

FCC Part 15B

Measurement and Test Report

For

Shenzhen Huadoo Bright Group Limited

Room 13E, jinsong Buiding, Tai ran 4th Rood, chegong miao,

Futian Distrcet, Shenzhen Guangdong

FCC ID: 2ACXS-H2

Test Rule(s): FCC Part 15 Subpart B

Product Description: mobile phone

Tested Model: Huadoo H2

Report No.: STR14128093I-5

Tested Date: 2014-12-09 to 2014-12-23

Issued Date: 2014-12-24

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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM.Test Technology Co., Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Shenzhen Huadoo Bright Group Limited
Address of applicant: Room 13E, jinsong Building, Tai ran 4th Rood, chegong miao, Futian District, Shenzhen Guangdong

Manufacturer: Huadoo Bright Group Limited BaoAn Branch Office
Address of manufacturer: 10th floor, Fenghuang science & technology building, No.6, Lingbei 4th road, 1st industry park, Fenghuang, Fuyong town, Bao'an District, Shenzhen, China

General Description of EUT	
Product Name:	mobile phone
Trade Name:	Huadoo
Model No.:	Huadoo H2
Adding Model:	/
<i>The EUT is GSM850/900/DCS1800/PCS1900, WCDMA Band I/V, Mobile Phone. the Mobile Phone is intended for speech and Multimedia Message Service (MMS) transmission. It is equipped with GPRS class 12 for GSM850 and GSM1900 and Bluetooth, Wi-Fi, GPS and camera functions. For more information see the following datasheet</i>	
<i>Note: The test data is gathered from a production sample provided by the manufacturer.</i>	

Technical Characteristics of EUT	
Rated Voltage:	AC120V60HZ /Adapter DC5V
Rated Current:	1000mA
Rated Power:	/
Power Adapter Model:	HJ-0501000
Lowest Internal Frequency:	26MHz
Highest Internal Frequency:	1.0GHz
Classification of ITE:	Class B

1.2 Test Standards

The following report is prepared on behalf of the Shenzhen Huadoo Bright Group Limited in accordance with Part 2, Subpart J, and Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart B, and section 15.205, 15.107, and 15.109 rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National 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.

1.4 Test Facility

- **FCC – Registration No.: 934118**

Shenzhen SEM.Test Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 934118.

- **Industry Canada (IC) Registration No.: 11464A**

The 3m Semi-anechoic chamber of Shenzhen SEM.Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

- **CNAS Registration No.: L4062**

Shenzhen SEM.Test Technology Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C (518101)

1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List:

Test Mode	Description	Remark
TM1	Charging & Playing	Connect to Adapter
TM2	Downloading	Connect to PC
TM3	Camera	/

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	0.75	Shielded	Without Core

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	Lenovo	E10	LR-63C8R

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
Earphone Cable	1.2	Unshielded	Without Core

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§ 15.107 (a)	Conducted Emissions	Compliant
§ 15.109 (a)	Radiated Emissions	Compliant

N/A: not applicable

3. Conducted Emissions

3.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 2.88 dB.

3.2 Test Equipment List and Details

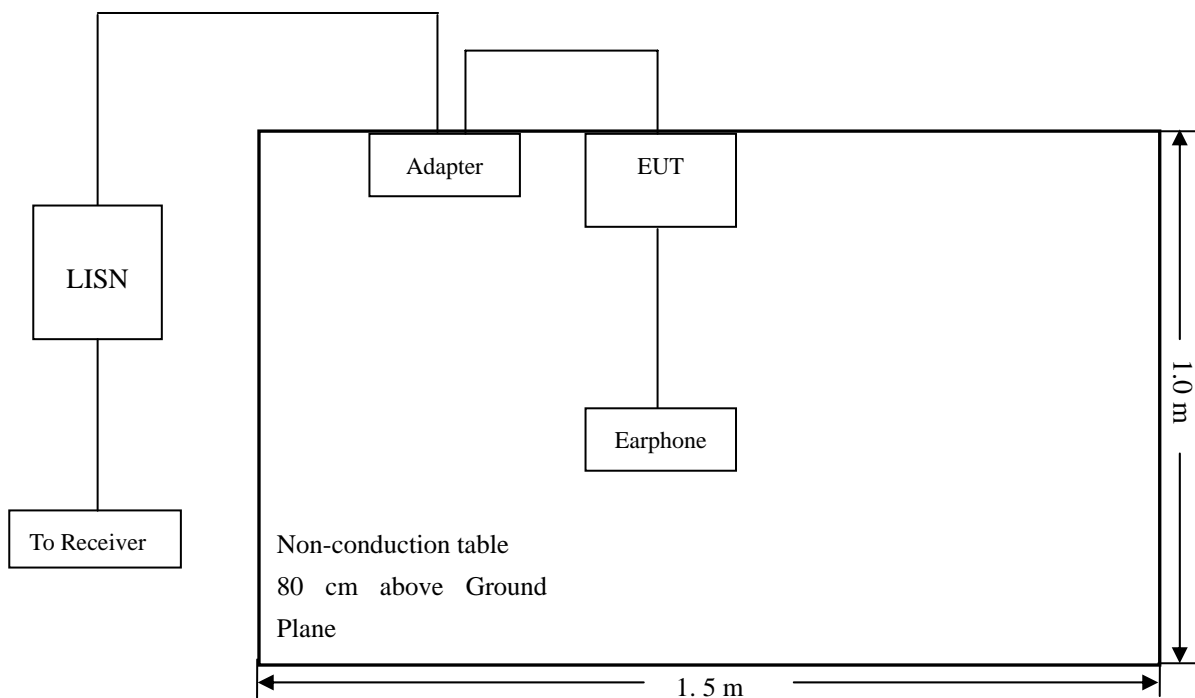
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2014-05-28	2015-05-27
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2014-05-28	2015-05-27
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2014-05-28	2015-05-27

