

# CENTRE OF TESTING SERVICE INTERNATIONAL

**OPERATE ACCORDING TO ISO/IEC 17025** 

# FCC ID TEST REPORT

TEST REPORT NUMBER: CGZ3140808-00871-EF



CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, China

# **CENTRE OF TESTING SERVICE**





TEST REPORT For FCC ID					
47 CFR PART 15 OCT, 2013					
Report Reference No	CGZ3140808-00871-EF				
Date of issue	19 September 2014				
Testing Laboratory Name	CENTRE OF TESTING SERVICE CO., LTD.				
Address	A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, China				
Testing location/ procedure	Full application of Harmonised standards ■				
	Partial application of Harmonised standards $\square$				
	Other standard testing method $\square$				
Applicant's name	Rampage Products, Inc.				
Address	22420 Temescal Canyon Rd, Unit C, Corona CA 92883, USA				
Test specification					
Standard	47 CFR PART 15 OCT, 2013				
Test Report Form No	CTSEMC-1.0				
TRF Originator	CENTRE OF TESTING SERVICE CO., LTD.				
Master TRF	Dated 2009-01				
CENTRE OF TESTING SERVICE C	O., LTD. All rights reserved.				
CENTRE OF TESTING SERVICE C material. CENTRE OF TESTING SE	in whole or in part for non-commercial purposes as long as the O., LTD. is acknowledged as copyright owner and source of the RVICE CO., LTD takes no responsibility for and will not assume liability er's interpretation of the reproduced material due to its placement and				
Test item description	: Rampage wifi backup camera				
Trade Mark					
Manufacturer	Rampage Products, Inc.				
Model/Type reference	7710				
Ratings	Battery 3.7V;				
	DC 12V for Charger				
Operating Frequency	802.11b/g/n(20M):2412.0 MHz~2462.0 MHz				
	802.11n(40MHz):2422.0 MHz ~2452.0 MHz				
Result	Positive				

Compiled by:

Supervised by:

Approved by:

Kate zhang / Fileadministrators

Duke yang / Technique principal

Vincent yao / Manager

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

#### CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn





# FCCID-TEST REPORT

 Test Report No. :
 CGZ3140808-00871-EF
 19 September 2014 Date of issue

Type / Model..... 7710 EUT..... Rampage wifi backup camera Rampage Products, Inc. Applicant..... 22420 Temescal Canyon Rd, Unit C, Corona CA 92883, USA Address..... Telephone..... +1-951-277-4949 Fax..... +1-951-277-2295 Contact..... Scott Cover Manufacturer..... Rampage Products, Inc. 22420 Temescal Canyon Rd, Unit C, Corona CA 92883, USA Address..... Telephone..... +1-951-277-4949 Fax..... +1-951-277-2295 Contact..... Scott Cover Factory..... Address..... Telephone..... Fax..... Contact.....

Test Result according to the standards on page 1: PASSED

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn



# **TABLE OF CONTENTS**

<u>Description</u>	Page
1.0 TEST STANDARDS	5
	_
2.0 SUMMARY	5
2.1 GENERAL REMARKS	5
2.2 FINAL ASSESSMENT	5
3.0 EQUIPMENT UNDER TEST	5
3.1 Power supply system utilised	5
3.2 Short description of the Equipment under Test (EUT)	5
3.3 EUT OPERATION MODE	
3.4 EUT CONFIGURATION	6
4.0 TEST ENVIRONMENT	7
4.1 Address of the test laboratory	7
4.2 TEST FACILITY	
4.3 Environmental conditions	
4.4 DEFINITIONS OF SYMBOLS USED IN THIS TEST REPORT	
4.5 STATEMENT OF THE MEASUREMENT UNCERTAINTY	
4.6 MEASUREMENT UNCERTAINTY	8
5.0 SUMMARY OF STANDARDS AND RESULTS	8
5.1.DESCRIPTION OF STANDARDS AND RESULTS	8
6.0 POWER LINE CONDUCTED EMISSION TEST	9
6.1.Test Equipment	9
6.2. BLOCK DIAGRAM OF TEST SETUP	
6.3. Power Line Conducted Emission Test Limits	
6.4.Test Procedure	
6.5. Power Line Conducted Emission Test Results	9
7.0 6DB BANDWIDTH MEASUREMENT	10
7.1 LIMITS	10
7.2 MEASUREMENT EQUIPMENT USED	
7.3 TEST CONFIGURATION	
7.4 TEST PROCEDURE	
7.5 TEST RESULTS	10
8.0 PEAK POWER	18
8.1 LIMIT	
8.2 MEASUREMENT EQUIPMENT USED	
8.3 TEST CONDIGURATION	18
Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.	

\_\_\_\_\_

#### CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

#### FCC ID:2AC82-7710

**CENTRE OF TESTING SERVICE** 



# CT5

8.4 TEST PROCEDURE	
8.5 TEST RESULTS	
9.0 PEAK POWER SPECTRAL DENSITY	26
9.1 LIMIT	26
9.2 MEASUREMENT EQUIPMENT USED	26
9.3 TEST CONFIGURATION	
9.4 TEST PROCEDURE	
9.5 TEST RESULTS	-
10.0 BAND EDGES MEASUREMENT	34
10.1 LIMIT	
10.2 MEASUREMENT EQUIPMENT USED	3/
10.3 TEST CONFIGURATION	
10.4 TEST PROCEDURE	
10.5 TEST RESULTS	
11.0 SPURIOUS EMISSIONS	43
11.1 LIMIT	43
11.2 Test Equipment	
11.3 TEST CONFIGURATION	<b>4</b> 4
11.4 TEST PROCEDURE	
11.5 TEST RESULTS	45
12.0 ANTENNA REQUIREMENTS	59
12.1 STANDARD APPLICABLE	
12.2 ANTENNA CONSTRUCTION AND DIRECTIONAL GAIN	59
42 A DEVIATION TO TEST SPECIFICATIONS	50

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

#### **CENTRE OF TESTING SERVICE**





# 1.0 TEST STANDARDS

The tests were performed according to following standards:

- 47 CFR PART 15 OCT, 2013
- ANSI C63.4-2009

#### 2.0 SUMMARY

#### 2.1 GENERAL REMARKS

Date of receipt of test sample	20 August 2014
Testing commenced on	16 ~18 September 2014
Testing concluded on	19 September 2014

#### 2.2 FINAL ASSESSMENT

The FCC requirements pertaining to the technical standards and tested operation modes are

fulfilled.

□ - **not** fulfilled.

The equipment under test

fulfils the FCC requirements cited on page 1.

- does not fulfil the FCC requirements cited on page 1.

#### 3.0 EQUIPMENT UNDER TEST

## 3.1 Power supply system utilised

Power supply voltage : ■ Battery 3.7V

DC 12V for Charger

#### 3.2 Short description of the Equipment under Test (EUT)

Number of tested samples: 1

Serial number: Prototype

#### 3.3 EUT operation mode

The equipment under test was operated during the measurement under the following conditions:

□ - Standby

☐ TX- Y position

☐ TX- Zposition

TX- X position

802.11b/g/n(20M):TX-X Position Low (2412.0 MHz), TX-X Position Middle (2437.0 MHz),

TX-X Position High (2462.0 MHz)

802.11n(40M): TX-X Position Low (2422.0 MHz), TX-X Position Middle (2437.0 MHz),

TX-X Position High (2452.0 MHz)

Note:Operation mode TX -X position of EUT is the radiated test worst case. So only these test results be recorded in the test report.

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

#### CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn





# 3.4 EUT configuration

# 3.4.1. Description of configuration (EUT)

Description	:	Rampage wifi backup camera	
Model Number	:	7710	
Operation frequency :		802.11b/g/n(20M):2412.0 MHZ~2462.0 MHz	
		802.11n(40MHz):2422.0 MHz ~2452.0 MHz	
WiFi	:	802.11:b/g/n	
Modulation Technology	:	DBPSK, DQPSK, CCK, OFDM, 16-QAM, 64QAM	
		802.11b: 11, 5.5, 2, 1 Mbps	
Date Rate		802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps	
		802.11n: 150Mbps	

#### 3.4.2. Tested Supporting System Details

#### 3.4.2.1. Notebook

M/N	:	F83VF
S/N	:	AEN0AS64740305D
Manufacturer	:	ASUS
Power Cord	:	Unshielded, Detachabled, 1.5m , 3Pin
FCC ID	:	By DoC

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

**Report No.:** CGZ3140808-00871-EF Page 6 of 59

#### **CENTRE OF TESTING SERVICE**





#### 4.0 TEST ENVIRONMENT

#### 4.1 Address of the test laboratory

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

#### 4.2 Test facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L3394

CENTRE OF TESTING SERVICE CO., LTD has been assessed and proved to be in compliance with CNAS-CL01: 2006 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

#### IC-Registration No.: 8374A

The 3m Alternate Test Site of CENTRE OF TESTING SERVICE CO., LTD has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 8374A on May 22, 2014.

#### FCC-Registration No.: 971995

CENTRE OF TESTING SERVICE 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. Registration No.791995, July 13,2012.

#### 4.3 Environmental conditions

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

Temperature:	15~35 ° C
Humidity:	25~75 %
Atmospheric pressure:	86~106 kPa

#### 4.4 Definitions of symbols used in this test report

- - The black square indicates that the listed condition, standard or equipment is applicable for this report.
- ☐ The empty square indicates that the listed condition, standard or equipment is **not** applicable for this report.

