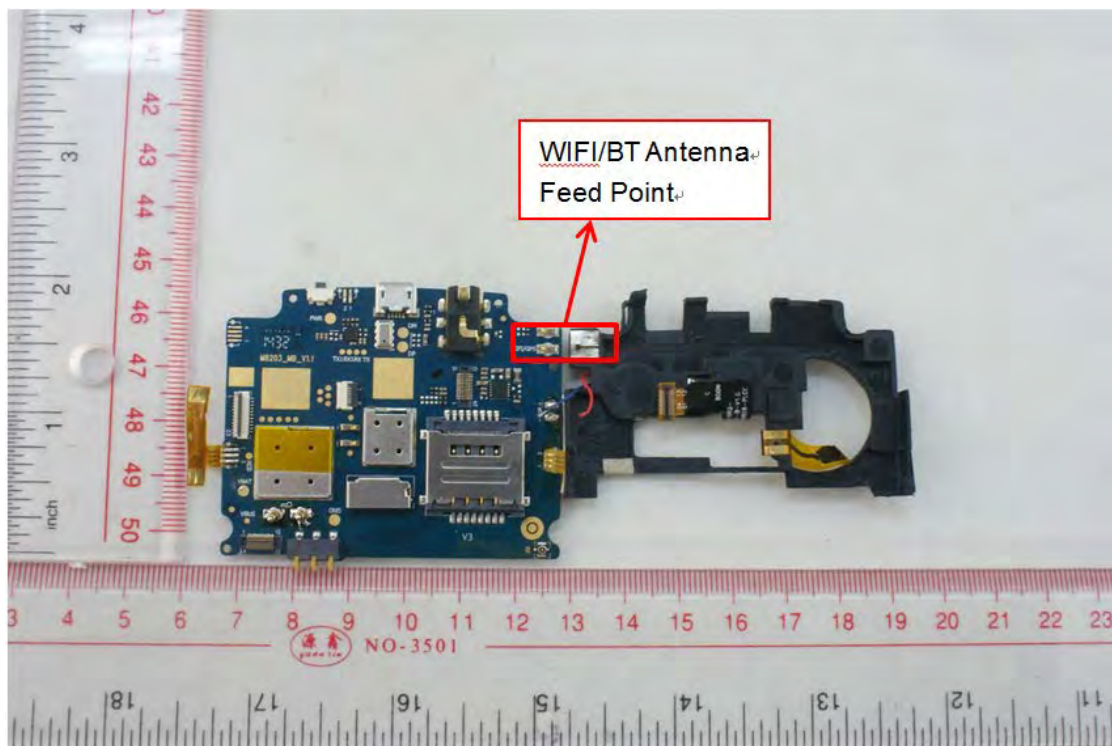
OPEN THE EUT PHOTO 5



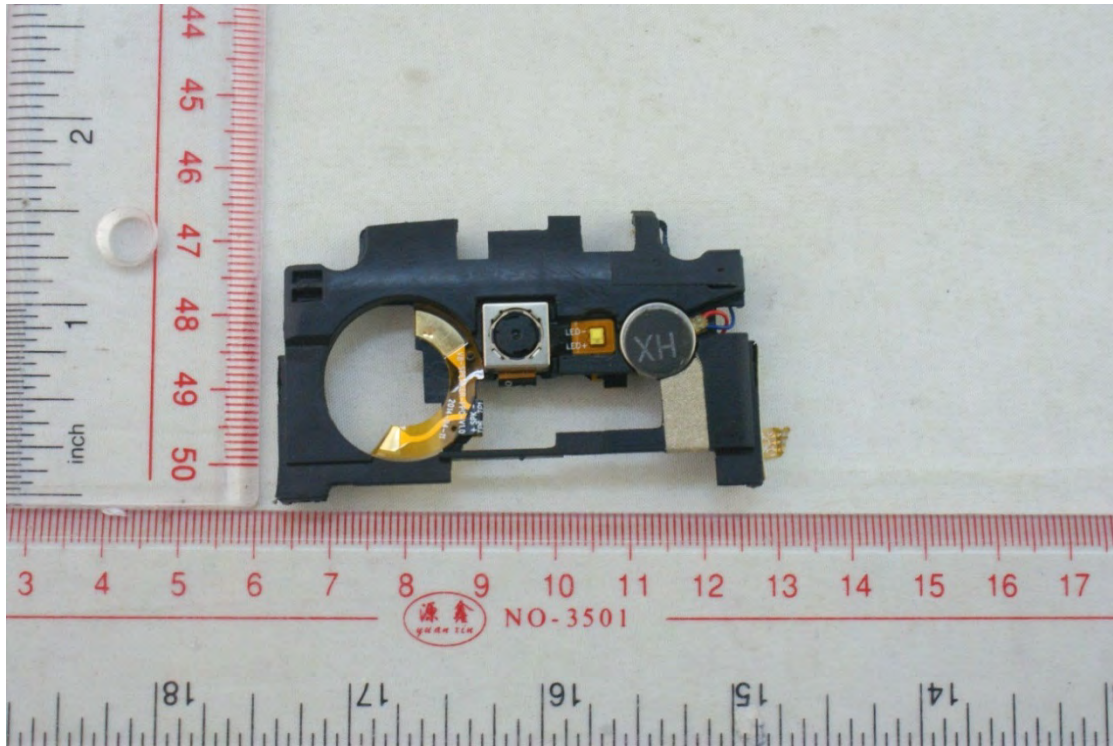