3.3 Test Procedure

Test is conducting under the description of ANSI C63.4-2003, American National 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.

Note: Base on the calibrated result, for the impedance characteristic and insertion loss, the effect shall be ignored from the placed multiple outlet power strip between the device and LISN.

3.4 Basic Test Setup Block Diagram



3.5 Environmental Conditions

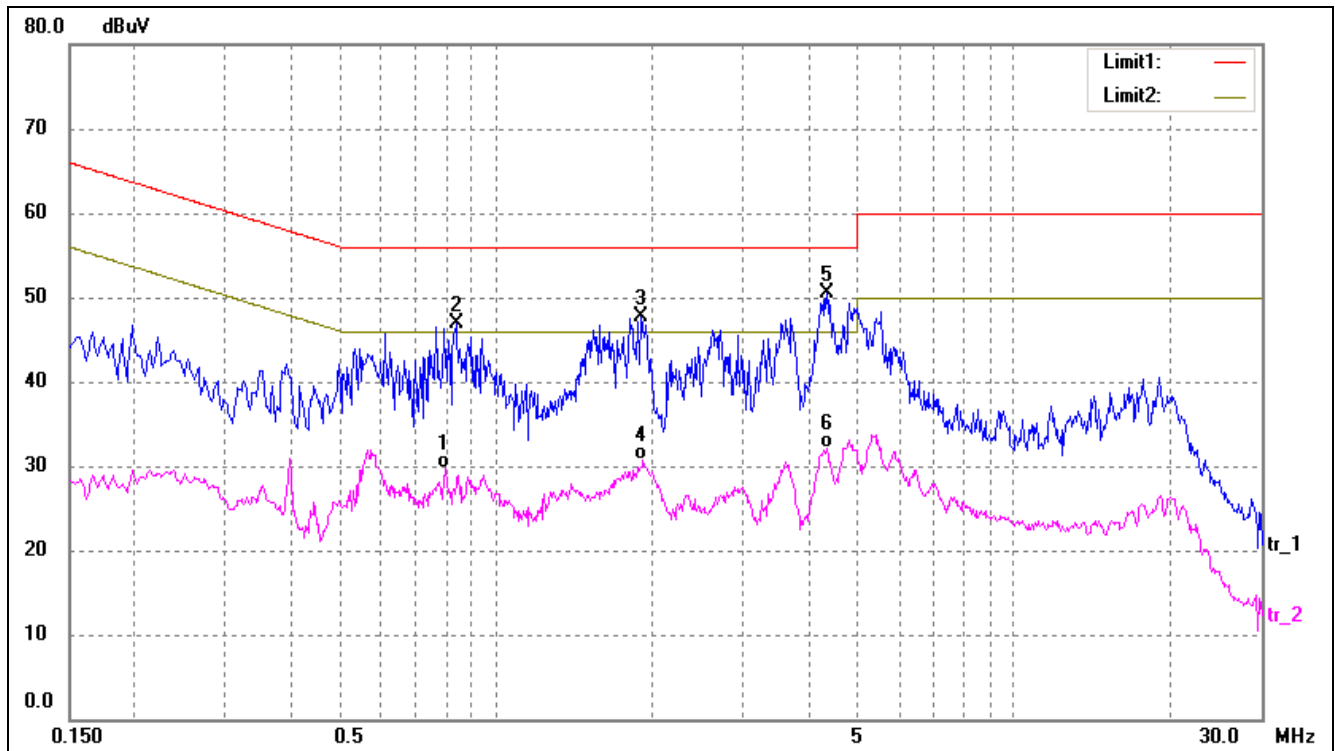
Temperature:	23 °C
Relative Humidity:	52%
ATM Pressure:	1011 mbar

3.6 Summary of Test Results/Plots

According to the data in section 3.7, the EUT complied with the FCC Part 15.107(a) Conducted margin for a Class B device, with the *worst* margin reading of:

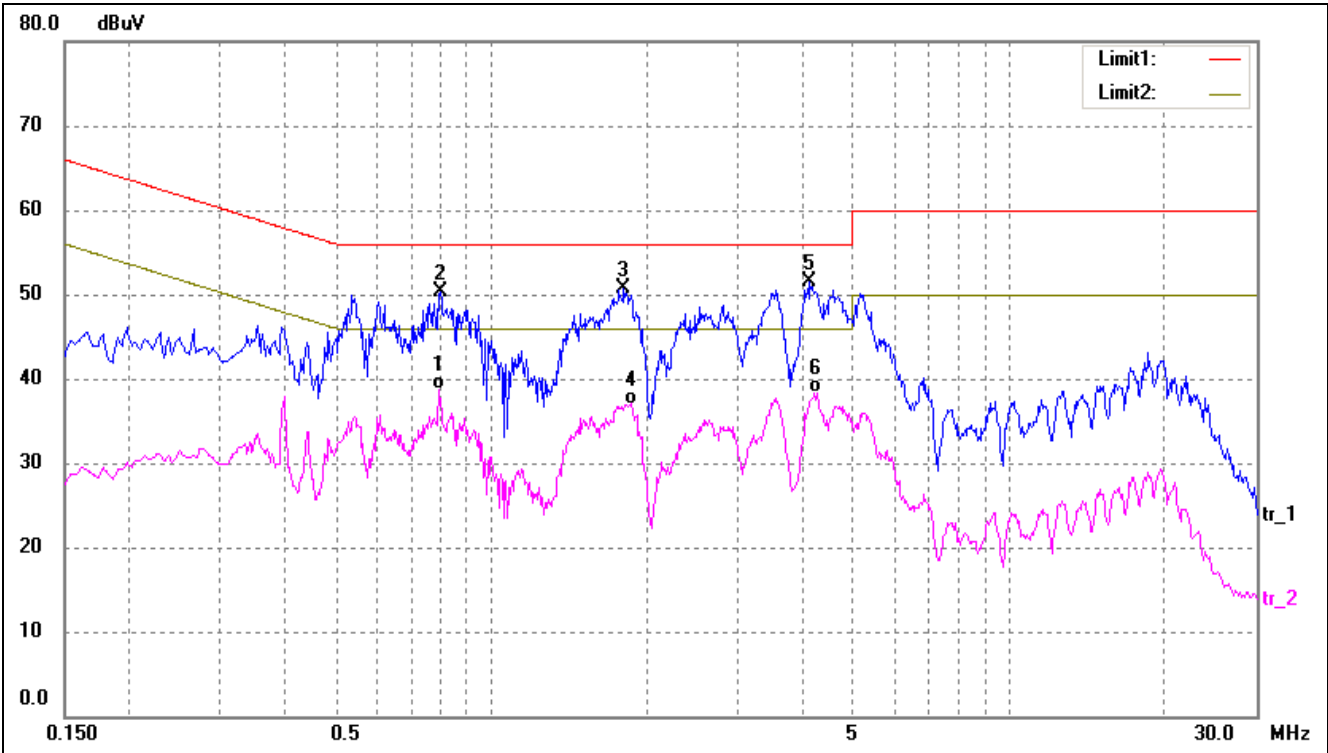
-4.48dB at 4.1260MHz in the Neutral, Peak detector, 0.15-30MHz

3.7 Conducted Emissions Test Data

Plot of Conducted Emissions Test DataEUT: *Mobile Phone*Tested Model: *Huadoo H2*Operating Condition: *TM1*Comment: *AC 120V/60Hz Adaptor: DC5V/0.5A*Test Specification: *Neutral*

No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.7980	19.84	9.80	29.64	46.00	-16.36	AVG
2	0.8380	36.97	9.84	46.81	56.00	-9.19	peak
3	1.9020	37.66	10.00	47.66	56.00	-8.34	peak
4	1.9220	20.71	10.00	30.71	46.00	-15.29	AVG
5	4.3420	40.44	10.00	50.44	56.00	-5.56	peak
6	4.3420	22.03	10.00	32.03	46.00	-13.97	AVG

Test Specification: Line



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.7940	28.90	9.79	38.69	46.00	-7.31	AVG
2	0.7980	40.45	9.80	50.25	56.00	-5.75	peak
3	1.8020	40.61	10.00	50.61	56.00	-5.39	peak
4	1.8660	27.00	10.00	37.00	46.00	-9.00	AVG
5	4.1260	41.52	10.00	51.52	56.00	-4.48	peak
6	4.2500	28.36	10.00	38.36	46.00	-7.64	AVG

4. Radiated Emissions

4.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 5.10 dB.