#### 4.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the CTS quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

**Report No.:** CGZ3140808-00871-EF Page 7 of 59

#### **CENTRE OF TESTING SERVICE**





### 4.6 Measurement Uncertainty

Test Item	Frequency Range Uncertainty		Note
Conduction disturbance	150kHz~30MHz	±1.22dB	(1)
Power disturbance	30MHz~300MHz	±1.38dB	(1)
Radiation emission (3m)	30MHz~300MHz	±3.14dB	(1)
	300MHz~1000MHz	±3.18dB	(1)
	1GHz~26.5GHz	±3.54dB	(1)

<sup>(1).</sup> This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

# 5.0 Summary of standards and results

# 5.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION					
Description of Test Item Standard Results					
Conducted Emission Test	FCC Part 15 : 15.207 ANSI C63.4-2009	N/A			
6dB Bandwidth Measurement	FCC Part 15.247(a)(2) ANSI C63.4-2009	PASSED			
Peak Power	FCC Part 15.247(b)(3)(4) ANSI C63.4-2009	PASSED			
Peak Power Spectral Density	15.247(e) Power Density ANSI C63.4-2009	PASSED			
Pand added massurement	FCC Part 15.247(d)	PASSED			
Band edges measurement	ANSI C63.4-2009	PASSED			
Spurious Emissions	FCC Part 15: 15.209	PASSED			
Spurious Emissions	ANSI C63.4-2009	PASSED			
Antonno Doguiromento	FCC Part 15: 15.203	PASSED			
Antenna Requirements	ANSI C63.4-2009	PASSED			
N/A is an abbreviation for Not Applicable.					

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

Complaint line: +86-20-85533471

Fax: +86-20-38780406

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

**Report No.:** CGZ3140808-00871-EF Page 8 of 59



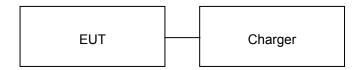


### 6.0 Power Line Conducted Emission Test

#### **6.1.Test Equipment**

Conduc	Conducted Disturbance							
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.			
1	EMI Test Receiver	ROHDE & SCHWARZ	ESHS10	842884/012	2013/11			
2	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z5	832479/025	2013/11			
3	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z5	832479/026	2013/11			
4	Pulse Limiter	ROHDE & SCHWARZ	ESHSZ2	100301	2013/11			
5	EMI Test Software	EZ-EMC	Farad	N/A	N/A			

#### 6.2. Block Diagram of Test Setup



(EUT: Rampage wifi backup camera)

#### 6.3. Power Line Conducted Emission Test Limits

Standard: FCC Part 15: 15.207, ANSI C63.4-2009

		Maximum RF Line Voltage		
Frequency		Quasi-Peak Level	Average Level	
Trequency		dB(μV)	dB(μV)	
150kHz	~ 500kHz	66 ~ 56*	56 ~ 46*	
500kHz	~ 5MHz	56	46	
5MHz	~ 30MHz	60	50	

Notes: 1. \* Decreasing linearly with logarithm of frequency.

#### **6.4.Test Procedure**

The Power connected to the power mains through a line impedance stabilization network (L.I.S.N.#2). This provides a 50 ohm coupling impedance for the EUT. Please refer the block diagram of the test setup and photographs. The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#1). Power on the PC and let it work normally, we use a keyboard test soft ware, let EUT working in test mode, then test it. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC Part 15C on Conducted Emission Test.

#### 6.5. Power Line Conducted Emission Test Results

The EUT power supply by battery ,Not applicable.

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

**Report No.:** CGZ3140808-00871-EF Page 9 of 59

<sup>2.</sup> The lower limit shall apply at the transition frequencies.





#### 7.0 6dB BANDWIDTH MEASUREMENT

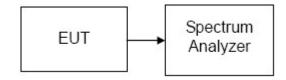
#### 7.1 LIMITS

According to §15.247(a)(2), systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

#### 7.2 MEASUREMENT EQUIPMENT USED

20dB Bandwidth						
Item	Item Test Equipment Manufacturer Model No. Serial No. Last Cal					
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2014/03	

#### 7.3 TEST CONFIGURATION



#### 7.4 TEST PROCEDURE

- 1. Place the EUT on the table and set it in the transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 3. Set the spectrum analyzer as RBW = 100kHz, VBW = 300kHz, Span =1.5 times of bandwidth, Sweep = auto.
- 4. Mark the peak frequency and -6dB (upper and lower) frequency.
- 5. Repeat until all the rest channels are investigated

#### 7.5 TEST RESULTS

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

**Report No.:** CGZ3140808-00871-EF Page 10 of 59

#### FCC ID:2AC82-7710







#### Chain:a

Modulation Standard	Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (KHz)	Result
	Low	2412	10.08		PASSED
802.11b	Middle	2437	10.10	>500	PASSED
	High	2462	10.10		PASSED
	Low	2412	16.56		PASSED
802.11g	Middle	2437	16.56	>500	PASSED
	High	2462	16.56		PASSED
	Low	2412	17.82		PASSED
802.11n(20)	Middle	2437	17.82	>500	PASSED
	High	2462	17.76		PASSED
802.11n(40)	Low	2422	36.60		PASSED
	Middle	2437	36.48	>500	PASSED
	High	2452	36.36		PASSED

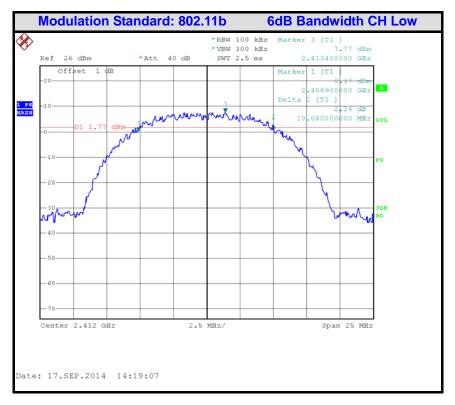
Remark: The Bandwidth is Delta 2 of following the graph. And the Delta 2 is Marker 2 subtract Marker 1.

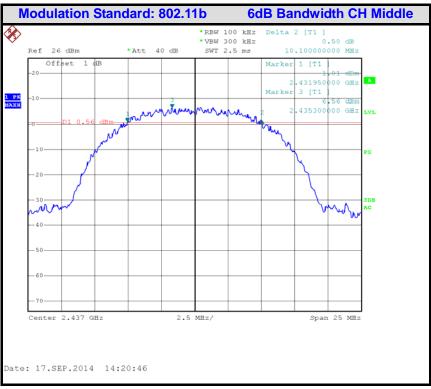
Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.





#### **Test Plot**





Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

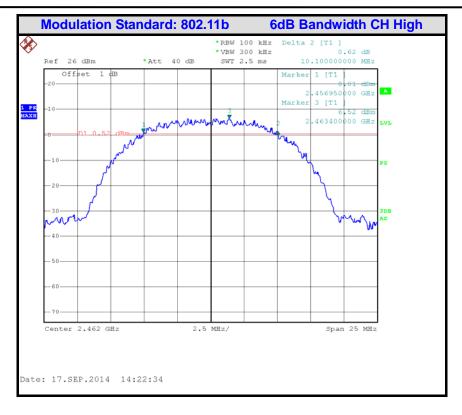
See Reverse For Terms And Conditions of Service

Report No.: CGZ3140808-00871-EF











CENTRE OF TESTING SERVICE CO., LTD.

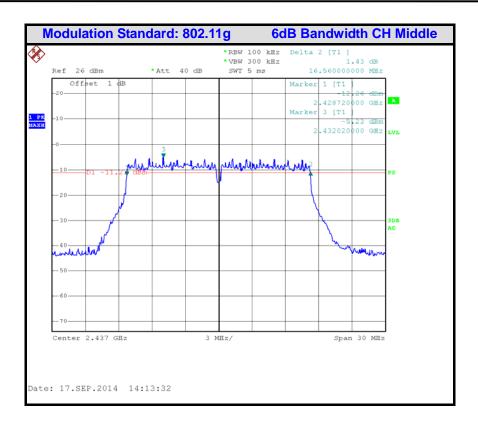
A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

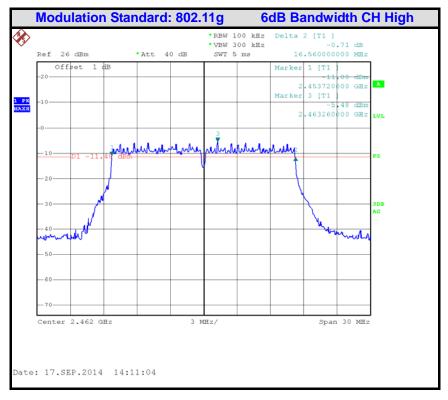
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn









#### CENTRE OF TESTING SERVICE CO., LTD.

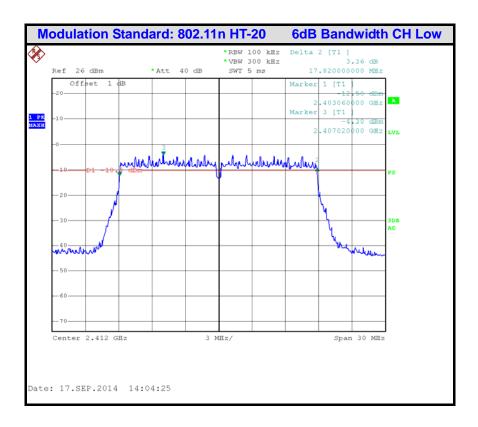
A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

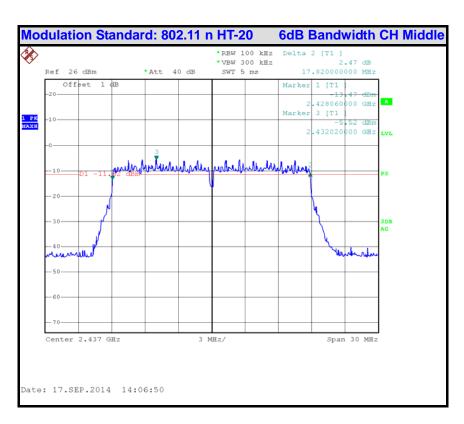
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn









#### CENTRE OF TESTING SERVICE CO., LTD.

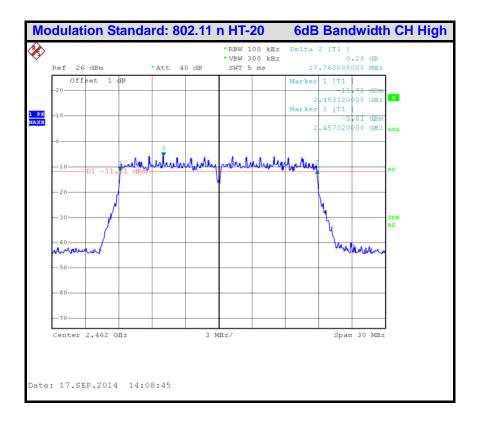
A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

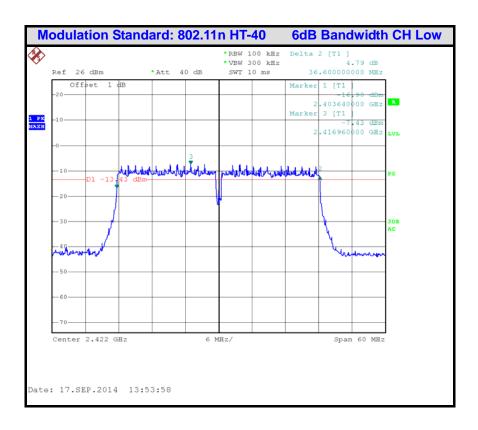
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn









CENTRE OF TESTING SERVICE CO., LTD.