EUT INTERNAL BOARD 1



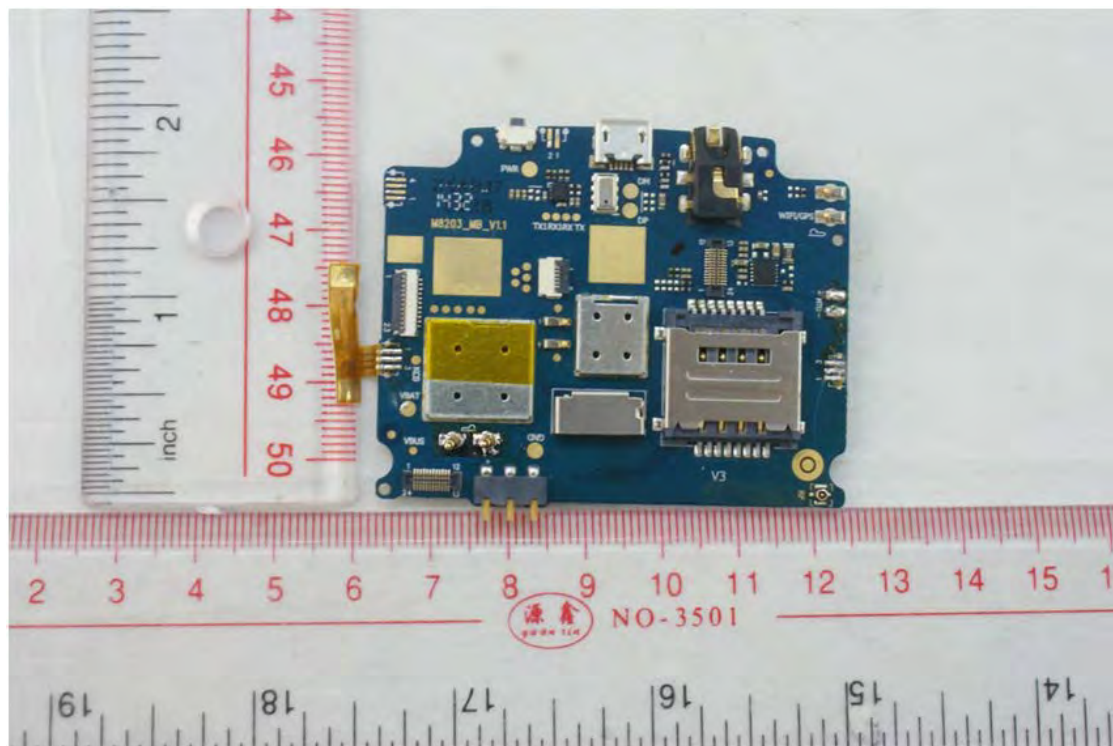
EUT INTERNAL BOARD 2