4.2 Test Equipment List and Details

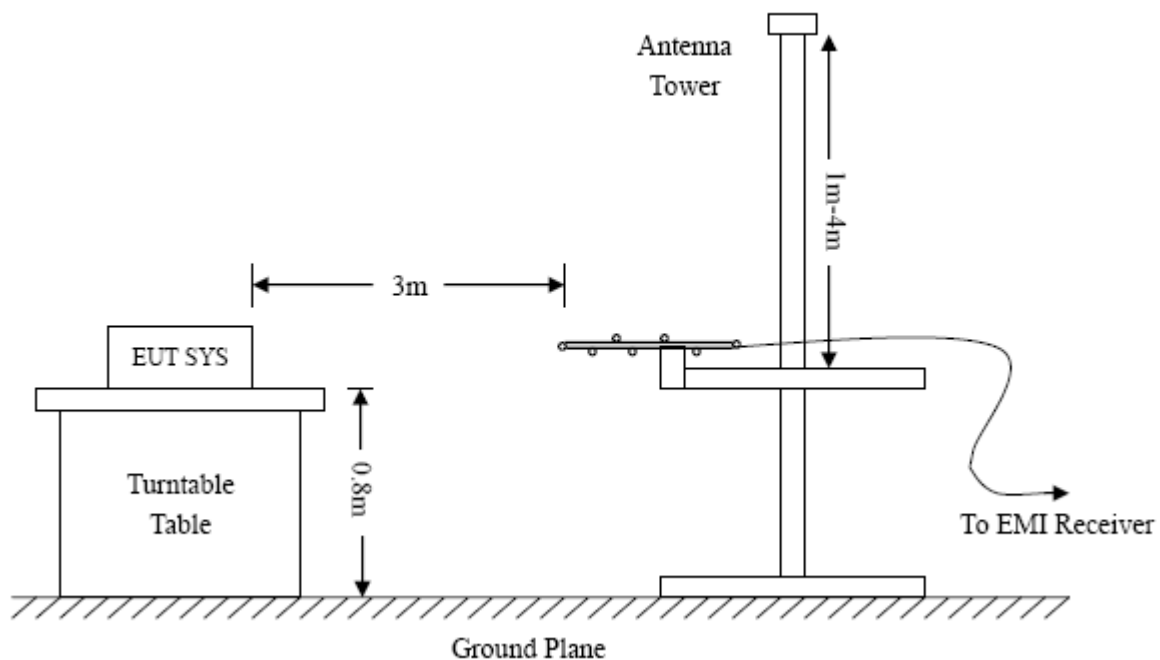
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2014-05-28	2015-05-27
EMI Test Receiver	R&S	ESVB	825471/005	2014-05-28	2015-05-27
Pre-amplifier	Agilent	8447F	3113A06717	2014-05-28	2015-05-27
Pre-amplifier	Compliance Direction	PAP-0118	24002	2014-05-28	2015-05-27
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2014-05-24	2015-05-23
Horn Antenna	ETS	3117	00086197	2014-05-24	2015-05-23
Loop Antenna	SCHWARZECK	HFRA 5165	9365	2014-05-28	2015-05-27

4.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.109 Limit.

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.



4.4 Test Receiver Setup

Frequency :9kHz-30MHz

RBW=10KHz,

VBW =30KHz

Sweep time= Auto

Trace = max hold

Detector function = peak

Frequency :30MHz-1GHz

RBW=120KHz,

VBW=300KHz

Sweep time= Auto

Trace = max hold

Detector function = peak, QP

Frequency :Above 1GHz

RBW=1MHz,

VBW=3MHz(Peak), 10Hz(AV)

Sweep time= Auto

Trace = max hold

Detector function = peak, AV

4.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} - \text{Corr. Factor}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dB μ V means the emission is 6dB μ V below the maximum limit for a Class B device. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15.109(a) Limit}$$

4.6 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	55 %
ATM Pressure:	1011 mbar

4.7 Summary of Test Results/Plots

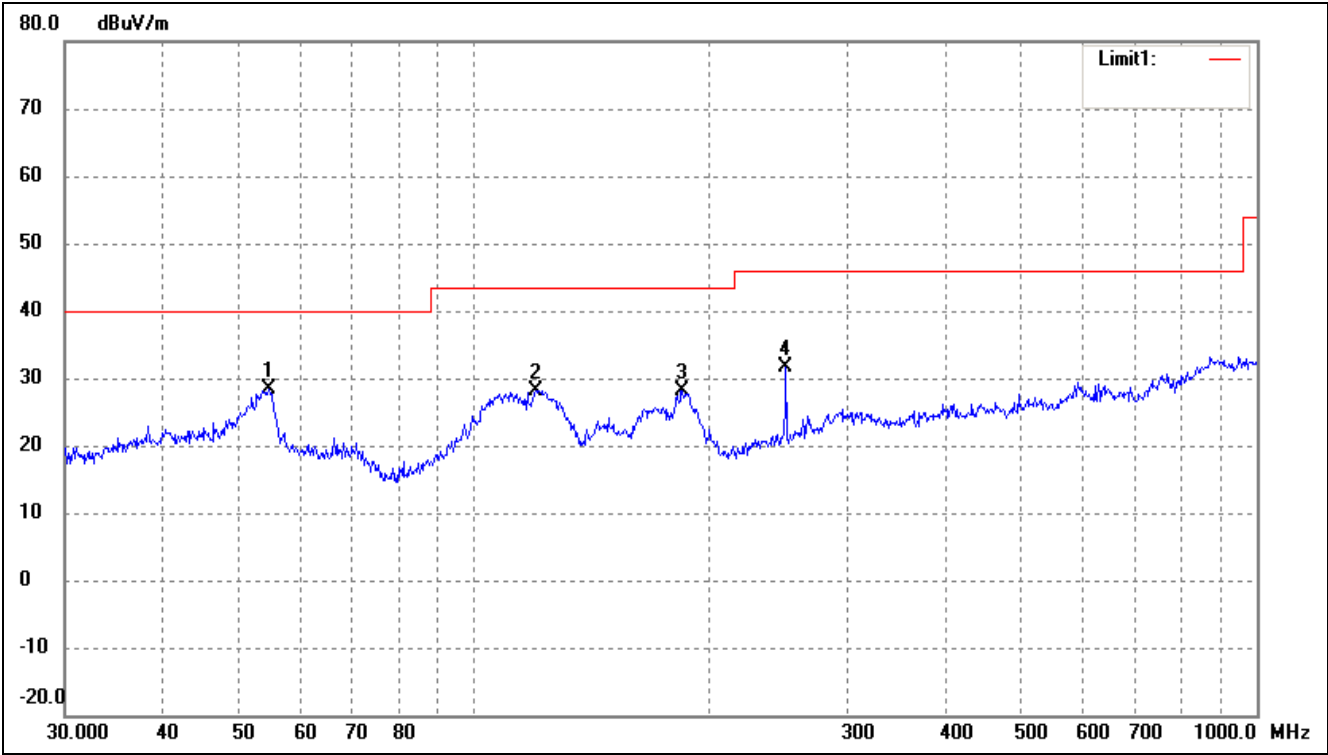
According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