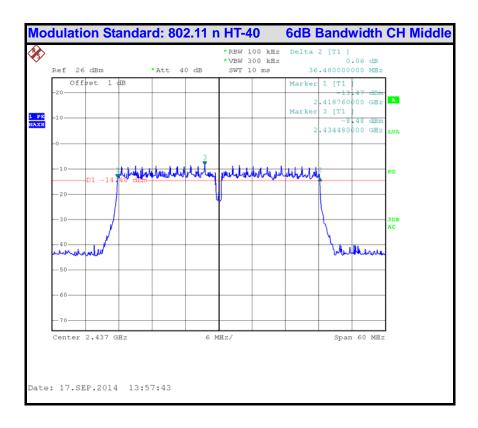
A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

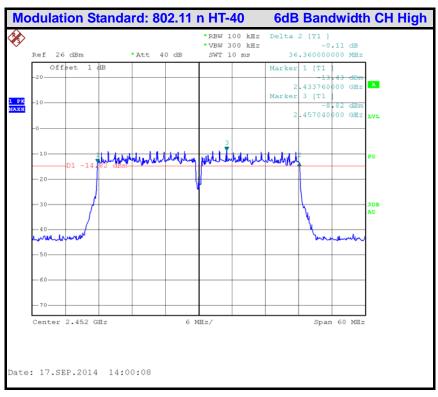
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn









#### CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn





#### 8.0 PEAK POWER

#### **8.1 LIMIT**

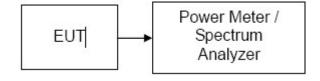
The maximum peak output power of the intentional radiator shall not exceed the following:

- 1. According to §15.247(b)(3), for systems using digital modulation in the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz: 1 Watt.
- 2. According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **8.2 MEASUREMENT EQUIPMENT USED**

Peak Power							
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.		
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2014/03		
2	Power meter	ROHDE & SCHWARZ	NRVS	842856/049	2014/03		

#### **8.3 TEST CONDIGURATION**



Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

**Report No.:** CGZ3140808-00871-EF Page 18 of 59





#### **8.4 TEST PROCEDURE**

- 1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2. Set RBW = 1 MHz.
- 3. Set VBW ≥ 3 MHz.
- 4. Use sample detector mode if bin width (i.e., span/number of points in spectrum display) < 0.5 RBW. Otherwise use peak detector mode.
- 5. Use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at full control power for entire sweep of every sweep. If the device transmits continuously, with no off intervals or reduced power Intervals, the trigger may be set to "free run".
- 6. Trace average 100 traces in power averaging mode.
- 7. Compute power by integrating the spectrum across the 26 dB EBW of the signal. The integration can be performed using the spectrum analyzer's band power measurement function with band limits set equal to the EBW band edges or by summing power levels in each 1 MHz band in linear power terms. The 1 MHz band power levels to be summed can be obtained by averaging, in linear power terms, power levels in each frequency bin across the 1 MHz.

#### **8.5 TEST RESULTS**

#### Passed Test Data

Modulation Standard	Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Result
802.11b:	Low	2412	23.94	30dBm	PASSED
5.5Mbps	Middle	2437	22.68		PASSED
(Worst Case)	High	2462	22.55		PASSED
802.11g:	Low	2412	15.44	30dBm	PASSED
54Mbps (Worst Case)	Middle	2437	14.41		PASSED
	High	2462	14.02		PASSED
802.11n(20): 150Mbps (Worst Case)	Low	2412	15.15	30dBm	PASSED
	Middle	2437	14.04		PASSED
	High	2462	13.86		PASSED
802.11n(40): 150Mbps (Worst Case)	Low	2422	14.94	30dBm	PASSED
	Middle	2437	14.25		PASSED
	High	2452	13.64		PASSED

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

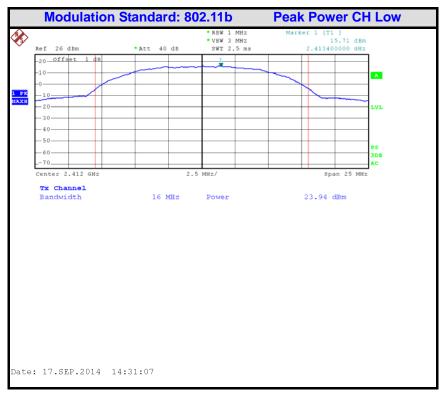
See Reverse For Terms And Conditions of Service

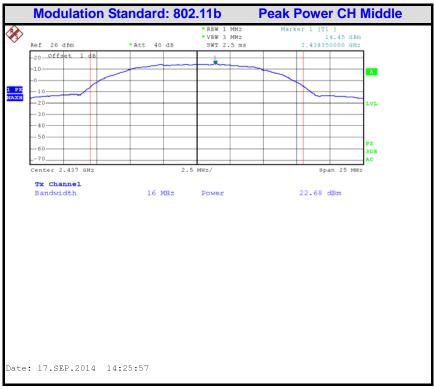
**Report No.:** CGZ3140808-00871-EF Page 19 of 59





#### **Test Plot**





Modulation Standard: 802.11b Peak Power CH High

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

#### CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

Complaint line: +86-20-85533471

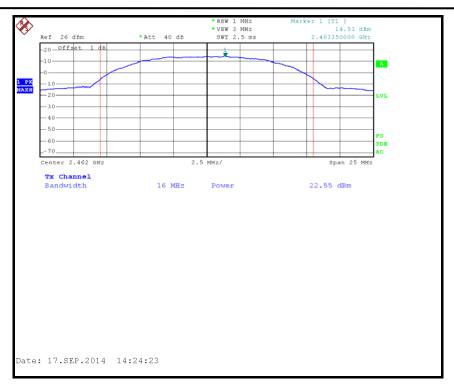
Fax: +86-20-38780406

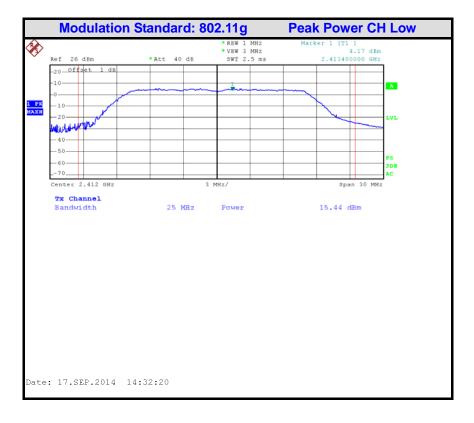
E-mail: cts@cts-lab.com.cn

#### **CENTRE OF TESTING SERVICE**









Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

#### CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

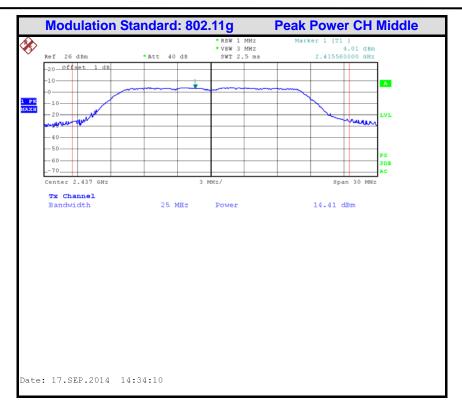
Complaint line: +86-20-85533471

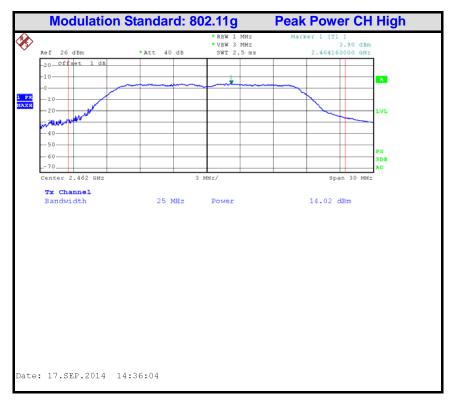
F-mail: cts@cts-lab.com.cn











#### CENTRE OF TESTING SERVICE CO., LTD.

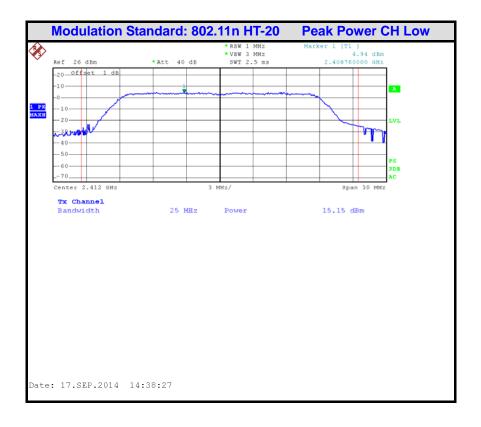
A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

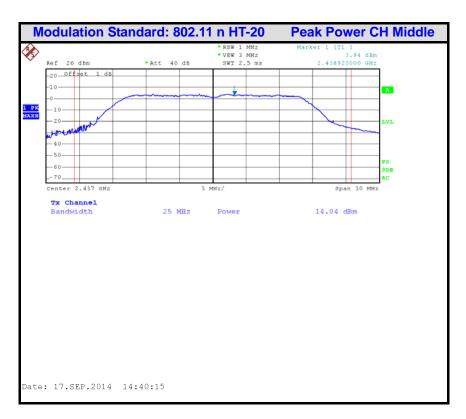
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn







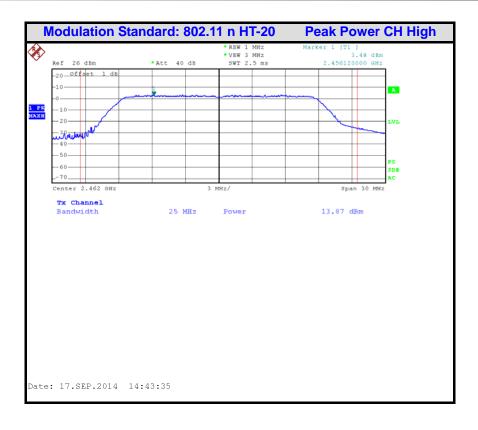


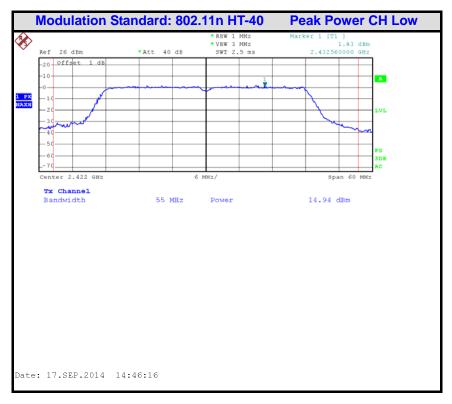
#### CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406
Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn







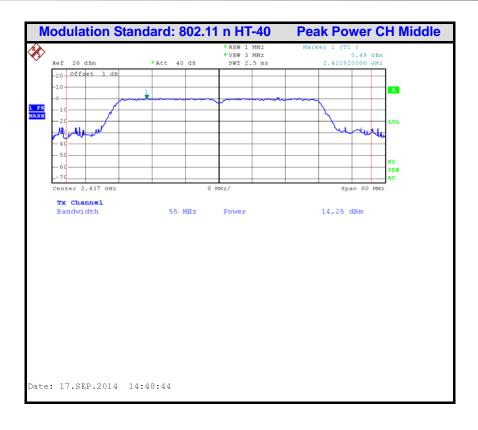


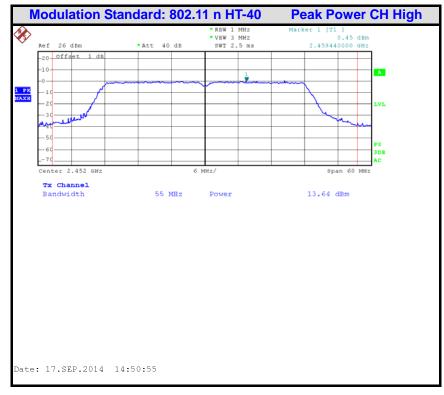
#### CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406
Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn









#### CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn





#### 9.0 PEAK POWER SPECTRAL DENSITY

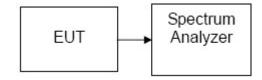
#### **9.1 LIMIT**

- 1. For direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.
- 2. The direct sequence operating of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section

#### 9.2 MEASUREMENT EQUIPMENT USED

Peak Power Spectral Density							
Item	Test Equipment Manufacturer Model No. Serial No. Last Cal.						
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2014/03		

#### 9.3 TEST CONFIGURATION



#### 9.4 TEST PROCEDURE

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 3. Set the spectrum analyzer as RBW = 10kHz, VBW = 30kHz, Span = 1.5 times the bandwidth, Sweep=Auto couple
- 4. Record the max. reading.
- 5. Repeat the above procedure until the measurements for all frequencies are completed.

#### 9.5 TEST RESULTS

**PASSED** 

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

**Report No.:** CGZ3140808-00871-EF Page 26 of 59





#### **Test Data**

Modulation Standard	Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
802.11b:	Low	2412	-1.84	8	PASSED
5.5Mbps	Middle	2437	-2.38		PASSED
(Worst Case)	High	2462	-2.99		PASSED
802.11g:	Low	2412	-12.63		PASSED
54Mbps (Worst Case)	Middle	2437	-14.05	8	PASSED
	High	2462	-14.65		PASSED
802.11n(20):	Low	2412	-13.54	8	PASSED
150Mbps	Middle	2437	-14.76		PASSED
(Worst Case)	High	2462	-15.03		PASSED
802.11n(40): 150Mbps (Worst Case)	Low	2422	-16.78		PASSED
	Middle	2437	-17.52	8	PASSED
	High	2452	-17.68		PASSED

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

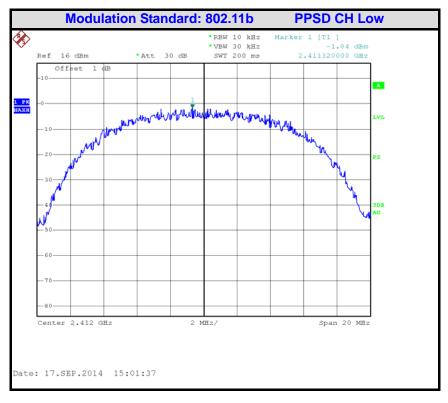
See Reverse For Terms And Conditions of Service

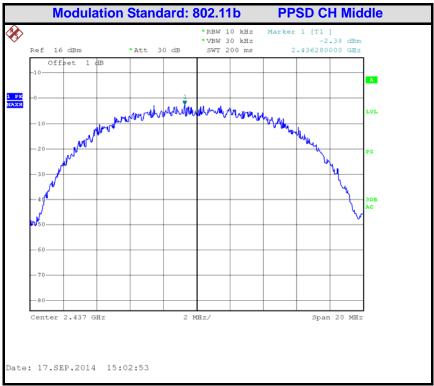
**Report No.:** CGZ3140808-00871-EF Page 27 of 59





#### **Test Plot**





Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

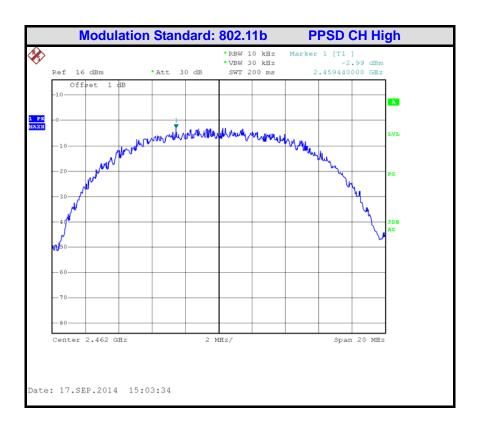
A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

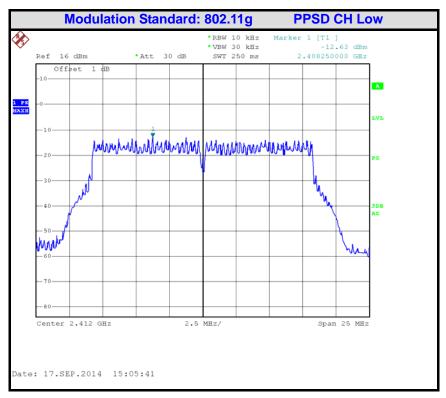
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn









#### CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

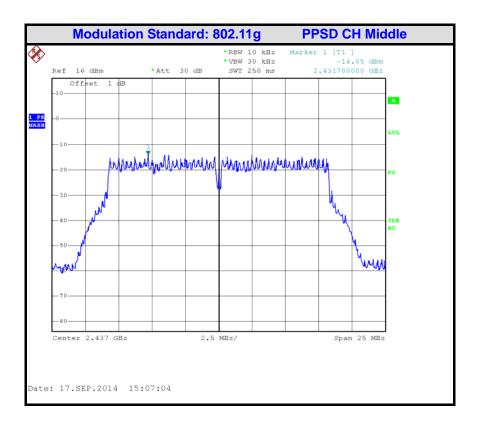
Tel: +86-20-85543113 (32 lines)

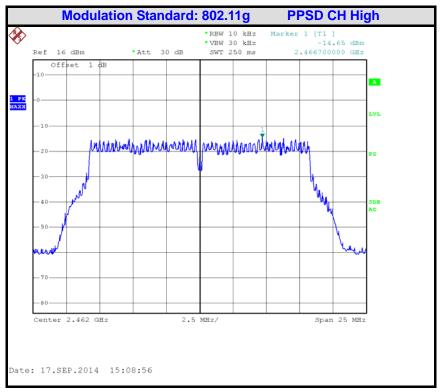
Complaint line: +86-20-85533471

F-mail: cts@cts-lab.com.cn









#### CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

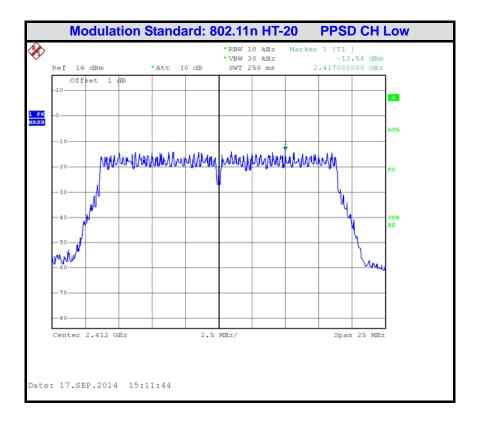
Tel: +86-20-85543113 (32 lines)

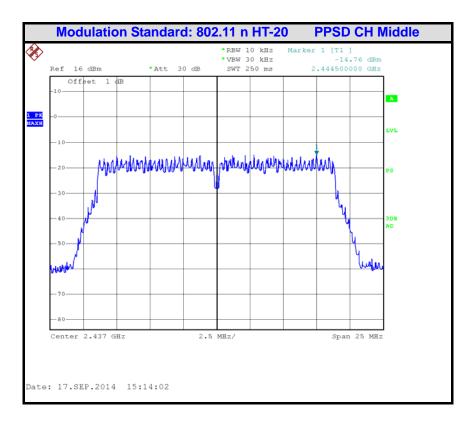
Complaint line: +86-20-85533471

F-mail: cts@cts-lab.com.cn









#### CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

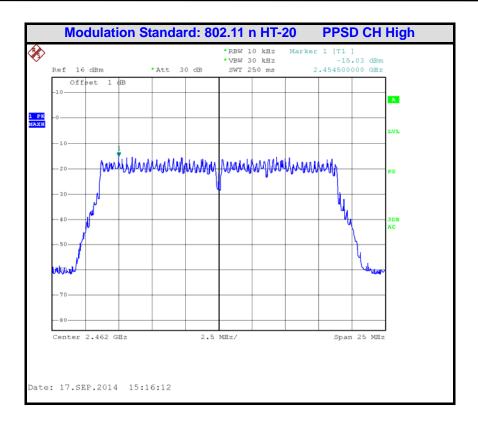
Tel: +86-20-85543113 (32 lines)