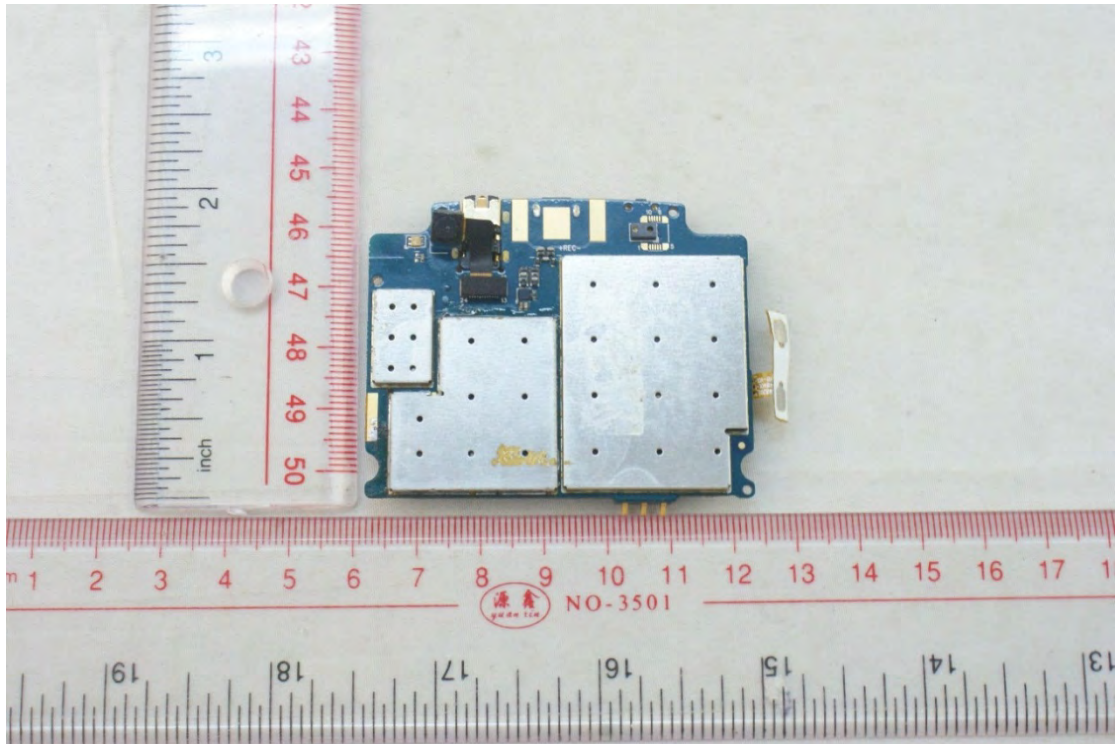
EUT INTERNAL BOARD 3



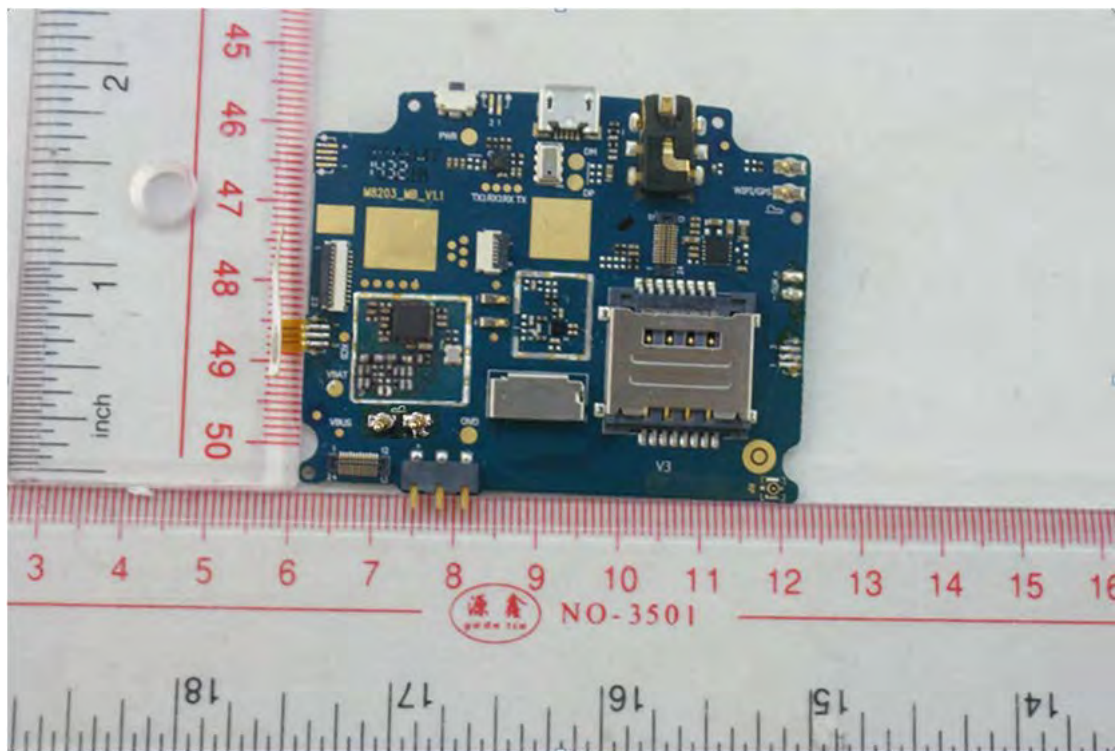
EUT INTERNAL BOARD 4