-1.93 dB at 237.4760 MHz in the Horizontal polarization, TM2 mode, 9 kHz to 6 GHz, 3Meters

Plot of Radiated Emissions Test Data

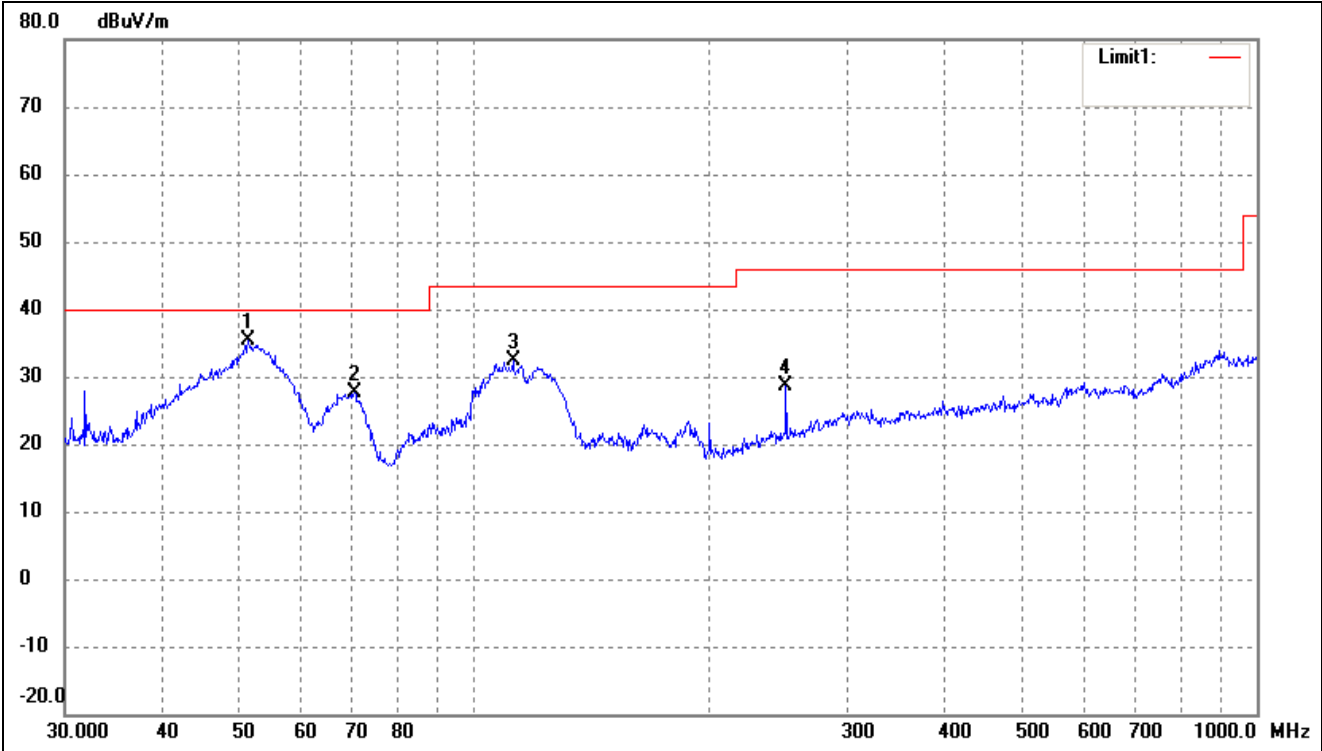
EUT: Mobile Phone
Tested Model: Huadoo H2
Operating Condition: TM1
Comment: AC 120V/60Hz Adaptor: DC5V/1.0A

Test Specification: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	54.6429	22.42	5.85	28.27	40.00	-11.73	265	100	peak
2	119.8556	24.20	4.04	28.24	43.50	-15.26	125	100	peak
3	184.4898	25.21	2.96	28.17	43.50	-15.33	236	100	peak
4	250.3012	24.86	6.71	31.57	46.00	-14.43	97	100	peak