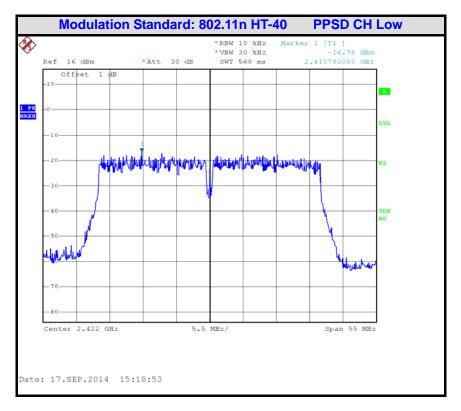
Complaint line: +86-20-85533471

F-mail: cts@cts-lab.com.cn









#### CENTRE OF TESTING SERVICE CO., LTD.

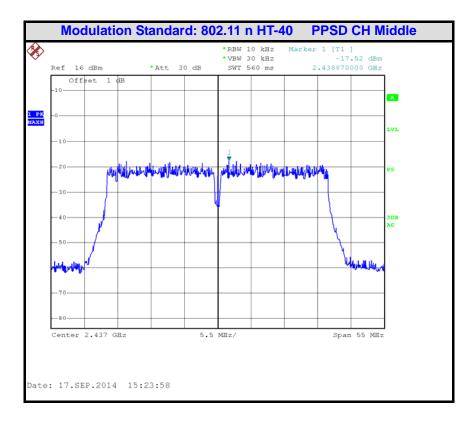
A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

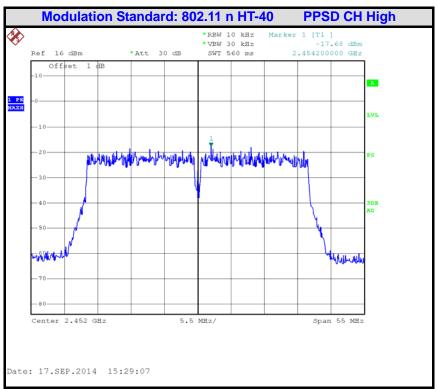
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn









CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn





#### 10.0 BAND EDGES MEASUREMENT

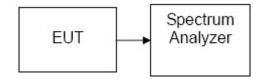
#### **10.1 LIMIT**

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

#### **10.2 MEASUREMENT EQUIPMENT USED**

Radiated disturbance (electric field)						
Item	Test Equipment Manufacturer Model No. Serial No. Last Cal.					
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2014/03	

# 10.3 Test Configuration



#### **10.4 TEST PROCEDURE**

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 3. Set the spectrum analyzer as RBW = 100kHz, VBW = 300kHz, Span = 1.5 times the bandwidth, Sweep=Auto couple
- 4. Record the max. reading.
- 5. Repeat the above procedure until the measurements for all frequencies are

#### **10.5 TEST RESULTS**

Refer to attach spectrum analyzer data chart.

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

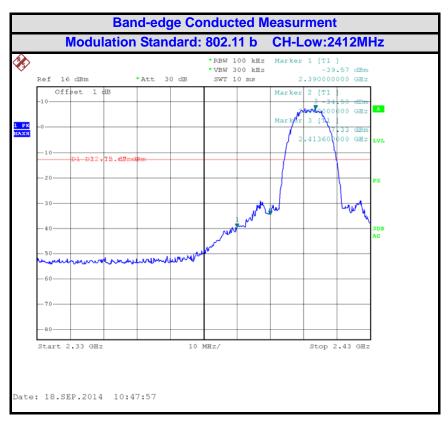
See Reverse For Terms And Conditions of Service

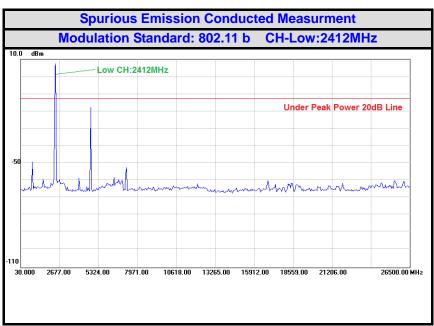
**Report No.:** CGZ3140808-00871-EF Page 34 of 59





#### **Test Polt:**





Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

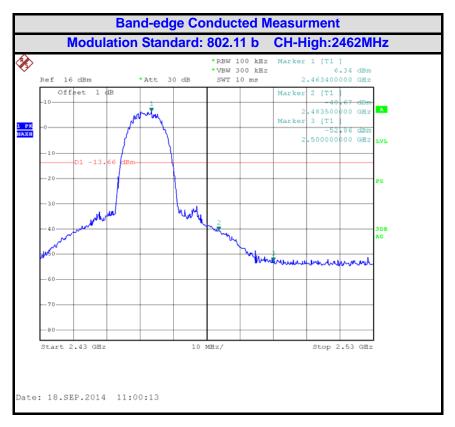
Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

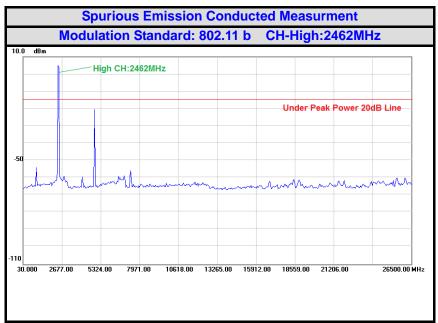
See Reverse For Terms And Conditions of Service

Report No.: CGZ3140808-00871-EF









CENTRE OF TESTING SERVICE CO., LTD.

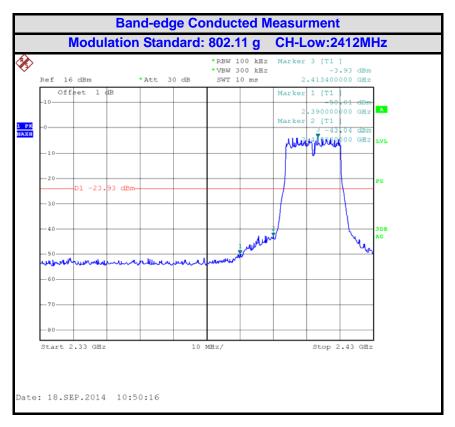
A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

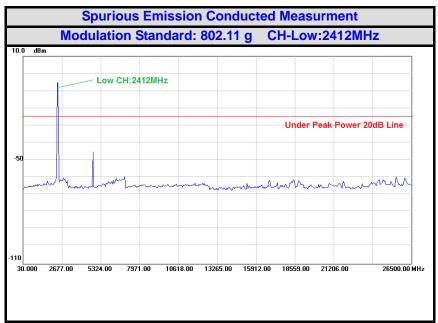
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn









CENTRE OF TESTING SERVICE CO., LTD.

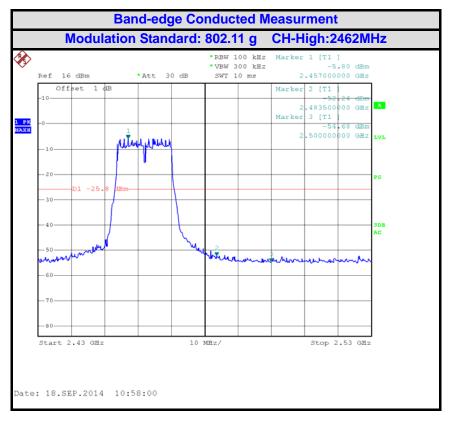
A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

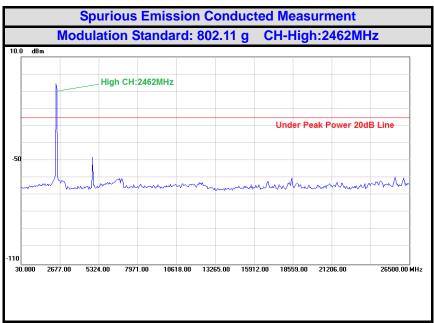
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn









CENTRE OF TESTING SERVICE CO., LTD.

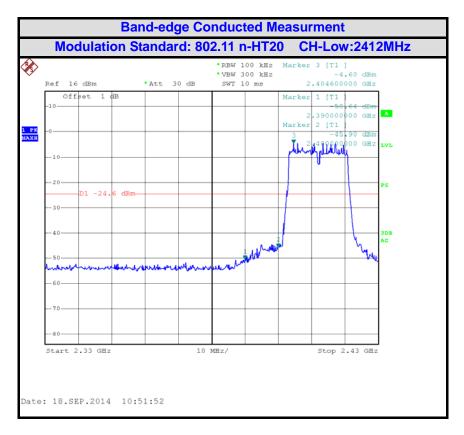
A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

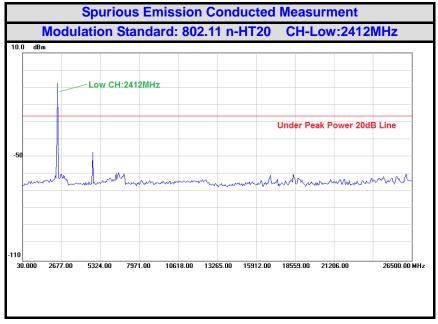
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn









CENTRE OF TESTING SERVICE CO., LTD.