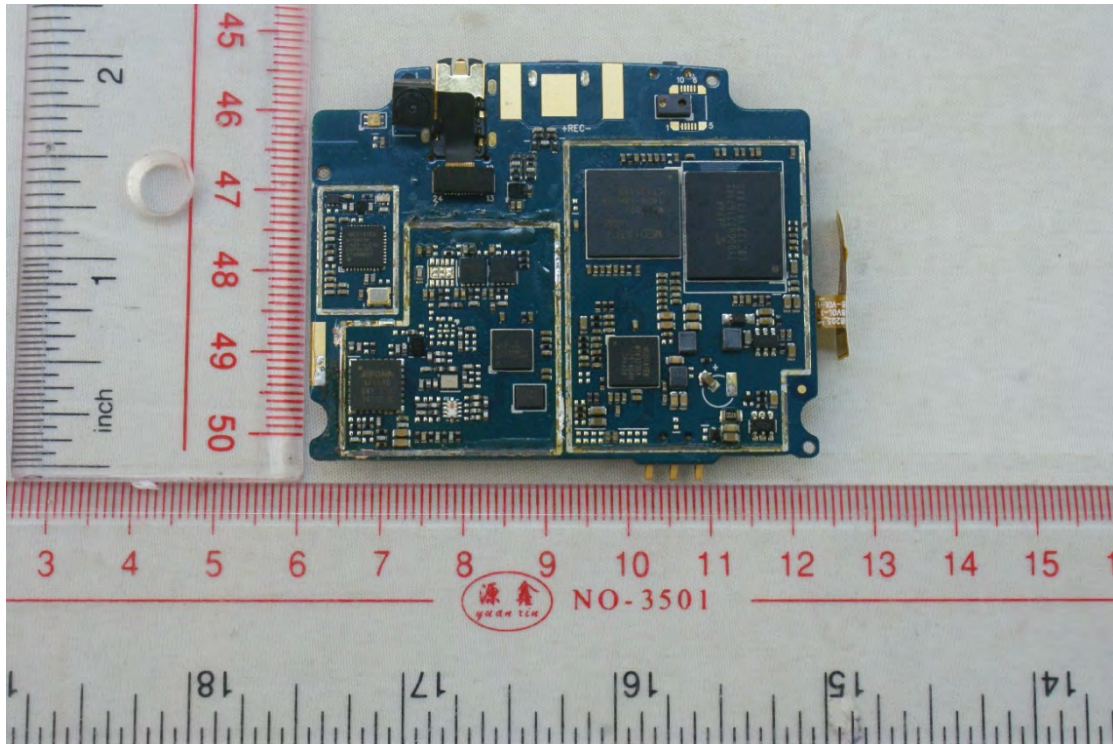
EUT INTERNAL BOARD 5



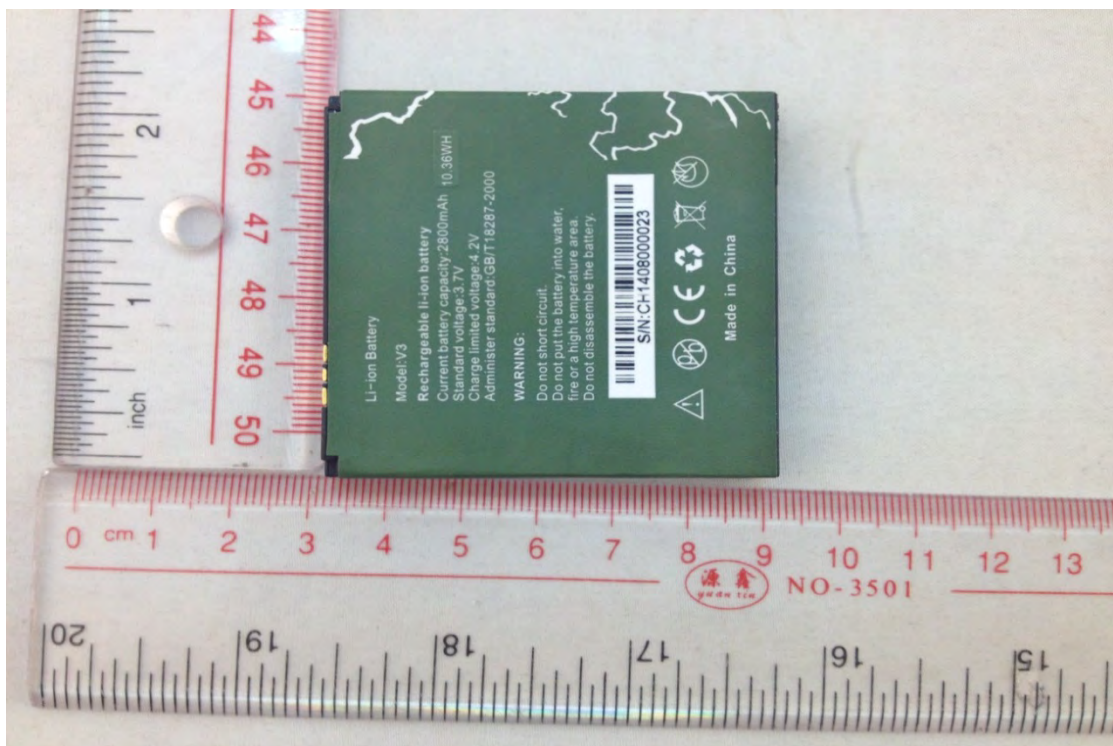
EUT INTERNAL BOARD 6



EUT INTERNAL BOARD 7



EUT INTERNAL BOARD8



BATTERY

--END OF REPORT--