Test Specification: Vertical

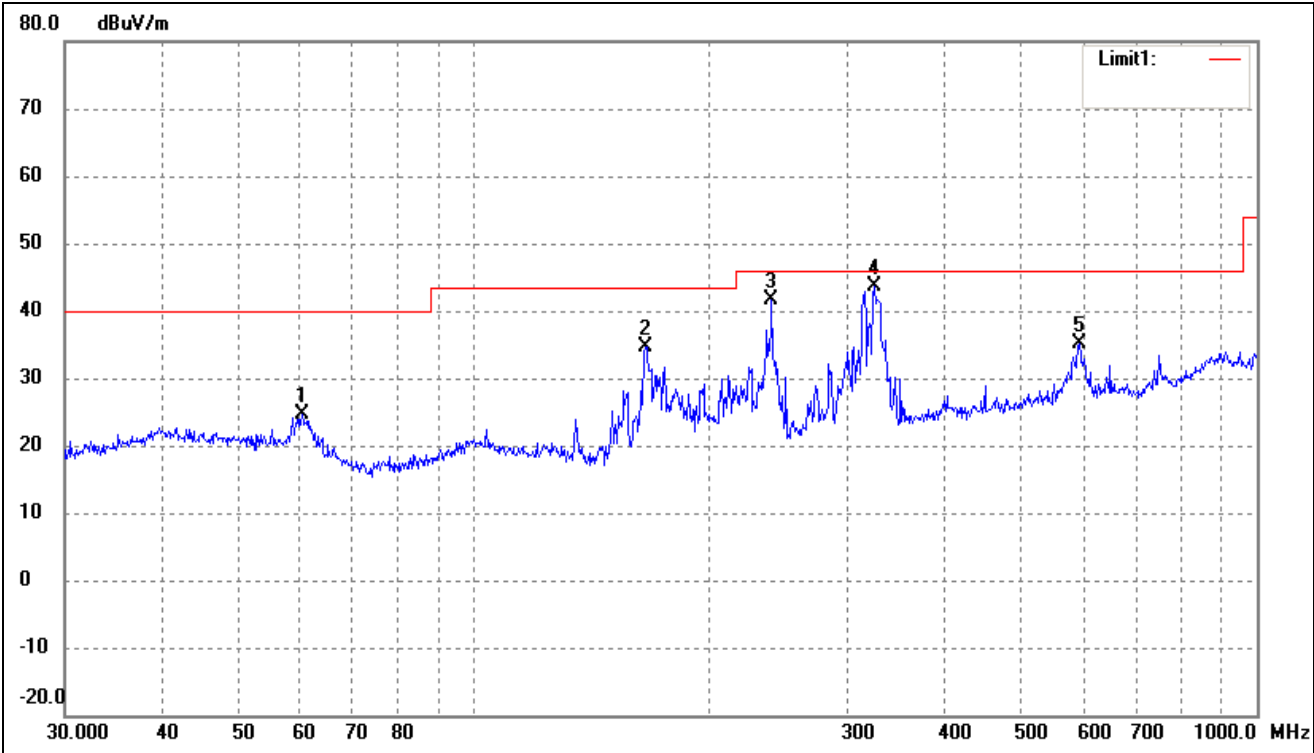


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	51.4807	29.14	6.14	35.28	40.00	-4.72	123	100	peak
2	70.3365	25.50	2.15	27.65	40.00	-12.35	96	100	peak
3	112.1305	27.53	4.85	32.38	43.50	-11.12	156	100	peak
4	250.3012	21.97	6.71	28.68	46.00	-17.32	236	100	peak