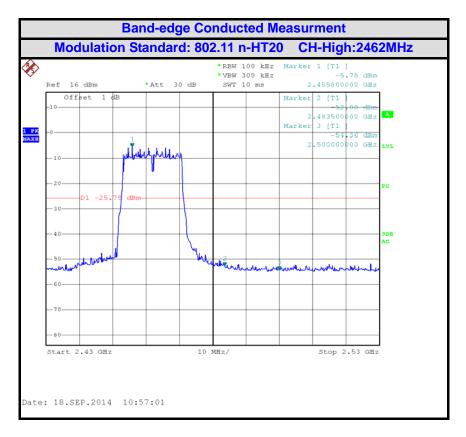
A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

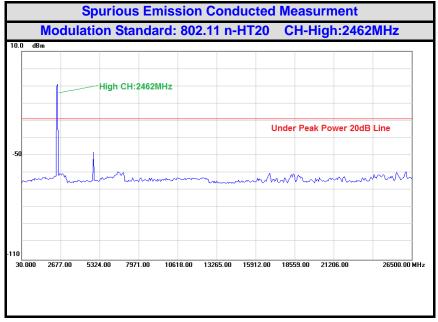
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn









CENTRE OF TESTING SERVICE CO., LTD.

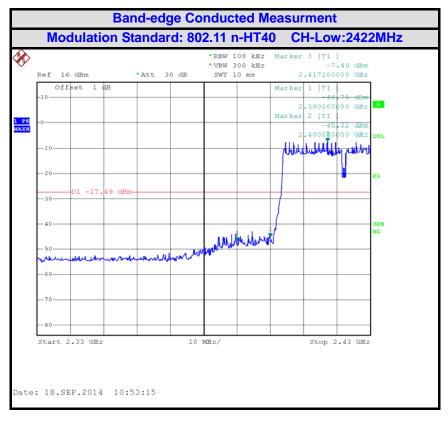
A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

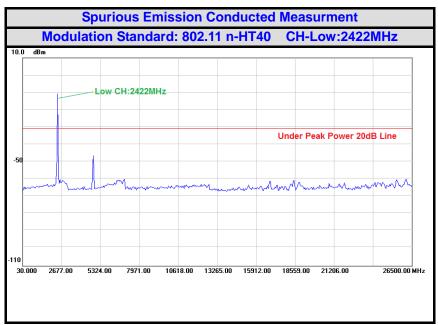
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn









CENTRE OF TESTING SERVICE CO., LTD.

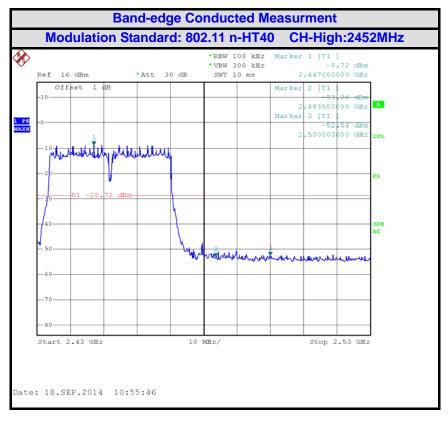
A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

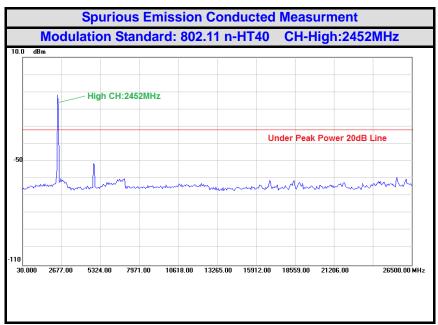
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn









CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn





## 11.0 SPURIOUS EMISSIONS

## **11.1 LIMIT**

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:

FRE	QUEN	CY	DISTANCE	FIELD STRENGTHS LIMIT		
	MHz		Meters	$\mu V/m$	dB(μV)/m	
0.009	~	0.490	300	2400/F(kHz)		
0.490	~	1.705	30	24000/F(kHz)		
1.705	~	30	30	30		
30	~	88	3	100	40.0	
88	~	216	3	150	43.5	
216	~	960	3	200	46.0	
960	~	1000	3	500	54.0	
Al	Above 1000		3	Other:74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)		

Note: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

## 11.2 Test Equipment

Radia	Radiated disturbance (electric field)								
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.				
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	100868	2013/11				
2	Biconical Antenna	ROHDE & SCHWARZ	HK116	100221	2014/03				
3	Log per Antenna	ROHDE & SCHWARZ	HL223	100226	2014/03				
4	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2014/03				
5	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2014/03				
6	Loop Antenna	A.R.A	PLA-1030/B	1030	2013/11				
7	EMI Test Software	EZ-EMC	Farad	N/A	N/A				

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

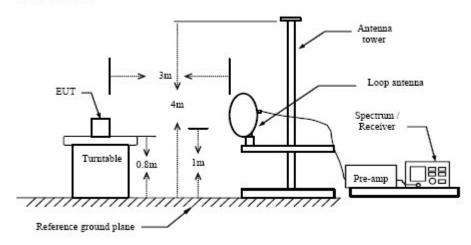
**Report No.:** CGZ3140808-00871-EF Page 43 of 59



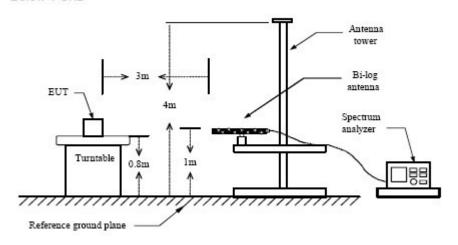


## **11.3 TEST CONFIGURATION**

#### Below 30MHz



#### Below 1 GHz



Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

Complaint line: +86-20-85533471

F-mail: cts@cts-lab.com.cn

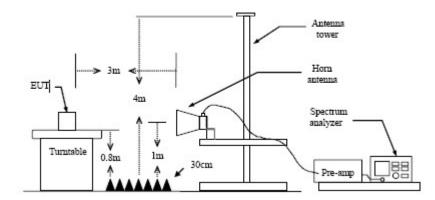
See Reverse For Terms And Conditions of Service

Report No.: CGZ3140808-00871-EF





#### Above 1 GHz



#### 11.4 TEST PROCEDURE

- 1. The EUT is placed on a turntable, which is 0.8m above ground plane.
- 2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 6. Repeat above procedures until the measurements for all frequencies are complete.

## 11.5 TEST RESULTS

The frequency range from 9KHz~30MHz,30MHz to 230MHz, 230MHz to 1000MHz and above 1GHz. is investigated. Please see the following pages.

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.



## **CENTRE OF TESTING SERVICE**





Test Mode: TX –X Position Mode Result: □ - passed Frequency range: 9KHz~30MHz □ - not passed

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
Rem	Remark: The test result reading value is to low, margin all > 10dB of the limit.								

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

**Report No.:** CGZ3140808-00871-EF Page 46 of 59

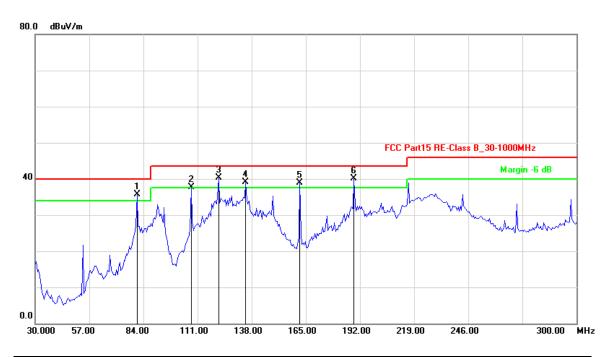
## **CENTRE OF TESTING SERVICE**





EUT	Rampage wifi backup camera			
Operating Condition Battery 3.7V; DC 12V for Charger				
Test Condition Ambient Temperature: 25°C Humidity: 56%				
Test distance	3 Meter			
Test Date:	16~18 September 2014			
Operator	Duke			
MODEL NO	7710			

Channel:	TX –X Position	Result:	■ - passed
Test point:	Horizontal		□ - not passed
Frequency range:	30MHz-1GHz		



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	80.8617	-21.60	57.22	35.62	40.00	-4.38	QP		
2	107.9158	-21.09	58.79	37.70	43.50	-5.80	QP		
3	121.4429	-17.98	58.22	40.24	43.50	-3.26	QP		
4	134.9699	-16.72	55.86	39.14	43.50	-4.36	QP		
5	162.0240	-18.46	57.46	39.00	43.50	-4.50	QP		
6	189.0782	-12.34	52.44	40.10	43.50	-3.40	QP		
Remark:	Remark: Other frequency mini margin all >6 dB of Limit								

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

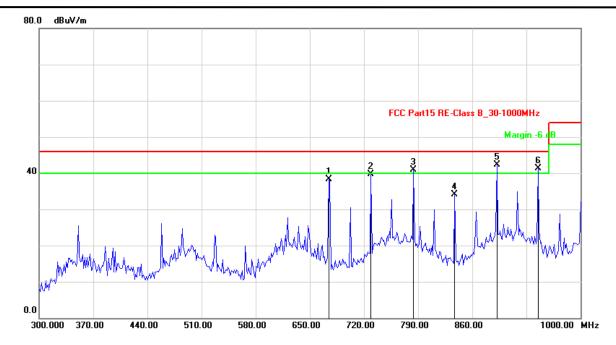
See Reverse For Terms And Conditions of Service

**Report No.:** CGZ3140808-00871-EF Page 47 of 59

## **CENTRE OF TESTING SERVICE**







No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	674.5491	-12.77	51.00	38.23	46.00	-7.77	QP		
2	729.2585	-9.29	48.95	39.66	46.00	-6.34	QP		
3	783.9679	-6.46	47.38	40.92	46.00	-5.08	QP		
4	837.2745	-11.32	45.49	34.17	46.00	-11.83	QP		
5	891.9840	-4.33	46.60	42.27	46.00	-3.73	QP		
6	945.2906	-7.80	49.01	41.21	46.00	-4.79	QP		
Remark	Remark: Other frequency mini margin all >6 dB of Limit								

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406
Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn







Modulation Standard:	802.11 b	Result:	■ - passed
Channel:	Low Channel		□ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	3468.938	8.11	42.32	50.43	74.00	-23.57	peak		
2	3468.938	8.11	27.03	35.14	54.00	-18.86	AVG		
3	4967.936	12.08	37.80	49.88	74.00	-24.12	peak		
4	4967.936	12.08	23.10	35.18	54.00	-18.82	AVG		
5	5915.832	15.11	39.44	54.55	74.00	-19.45	peak		
6	5915.832	15.11	24.94	40.05	54.00	-13.95	AVG		
Remark	Remark: Other frequency mini margin all >6 dB of Limit								

Modulation Standard:	802.11 b	Result:	■ - passed
Channel:	Middle Channel		□ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	3799.599	9.17	39.30	48.47	74.00	-25.53	peak		
2	3799.599	9.17	25.01	34.18	54.00	-19.82	AVG		
3	4879.760	11.88	35.97	47.85	74.00	-26.15	peak		
4	4879.760	11.88	20.81	32.69	54.00	-21.31	AVG		
5	5519.038	13.83	39.49	53.32	74.00	-20.68	peak		
6	5519.038	13.83	24.88	38.71	54.00	-15.29	AVG		
Remark:	Remark: Other frequency mini margin all >6 dB of Limit								

Modulation Standard:	802.11 b	Result:	■ - passed
Channel:	High Channel		☐ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	4549.098	11.10	36.67	47.77	74.00	-26.23	peak
2	4549.098	11.10	21.44	32.54	54.00	-21.46	AVG
3	5452.906	13.62	38.37	51.99	74.00	-22.01	peak
4	5452.906	13.62	23.35	36.97	54.00	-17.03	AVG
5	7480.962	18.47	37.67	56.14	74.00	-17.86	peak
6	7480.962	18.47	22.75	41.22	54.00	-12.78	AVG
Remark	Other frequen	cy mini ma	rgin all >6 dB	of Limit			

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

**Report No.:** CGZ3140808-00871-EF Page 49 of 59







Modulation Standard:	802.11 g	Result:	■ - passed
Channel:	Low Channel		☐ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1947.896	-1.17	49.66	48.49	74.00	-25.51	peak
2	1947.896	-1.17	36.74	35.57	54.00	-18.43	AVG
3	5893.788	15.04	42.24	57.28	74.00	-16.72	peak
4	5893.788	15.04	27.35	42.39	54.00	-11.61	AVG
5	6621.242	16.88	44.24	61.12	74.00	-12.88	peak
6	6621.242	16.88	28.62	45.50	54.00	-8.50	AVG
Remark	: Other frequen	icy mini ma	rgin all >6 dB	of Limit			

Modulation Standard:	802.11 g	Result:	■ - passed
Channel:	Middle Channel		□ - not passed
Test point:	Horizontal		'
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3248.497	7.40	42.82	50.22	74.00	-23.78	peak
2	3248.497	7.40	26.11	33.51	54.00	-20.49	AVG
3	7172.345	18.04	39.99	58.03	74.00	-15.97	peak
4	7172.345	18.04	22.45	40.49	54.00	-13.51	AVG
5	8230.461	19.84	39.58	59.42	74.00	-14.58	peak
6	8230.461	19.84	23.58	43.42	54.00	-10.58	AVG
Remark	: Other frequen	cy mini ma	rgin all >6 dB	of Limit		•	

Modulation Standard:	802 11 a	Pacult.	■ - passed
Modulation Standard.	002.11 g	i Nesuit.	■ - passeu
Channel:	High Channel		□ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3292.585	7.54	42.57	50.11	74.00	-23.89	peak
2	3292.585	7.54	27.77	35.31	54.00	-18.69	AVG
3	4306.613	10.53	40.01	50.54	74.00	-23.46	peak
4	4306.613	10.53	25.11	35.64	54.00	-18.36	AVG
5	6511.022	16.62	42.39	59.01	74.00	-14.99	peak
6	6511.022	16.62	27.25	43.87	54.00	-10.13	AVG
Remark	Other frequen	icy mini ma	rgin all >6 dB o	of Limit			

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

**Report No.:** CGZ3140808-00871-EF Page 50 of 59







Modulation Standard:	802.11n-HT20	Result:	■ - passed
Channel:	Low Channel		□ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1947.896	-1.17	43.44	42.27	74.00	-31.73	peak
2	1947.896	-1.17	37.79	36.62	54.00	-17.38	AVG
3	5871.743	14.97	41.04	56.01	74.00	-17.99	peak
4	5871.743	14.97	25.17	40.14	54.00	-13.86	AVG
5	9641.283	23.30	40.30	63.60	74.00	-10.40	peak
6	9641.283	23.30	23.66	46.96	54.00	-7.04	AVG
Remark:	Other frequen	cy mini ma	rgin all >6 dB o	of Limit			

Modulation Standard:	802.11n-HT20	Result:	■ - passed
Channel:	Middle Channel		☐ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	3799.599	9.17	40.49	49.66	74.00	-24.34	peak		
2	3799.599	9.17	34.60	43.77	54.00	-10.23	AVG		
3	6268.537	16.03	41.51	57.54	74.00	-16.46	peak		
4	6268.537	16.03	23.99	40.02	54.00	-13.98	AVG		
5	8120.240	19.53	39.97	59.50	74.00	-14.50	peak		
6	8120.240	19.53	22.04	41.57	54.00	-12.43	AVG		
Remark:	Remark: Other frequency mini margin all >6 dB of Limit								

Modulation Standard:	802.11n-HT20	Result:	■ - passed
Channel:	High Channel		☐ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	5364.729	13.33	38.49	51.82	74.00	-22.18	peak		
2	5364.729	13.33	20.92	34.25	54.00	-19.75	AVG		
3	7547.094	18.56	38.61	57.17	74.00	-16.83	peak		
4	7547.094	18.56	21.46	40.02	54.00	-13.98	AVG		
5	9068.136	22.15	39.41	61.56	74.00	-12.44	peak		
6	9068.136	22.15	20.14	42.29	54.00	-11.71	AVG		
Remark	Remark: Other frequency mini margin all >6 dB of Limit								

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

**Report No.:** CGZ3140808-00871-EF Page 51 of 59







Modulation Standard:	802.11n-HT40	Result:	■ - passed
Channel:	Low Channel		□ - not passed
Test point:	Horizontal		, , , , , , , , , , , , , , , , , , ,
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	3667.335	8.74	40.90	49.64	74.00	-24.36	peak		
2	3667.335	8.74	22.43	31.17	54.00	-22.83	AVG		
3	6004.008	15.39	40.26	55.65	74.00	-18.35	peak		
4	6004.008	15.39	23.09	38.48	54.00	-15.52	AVG		
5	9619.238	23.25	39.69	62.94	74.00	-11.06	peak		
6	9619.238	23.25	22.27	45.52	54.00	-8.48	AVG		
Remark	Remark: Other frequency mini margin all >6 dB of Limit								

Modulation Standard:	802.11n-HT40	Result:	■ - passed
Channel:	Middle Channel		□ - not passed
Test point:	Horizontal		•
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	3645.291	8.67	41.67	50.34	74.00	-23.66	peak		
2	3645.291	8.67	24.85	33.52	54.00	-20.48	AVG		
3	5915.832	15.11	41.73	56.84	74.00	-17.16	peak		
4	5915.832	15.11	23.16	38.27	54.00	-15.73	AVG		
5	9134.269	22.28	38.49	60.77	74.00	-13.23	peak		
6	9134.269	22.28	18.83	41.11	54.00	-12.89	AVG		
Remark	Remark: Other frequency mini margin all >6 dB of Limit								

Modulation Standard:	802.11n-HT40	Result:	■ - passed
			_ passea
l Channel:	High Channel		☐ - not passed
I	•		- Hot passed
Test point:	Horizontal		
	4011- 00 5011-		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	5695.391	14.40	40.25	54.65	74.00	-19.35	peak		
2	5695.391	14.40	20.76	35.16	54.00	-18.84	AVG		
3	8142.285	19.59	40.24	59.83	74.00	-14.17	peak		
4	8142.285	19.59	22.68	42.27	54.00	-11.73	AVG		
5	9090.180	22.19	39.24	61.43	74.00	-12.57	peak		
6	9090.180	22.19	21.11	43.30	54.00	-10.70	AVG		
Remark	Remark: Other frequency mini margin all >6 dB of Limit								

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

## CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

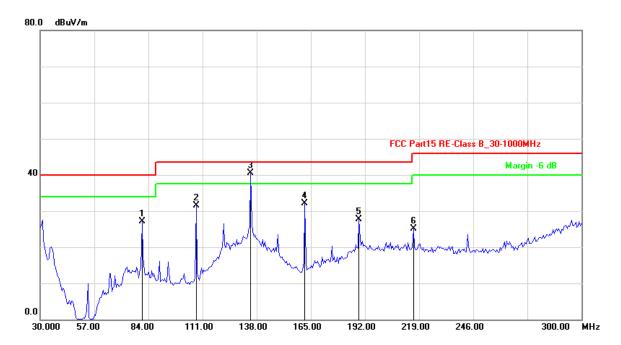
**Report No.:** CGZ3140808-00871-EF Page 52 of 59







Channel:	TX –X Position	Result:	■ - passed
Test point:	Vertical		☐ - not passed
Frequency range:	30MHz-1GHz		



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	80.8617	-21.60	48.76	27.16	40.00	-12.84	QP		
2	107.9158	-21.09	52.65	31.56	43.50	-11.94	QP		
3	134.9699	-16.72	57.19	40.47	43.50	-3.03	QP		
4	162.0240	-18.46	50.56	32.10	43.50	-11.40	QP		
5	189.0782	-12.34	39.97	27.63	43.50	-15.87	QP		
6	216.1323	-12.29	37.42	25.13	46.00	-20.87	QP		
Remark:	Remark: Other frequency mini margin all >6 dB of Limit								

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

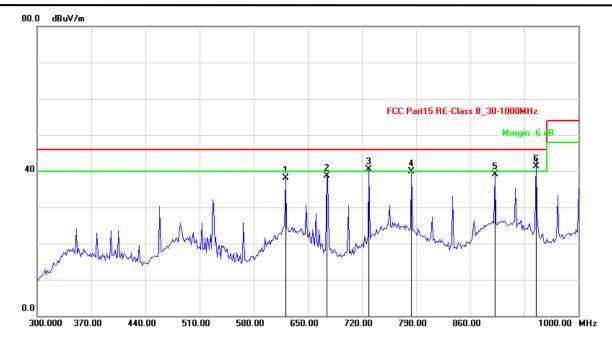
See Reverse For Terms And Conditions of Service

**Report No.:** CGZ3140808-00871-EF Page 53 of 59

## **CENTRE OF TESTING SERVICE**







No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	621.2425	-7.10	45.25	38.15	46.00	-7.85	QP		
2	674.5491	-12.77	51.49	38.72	46.00	-7.28	QP		
3	729.2585	-9.29	49.76	40.47	46.00	-5.53	QP		
4	783.9679	-6.46	46.44	39.98	46.00	-6.02	QP		
5	891.9840	-4.33	43.47	39.14	46.00	-6.86	QP		
6	945.2906	-7.80	49.08	41.28	46.00	-4.72	QP		
Remark:	Remark: Other frequency mini margin all >6 dB of Limit								

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406
Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn







Modulation Standard: 802.11 b
Channel: Low Channel
Test point: Vertical
Frequency range: 1GHz-26.5GHz

Result: □ - passed
□ - not passed

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	3270.541	7.47	43.21	50.68	74.00	-23.32	peak		
2	3270.541	7.47	27.79	35.26	54.00	-18.74	AVG		
3	4350.701	10.63	40.02	50.65	74.00	-23.35	peak		
4	4350.701	10.63	25.51	36.14	54.00	-17.86	AVG		
5	5717.435	14.47	39.82	54.29	74.00	-19.71	peak		
6	5717.435	14.47	25.27	39.74	54.00	-14.26	AVG		
Remark	Remark: Other frequency mini margin all >6 dB of Limit								

Modulation Standard:802.11 bResult:■ - passedChannel:Middle Channel□ - not passedTest point:VerticalFrequency range:1GHz-26.5GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	3336.673	7.68	41.51	49.19	74.00	-24.81	peak		
2	3336.673	7.68	27.50	35.18	54.00	-18.82	AVG		
3	3733.467	8.95	39.78	48.73	74.00	-25.27	peak		
4	3733.467	8.95	25.34	34.29	54.00	-19.71	AVG		
5	4989.980	12.14	38.21	50.35	74.00	-23.65	peak		
6	4989.980	12.14	23.93	36.07	54.00	-17.93	AVG		
Remark:	Remark: Other frequency mini margin all >6 dB of Limit								

Modulation Standard:	802.11 b	Result:	■ - passed
			- passea
Channel:	High Channel		□ - not passed
	S .		□ - Hot passed
Test point:	Vertical		
1 oot point.			
Frequency range:	1GHz-26.5GHz		
i requeries rarige.	10112-20.00112		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.			
1	3380.762	7.82	40.32	48.14	74.00	-25.86	peak			
2	3380.762	7.82	25.39	33.21	54.00	-20.79	AVG			
3	4549.098	11.10	37.39	48.49	74.00	-25.51	peak			
4	4549.098	11.10	22.17	33.27	54.00	-20.73	AVG			
5	7480.962	18.47	37.08	55.55	74.00	-18.45	peak			
6	7480.962	18.47	21.71	40.18	54.00	-13.82	AVG			
Remark	Remark: Other frequency mini margin all >6 dB of Limit									

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

#### CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

**Report No.:** CGZ3140808-00871-EF Page 55 of 59







Modulation Standard:	802.11 g	Result:	■ - passed
Channel:	Low Channel		□ - not passed
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.			
1	4130.261	10.12	37.63	47.75	74.00	-26.25	peak			
2	4130.261	10.12	21.89	32.01	54.00	-21.99	AVG			
3	5122.245	12.55	36.69	49.24	74.00	-24.76	peak			
4	5122.245	12.55	21.97	34.52	54.00	-19.48	AVG			
5	5805.611	14.75	39.52	54.27	74.00	-19.73	peak			
6	5805.611	14.75	25.40	40.15	54.00	-13.85	AVG			
Remark	Remark: Other frequency mini margin all >6 dB of Limit									

Modulation Standard:	802.11 g	Result:	■ - passed
Channel:	Middle Channel		□ - not passed
Test point:	Vertical		•
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	1947.896	-1.17	44.45	43.28	74.00	-30.72	peak		
2	1947.896	-1.17	31.39	30.22	54.00	-23.78	AVG		
3	3336.673	7.68	43.53	51.21	74.00	-22.79	peak		
4	3336.673	7.68	29.85	37.53	54.00	-16.47	AVG		
5	6026.052	15.44	41.36	56.80	74.00	-17.20	peak		
6	6026.052	15.44	24.46	39.90	54.00	-14.10	AVG		
Remark	Remark: Other frequency mini margin all >6 dB of Limit								

Modulation Standard:	802.11 g	Result:	■ - passed
Channel:	High Channel		□ - not passed
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.			
1	3777.555	9.10	41.29	50.39	74.00	-23.61	peak			
2	3777.555	9.10	24.53	33.63	54.00	-20.37	AVG			
3	6070.140	15.55	41.27	56.82	74.00	-17.18	peak			
4	6070.140	15.55	24.17	39.72	54.00	-14.28	AVG			
5	8693.387	21.15	39.50	60.65	74.00	-13.35	peak			
6	8693.387	21.15	24.42	45.57	54.00	-8.43	AVG			
Remark	Remark: Other frequency mini margin all >6 dB of Limit									

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

## CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

**Report No.:** CGZ3140808-00871-EF Page 56 of 59







Modulation Standard:	802.11n-HT20	Result:	■ - passed
Channel:	Low Channel		☐ - not passed
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	3667.335	8.74	42.63	51.37	74.00	-22.63	peak		
2	3667.335	8.74	29.00	37.74	54.00	-16.26	AVG		
3	4703.407	11.46	39.21	50.67	74.00	-23.33	peak		
4	4703.407	11.46	23.66	35.12	54.00	-18.88	AVG		
5	8605.210	20.90	39.04	59.94	74.00	-14.06	peak		
6	8605.210	20.90	23.66	44.56	54.00	-9.44	AVG		
Remark	Remark: Other frequency mini margin all >6 dB of Limit								

Modulation Standard:	802.11n-HT20	Result:	■ - passed
Channel:	Middle Channel		□ - not passed
Test point:	Vertical		•
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.			
1	3446.894	8.03	42.05	50.08	74.00	-23.92	peak			
2	3446.894	8.03	25.08	33.11	54.00	-20.89	AVG			
3	9619.238	23.25	39.32	62.57	74.00	-11.43	peak			
4	9619.238	23.25	21.09	44.34	54.00	-9.66	AVG			
5	10655.311	25.04	39.35	64.39	74.00	-9.61	peak			
6	10655.311	25.04	21.78	46.82	54.00	-7.18	AVG			
Remark:	Remark: Other frequency mini margin all >6 dB of Limit									

Modulation Standard:	802 11n HT20	Decult:	■ - passed
Modulation Standard.	002.1111-11120	Mesuit.	■ - passeu
Channel:	High Channel		□ - not passed
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	4108.216	10.06	40.42	50.48	74.00	-23.52	peak		
2	4108.216	10.06	22.15	32.21	54.00	-21.79	AVG		
3	5541.082	13.90	40.44	54.34	74.00	-19.66	peak		
4	5541.082	13.90	22.17	36.07	54.00	-17.93	AVG		
5	7789.579	18.90	38.63	57.53	74.00	-16.47	peak		
6	7789.579	18.90	21.72	40.62	54.00	-13.38	AVG		
Remark	Remark: Other frequency mini margin all >6 dB of Limit								

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

**Report No.:** CGZ3140808-00871-EF Page 57 of 59







Modulation Standard:	802.11n-HT40	Result:	■ - passed
Channel:	Low Channel		☐ - not passed
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.			
1	3711.423	8.88	40.80	49.68	74.00	-24.32	peak			
2	3711.423	8.88	24.11	32.99	54.00	-21.01	AVG			
3	4615.230	11.26	38.53	49.79	74.00	-24.21	peak			
4	4615.230	11.26	22.36	33.62	54.00	-20.38	AVG			
5	8142.285	19.59	38.96	58.55	74.00	-15.45	peak			
6	8142.285	19.59	20.84	40.43	54.00	-13.57	AVG			
Remark	Remark: Other frequency mini margin all >6 dB of Limit									

Modulation Standard:	802.11n-HT40	Result:	■ - passed
Channel:	Middle Channel		□ - not passed
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.			
1	1947.896	-1.17	43.84	42.67	74.00	-31.33	peak			
2	1947.896	-1.17	29.09	27.92	54.00	-26.08	AVG			
3	4152.305	10.17	39.61	49.78	74.00	-24.22	peak			
4	4152.305	10.17	22.92	33.09	54.00	-20.91	AVG			
5	5761.523	14.61	39.27	53.88	74.00	-20.12	peak			
6	5761.523	14.61	20.52	35.13	54.00	-18.87	AVG			
Remark:	Remark: Other frequency mini margin all >6 dB of Limit									

Modulation Standard:	802.11n-HT40	Result:	■ - passed
Channel:	High Channel		□ - not passed
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	
1	6048.096	15.50	41.08	56.58	74.00	-17.42	peak	
2	6048.096	15.50	22.21	37.71	54.00	-16.29	AVG	
3	8076.152	19.40	39.17	58.57	74.00	-15.43	peak	
4	8076.152	19.40	21.48	40.88	54.00	-13.12	AVG	
5	9112.224	22.24	38.41	60.65	74.00	-13.35	peak	
6	9112.224	22.24	20.08	42.32	54.00	-11.68	AVG	
Remark: Other frequency mini margin all >6 dB of Limit								

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

**Report No.:** CGZ3140808-00871-EF Page 58 of 59





# 12.0 Antenna Requirements

## 12.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, 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.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

## 12.2 Antenna Construction and Directional Gain

Antenna type: Internal antenna

Antenna Gain: 0 dBi

# 13.0 Deviation to test specifications

The following identical model(s):

N/A

Belong to the tested device:

Product description: Rampage wifi backup camera
Model name: 7710

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

**Report No.:** CGZ3140808-00871-EF Page 59 of 59