Plot of Radiated Emissions Test Data

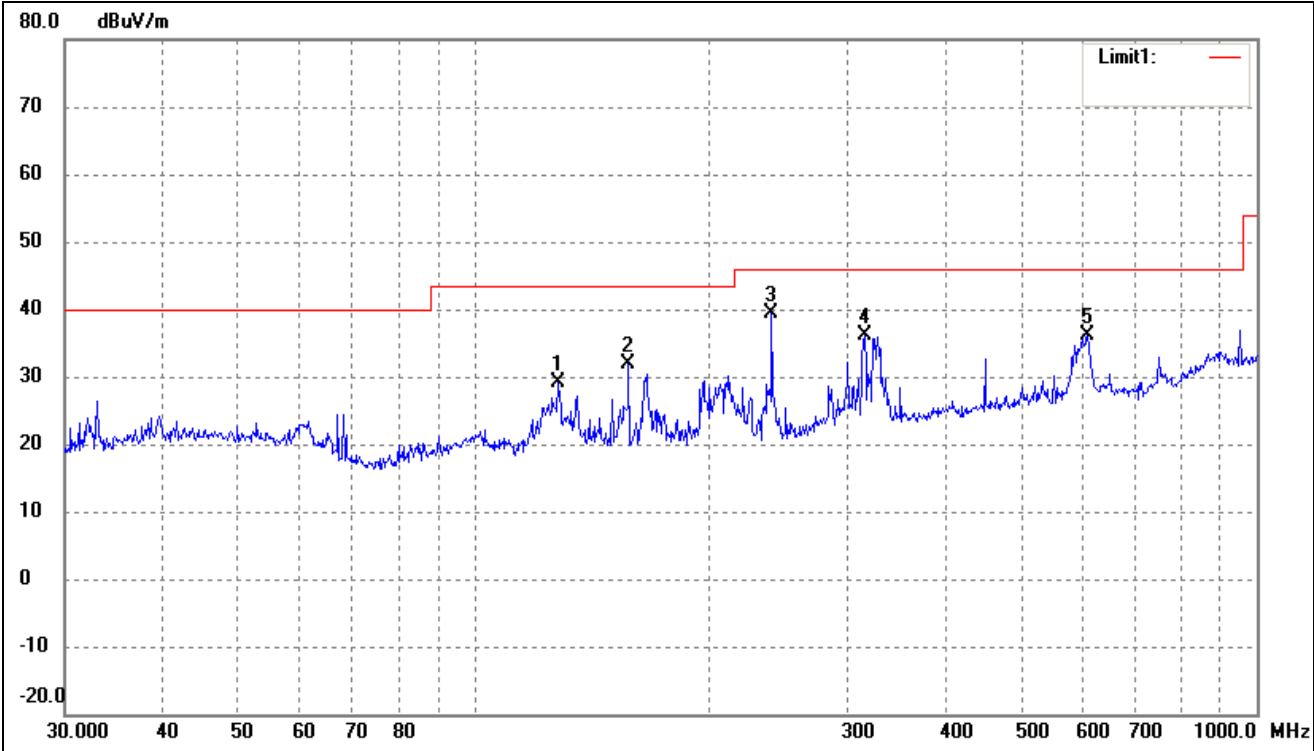
EUT: Mobile Phone
Tested Model: Huadoo H2
Operating Condition: TM2
Comment: AC 120V/60Hz

Test Specification: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	60.2801	19.36	5.29	24.65	40.00	-15.35	96	100	peak
2	165.4866	32.02	2.65	34.67	43.50	-8.83	265	100	peak
3	239.9874	35.33	6.33	41.66	46.00	-4.34	120	100	peak
4	324.4561	34.41	9.16	43.57	46.00	-2.43	136	100	peak
5	593.0497	22.19	13.06	35.25	46.00	-10.75	96	200	peak

Test Specification: Vertical

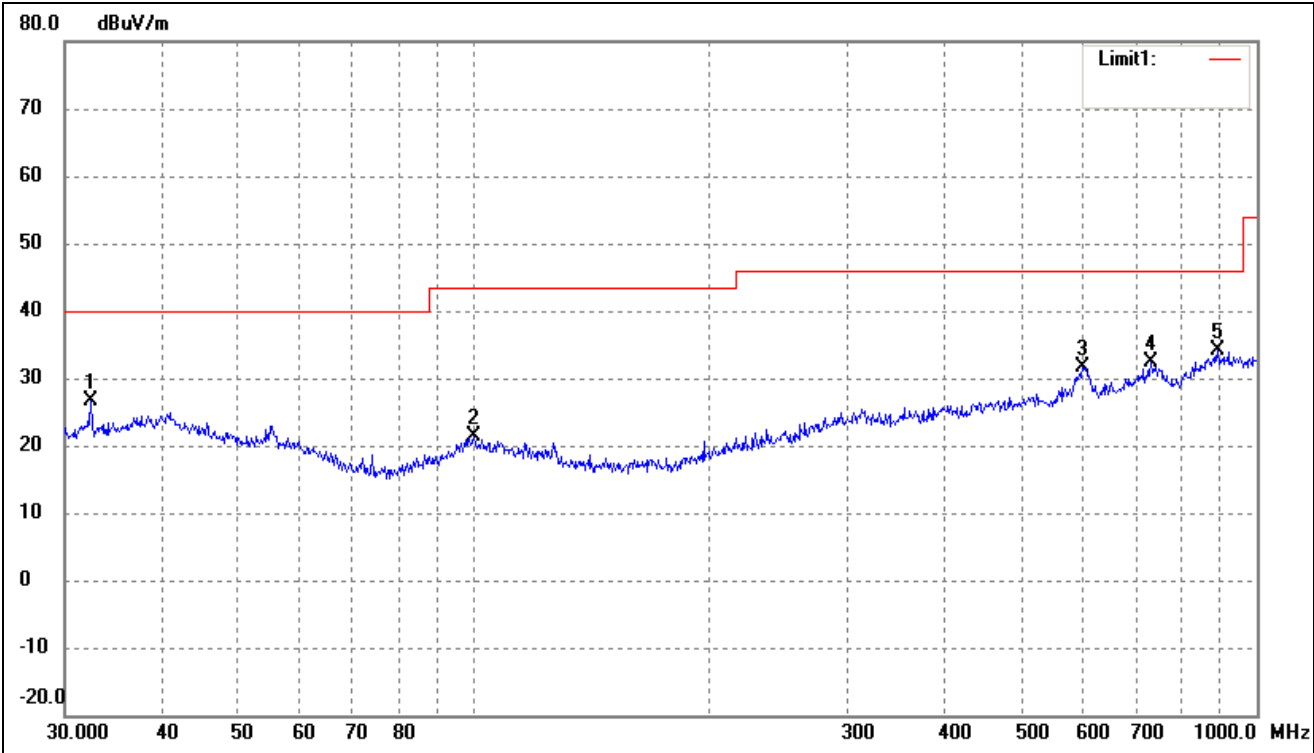


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	128.1130	25.64	3.37	29.01	43.50	-14.49	23	100	peak
2	157.5588	29.39	2.59	31.98	43.50	-11.52	65	100	peak
3	239.9874	33.13	6.33	39.46	46.00	-6.54	195	100	peak
4	315.4808	26.74	9.27	36.01	46.00	-9.99	123	100	peak
4	607.7867	23.31	12.77	36.08	46.00	-9.92	201	100	peak

Plot of Radiated Emissions Test Data

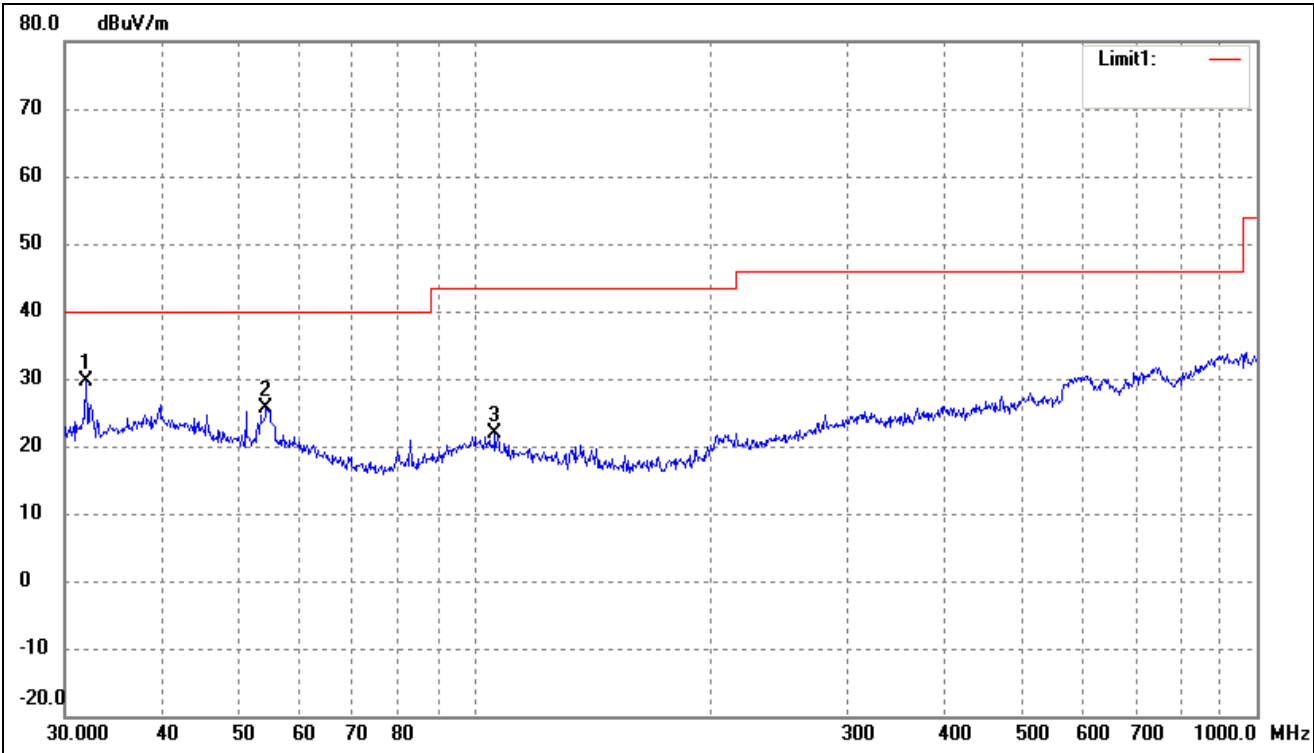
EUT: Mobile Phone
Tested Model: Huadoo H2
Operating Condition: TM3
Comment: AC 120V/60Hz Adaptor: DC5V/1A

Test Specification: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	32.4059	21.38	5.24	26.62	40.00	-13.38	123	100	peak
2	99.8777	15.26	6.10	21.36	43.50	-22.14	96	100	peak
3	599.3212	18.43	13.30	31.73	46.00	-14.27	25	100	peak
4	731.9203	19.19	13.08	32.27	46.00	-13.73	186	100	Peak
5	890.7278	17.40	16.84	34.24	46.00	-11.76	256	100	peak

Test Specification: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	31.9546	21.59	7.93	29.52	40.00	-10.48	98	100	peak
2	54.2610	19.76	5.89	25.65	40.00	-14.35	129	100	peak
3	106.3850	16.47	5.46	21.93	43.50	-21.57	232	100	peak

Note: Testing is carried out with frequency rang 9kHz to the 6GHz, which above 1GHz is close to the noise base even antenna close up to 1meter distance according the measurement of ANSI C63.4.
The measurements greater than 20dB below the limit from 9kHz to 30MHz.

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